Central™
Semiconductor Corp.

WE'RE SERIOUS ABOUT SMD

SMD DATA BOOK
1995

Central™ Semiconductor Corp.
SMD DATA BOOK 1995

Central Semiconductor Corp. has been in the business of manufacturing leaded discrete semiconductors since 1974. Surface Mounted Devices were added to our product portfolio in 1987.

Products of our 11 SMD families are manufactured on highly automated and efficient assembly lines using state of the art equipment to yield high thruput levels at very low PPM. The end result is a high quality device which is brought to market competitively priced.

In addition to our high volume capability, inquiries for custom SMD products are welcomed. Your unique devices can be developed from concept to reality, and rapidly brought to market in moderate or volume quantities.

Call Central for SMD or leaded discretes and find out just how "CENTRAL MAKES THE DIFFERENCE."

Our leaded product families include:

Bridge Rectifiers

Chips

Current Limiting Diodes

Field Effect Transistors

Germanium Diodes

Power Transistors

Rectifiers

Silicon Diodes

Small Signal Transistors

Thyristors

Zener Diodes

Selected, Special, and Custom SMDs

In addition to our standard surface mounted devices, Central Semiconductor is committed to building Selected, Special, and Custom SMDs.

SELECTED SMD

A selected SMD is a standard device that is selected for an additional or tightened electrical parameter(s).

For example:

CMPT2222A selected for higher voltage
The standard BV_{CEO} is 40 volts min and the customer's application requires 60 volts min.

CZT3019 selected for higher gain
The standard h_{FE} is 100 min, 300 max and the customer's special selection is 160 min, 300 max.

CMPZ5240B selected for tighter tolerance
The standard tolerance is ±5% and the customer requires ±2% tolerance.

SPECIAL SMD

A Special SMD is required when a selection of a standard device is not possible. Normally, this is accomplished through a special diffusion of a standard process.

For example:

CMPD2003 with ultra low leakage
A special diffusion is required to yield a leakage level far below the standard I_R of 100nA max.

CXT3904 with extremely high gain
A special diffusion is required to yield a minimum h_{FE} above the standard range of 100 min, 300 max. (example: a range of 320 min, 500 max)

CLLR1U-04 with higher voltage
A special diffusion can be performed to yield a B_{VR} of 600 volts min, instead of 400 volts min.

CUSTOM SMD

A Custom SMD may be developed for a unique customer requirement. Custom devices can be obtained by either assembling one of our standard chips into a different case or by developing a completely new device.

For example:

CXSH-4 is a custom device that was developed for a customer requirement. This device is a Schottky Rectifier (normally built in a MELF or SMB case) assembled into an SOT-89 case to meet a very tight height restriction.

CBR1F-D020S is a custom device. Our standard SMD Bridge Rectifier is built with general purpose chips; this application requires fast recovery chips.

While other manufacturers shy away from Selected and Special and Custom devices, Central is committed to meeting Customer needs for Selected and Special SMDs. Central will review and determine feasibility of Custom devices.

QUALITY POLICY

- Our definition of quality is **Complete Customer Satisfaction 100% of the time.**

- We are dedicated to manufacturing Competitively Priced, **Quality Products** delivered on time and professionally serviced.

- We define **Excellence** as surpassing our customers' expectations.

- Our perpetual challenge is the pursuit of **Achieving Excellence** in everything we do, and we strive to accomplish this by utilizing Ongoing Training for Continuous Improvement in all areas.

- We recognize that customer satisfaction results in **Repeat Business**.

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* Special Order

CE	Closest equivalent (slight to significant electrical and/or mechanical differences)	**EM**	Exact electrical and mechanical.
SE	Exact mechanical equivalent, slight electrical differences.	**SM**	Exact electrical equivalent, slight mechanical differences.

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* Special Order

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* Special Order

CE	Closest equivalent (slight to significant electrical and/or mechanical differences)	**EM**	Exact electrical and mechanical.
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CMPT8099			30	198
CMPT8599			30	198
CMPTA06			30	200
CMPTA13			31	202
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CMPTA64			31	202
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CQ89NS			51	246
CSHD3-40			49	248
CSHD6-40C			49	250
CUD3-02			48	252
CUD6-02C			48	254
CXSH-4			49	256
CXT2222A			35	258
CXT2907A			35	260
CXT3019			35	262
CXT3904			35	264
CXT3906			35	264
CXT4033			35	266
CXT5401			35	268
CXT5551			35	270
CXTA14			35	272
CXTA42			35	274
CXTA64			35	272
CXTA92			35	274
CZS5064			51	276
CZSH-4			49	278
CZT 31C			37	280
CZT 32C			37	280
CZT 122			37	282

* Special Order

CE	Closest equivalent (slight to significant electrical and/or mechanical differences)	**EM**	Exact electrical and mechanical.
SE	Exact mechanical equivalent, slight electrical differences.	**SM**	Exact electrical equivalent, slight mechanical differences.

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CZT 127			37	282
CZT 2000			36	284
CZT 2222A			36	286
CZT 2907A			36	288
CZT 2955			37	290
CZT 3019			36	292
CZT 3055			37	290
CZT 3904			36	294
CZT 3906			36	294
CZT 4033			36	296
CZT 5338			37	298
CZT 5401			36	300
CZT 5551			36	302
CZTA14			36	304
CZTA42			36	306
CZTA44			36	308
CZTA64			36	304
CZTA92			36	306
DA204K	CMPD7000	EM	38	148
DAN202VAK	CMPD2838	EM	38	138
DAN212K	CMPD 914	EM	38	132
DAN217	CMPD7000	EM	38	148
DAP202K	CMPD2836	EM	38	138
DAP202VAK	CMPD2836	EM	38	138
DF005S	CBR 1-D020S	EM	50	68
DF01S	CBR 1-D020S	EM	50	68
DF02S	CBR 1-D020S	EM	50	68
DF04S	CBR 1-D040S	EM	50	68
DF06S	CBR 1-D060S	EM	50	68
DF08S	CBR 1-D100S	EM	50	68
DF10S	CBR 1-D100S	EM	50	68
DL4004	CLLR1-04	EM	46	116
DL4729 thru	CLL4729A thru	EM	43	112
DL4752A	CLL4752A	EM	43	112
DL5817	CLLSH1-20	EM	49	122
DL5818	CLLSH1-40	EM	49	122
DL5819	CLLSH1-40	EM	49	122
EGL41A	CLLR1U-01	EM	48	120
EGL41B	CLLR1U-01	EM	48	120
EGL41C	CLLR1U-02	EM	48	120
EGL41D	CLLR1U-02	EM	48	120
EGL41E	CLLR1U-04	EM	48	120
EGL41F	CLLR1U-04	EM	48	120
EGL41G	CLLR1U-04	EM	48	120
ES1A	CMR1U-01	EM	48	224
ES1B	CMR1U-01	EM	48	224
ES1C	CMR1U-02	EM	48	224
ES1D	CMR1U-02	EM	48	224
ES2A	CMR1U-01	CE	48	224
ES2B	CMR1U-01	CE	48	224
ES2C	CMR1U-02	CE	48	224
ES2D	CMR1U-02	CE	48	224
FDLL 914A	CLL4448	EM	38	106
FDLL 914B	CLL4448	EM	38	106
FDLL 916A	CLL4448	EM	38	106
FDLL 916B	CLL4448	EM	38	106
FDLL4148	CLL 914	EM	38	98
FDLL4149	CLL4448	EM	38	106
FDLL4150	CLL4150	EM	38	104
FDLL4446	CLL4448	EM	38	106
FDLL4447	CLL4448	EM	38	106
FDLL4448	CLL4448	EM	38	106
FDLL4449	CLL4448	EM	38	106
FDSO4148	CMPD 914	EM	38	132
FDSO1201	CMPD 914/4448	SE	38	132
FDSO1203	CMPD7000	SE	38	148
FDSO1204	CMPD2838	SE	38	138
FDSO1205	CMPD2836	SE	38	138
FMMD 914	CMPD 914	EM	38	132
FMMD6050	CMPD4448	EM	38	142
FMMT 918	CMPT 918	EM	31	158
FMMT2222	CMPT2222A	EM	30	162
FMMT2222A	CMPT2222A	EM	30	162
FMMT2369	CMPT2369	EM	30	164
FMMT2369A			---	*
FMMT2484	CMPT2484	EM	30	166
FMMT2907	CMPT2907A	EM	30	168
FMMT2907A	CMPT2907A	EM	30	168
FMMT3903	CMPT3904	SE	30	176
FMMT3904	CMPT3904	EM	30	176
FMMT3905	CMPT3906	SE	30	176
FMMT3906	CMPT3906	EM	30	176
FMMT4124	CMPT3904	SE	30	176
FMMT4125	CMPT3906	SE	30	176
FMMT5087	CMPT5087	EM	30	182
FMMTA05	CMPTA06	EM	30	200
FMMTA06	CMPTA06	EM	30	200
FMMTA12	CMPTA13	SE	31	202

* Special Order

CE	Closest equivalent (slight to significant electrical and/or mechanical differences)	**EM**	Exact electrical and mechanical.
SE	Exact mechanical equivalent, slight electrical differences.	**SM**	Exact electrical equivalent, slight mechanical differences.

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FMMTA13	CMPTA13	EM	31	202
FMMTA14	CMPTA14	EM	31	202
FMMTA20	CMPT3904	EM	30	176
FMMTA42	CMPTA42	EM	31	208
FMMTA43	CMPTA42	EM	31	208
FMMTA55	CMPTA56	EM	30	200
FMMTA56	CMPTA56	EM	30	200
FMMTA70	CMPT3906	EM	30	176
FMMTA92	CMPTA92	EM	31	208
FMMTA93	CMPTA92	EM	31	208
FTSO 706	CMPT2369	EM	30	164
FTSO 706A	CMPT2369	EM	30	164
FTSO 918	CMPT 918	EM	31	158
FTSO 930	CMPT2484	SE	30	166
FTSO 930A	CMPT2484	SE	30	166
FTSO2218	CMPT2222A	SE	30	162
FTSO2218A	CMPT2222A	SE	30	162
FTSO2219	CMPT2222A	EM	30	162
FTSO2219A	CMPT2222A	EM	30	162
FTSO2221	CMPT2222A	SE	30	162
FTSO2221A	CMPT2222A	SE	30	162
FTSO2222	CMPT2222A	EM	30	162
FTSO2222A	CMPT2222A	EM	30	162
FTSO2369	CMPT2369	EM	30	164
FTSO2369A			---	*
FTSO2484	CMPT2484	EM	30	166
FTSO2904	CMPT2907A	SE	30	168
FTSO2904A	CMPT2907A	SE	30	168
FTSO2905	CMPT2907A	EM	30	168
FTSO2905A	CMPT2907A	EM	30	168
FTSO2906	CMPT2907A	SE	30	168
FTSO2906A	CMPT2907A	SE	30	168
FTSO2907	CMPT2907A	EM	30	168
FTSO2907A	CMPT2907A	EM	30	168
FTSO3563	CMPT 918	SE	31	158
FTSO3638	CMPT4403	SE	30	180
FTSO3638A	CMPT4403	SE	30	180
FTSO3639	CMPT3640	EM	30	172
FTSO3640	CMPT3640	EM	30	172
FTSO3646	CMPT3646	EM	30	174
FTSO3903	CMPT3904	SE	30	176
FTSO3904	CMPT3904	EM	30	176
FTSO3905	CMPT3906	SE	30	176
FTSO3906	CMPT3906	EM	30	176

Industry Part Number	Central Part Number	Code	Selection Guide	Data Sheet
FTSO4123	CMPT3904	SE	30	176
FTSO4124	CMPT3904	SE	30	176
FTSO4125	CMPT3906	SE	30	176
FTSO4126	CMPT3906	SE	30	176
FTSO4208	CMPT3640	SE	30	172
FTSO4209	CMPT3640	SE	30	172
FTSO4258	CMPT3640	SE	30	172
FTSO4274	CMPT2369	SE	30	164
FTSO4275	CMPT2369	SE	30	164
FTSO4400	CMPT4401	SE	30	180
FTSO4401	CMPT4401	EM	30	180
FTSO4402	CMPT4403	SE	30	180
FTSO4403	CMPT4403	EM	30	180
FTSO5086	CMPT5086	EM	30	182
FTSO5087	CMPT5087	EM	30	182
FTSO5088	CMPT5088	EM	30	184
FTSO5089	CMPT5089	EM	30	184
FTSO5400	CMPT5401	EM	31	188
FTSO5401	CMPT5401	EM	31	188
FTSO5550	CMPT5551	EM	31	190
FTSO5551	CMPT5551	EM	31	190
FTSO5769	CMPT2369	SE	30	164
FTSO5770	CMPT 918	SE	31	158
FTSO5771	CMPT3640	SE	30	172
FTSOA05	CMPTA06	EM	30	200
FTSOA06	CMPTA06	EM	30	200
FTSOA12	CMPTA13	SE	31	202
FTSOA13	CMPTA13	EM	31	202
FTSOA14	CMPTA14	EM	31	202
FTSOA20	CMPT3904	EM	30	176
FTSOA42	CMPTA42	EM	31	208
FTSOA43	CMPTA42	EM	31	208
FTSOA55	CMPTA56	EM	30	200
FTSOA56	CMPTA56	EM	30	200
FTSOA70	CMPT3906	EM	30	176
FTSOL01	CMPT5551	EM	31	190
FTSOL51	CMPT5401	EM	31	188
GF1A	CMR1-02	EM	46	222
GF1B	CMR1-02	EM	46	222
GF1D	CMR1-02	EM	46	222
GF1G	CMR1-04	EM	46	222
GF1J	CMR1-06	EM	46	222
GF1K	CMR1-10	EM	46	222
GF1M	CMR1-10	EM	46	222

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CE	Closest equivalent (slight to significant electrical and/or mechanical differences)	**EM**	Exact electrical and mechanical.
SE	Exact mechanical equivalent, slight electrical differences.	**SM**	Exact electrical equivalent, slight mechanical differences.

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Industry Part Number	Central Part Number	Code	Selection Guide	Data Sheet
GL41A	CLLR1-02	EM	46	116
GL41B	CLLR1-02	EM	46	116
GL41D	CLLR1-02	EM	46	116
GL41G	CLLR1-04	EM	46	116
GL41J	CLLR1-06	EM	46	116
GL41K	CLLR1-10	EM	46	116
GL41M	CLLR1-10	EM	46	116
GLL4735A thru	CLL4735A thru	EM	43	112
GLL4752A	CLL4752A	EM	43	112
LL4148	CLL 914	EM	38	98
LL4150	CLL4150	EM	38	104
LL4448	CLL4448	EM	38	106
MBAL99	CMPD 914	EM	38	132
MBAS16	CMPD 914	EM	38	132
MBAV70	CMPD2838	EM	38	138
MBAV99	CMPD7000	EM	38	148
MBAW56	CMPD2836	EM	38	138
MBRL120	CLLSH1-20	EM	49	122
MBRL130	CLLSH1-40	EM	49	122
MBRL140	CLLSH1-40	EM	49	122
MBRS120	CMSH1-20	EM	49	232
MBRS130	CMSH1-40	EM	49	232
MBRS140	CMSH1-40	EM	49	232
MBRS170	CMSH1-60	SE	49	232
MBRS340TS	CMSH3-40	EM	49	236
MBRS360TS	CMSH3-60	EM	49	236
MURS320T3	CMR3U-02	EM	48	228
MURS360T3	CMR3U-06	EM	48	228
MJD 31C	CJD 31C	EM	37	78
MJD 32C	CJD 32C	EM	37	78
MJD 41C	CJD 41C	EM	37	80
MJD 42C	CJD 42C	EM	37	80
MJD 47	CJD 47	EM	37	82
MJD 50	CJD 50	EM	37	82
MJD 112	CJD 112	EM	37	84
MJD 117	CJD 117	EM	37	84
MJD 122	CJD 122	EM	37	86
MJD 127	CJD 127	EM	37	86
MJD 200	CJD 200	EM	37	88
MJD 210	CJD 210	EM	37	88
MJD 340	CJD 340	EM	37	90
MJD 350	CJD 350	EM	37	90
MJD 2955	CJD 2955	EM	37	92
MJD 3055	CJD 3055	EM	37	92

Industry Part Number	Central Part Number	Code	Selection Guide	Data Sheet
MJD13003	CJD13003	EM	37	94
MLL 746A	CLL5226B	EM	42	114
MLL 747A	CLL5227B	EM	42	114
MLL 748A	CLL5228B	EM	42	114
MLL 749A	CLL5229B	EM	42	114
MLL 750A	CLL5230B	EM	42	114
MLL 751A	CLL5231B	EM	42	114
MLL 752A	CLL5232B	EM	42	114
MLL 753A	CLL5234B	EM	42	114
MLL 754A	CLL5235B	EM	42	114
MLL 755A	CLL5236B	EM	42	114
MLL 756A	CLL5237B	EM	42	114
MLL 757A	CLL5239B	EM	42	114
MLL 758A	CLL5240B	EM	42	114
MLL 759A	CLL5242B	EM	42	114
MLL 957B	CLL5235B	SE	42	114
MLL 958B	CLL5236B	SE	42	114
MLL 959B	CLL5237B	SE	42	114
MLL 960B	CLL5239B	SE	42	114
MLL 961B	CLL5240B	SE	42	114
MLL 962B	CLL5241B	SE	42	114
MLL 963B	CLL5242B	SE	42	114
MLL 964B	CLL5243B	SE	42	114
MLL 965B	CLL5245B	SE	42	114
MLL 966B	CLL5246B	SE	42	114
MLL 967B	CLL5248B	SE	42	114
MLL 968B	CLL5250B	SE	42	114
MLL 969B	CLL5251B	SE	42	114
MLL 970B	CLL5252B	SE	42	114
MLL 971B	CLL5254B	SE	42	114
MLL 972B	CLL5256B	SE	42	114
MLL4001	CLLR1-02	EM	46	116
MLL4002	CLLR1-02	EM	46	116
MLL4003	CLLR1-02	EM	46	116
MLL4004	CLLR1-04	EM	46	116
MLL4625	CLL4625	EM	42	108
MLL4626	CLL4626	EM	42	108
MLL4627	CLL4627	EM	42	108
MLL4689 thru	CLL4689 thru	EM	43	110
MLL4714	CLL4714	EM	43	110
MLL4729A thru	CLL4729A thru	EM	43	112
MLL4752A	CLL4752A	EM	43	112
MLL5226B thru	CLL5226B thru	EM	42	114
MLL5257B	CLL5257B	EM	42	114

* Special Order

CE	Closest equivalent (slight to significant electrical and/or mechanical differences)	**EM**	Exact electrical and mechanical.
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MMBD 101	CMPD6263	EM	39	146
MMBD 301	CMPSH-3	SE	39	156
MMBD 352	CMPD6263S	SE	39	146
MMBD 701	CMPD6263	SE	39	146
MMBD 914	CMPD 914	EM	38	132
MMBD2835	CMPD2836	EM	38	138
MMBD2836	CMPD2836	EM	38	138
MMBD2837	CMPD2838	EM	38	138
MMBD2838	CMPD2838	EM	38	138
MMBD6050	CMPD4448	EM	38	142
MMBD6100	CMPD2838	EM	38	138
MMBD7000	CMPD7000	EM	38	148
MMBF4391	CMPF4391	EM	32	150
MMBF4392	CMPF4392	EM	32	150
MMBF4393	CMPF4393	EM	32	150
MMBR2857	CMPT5179	EM	31	186
MMBR5179	CMPT5179	EM	31	186
MMBS5060	CMPS5064	EM	51	154
MMBS5061	CMPS5064	EM	51	154
MMBS5062	CMPS5064	EM	51	154
MMBS5063	CMPS5064	EM	51	154
MMBS5064	CMPS5064	EM	51	154
MMBT 918	CMPT 918	EM	31	158
MMBT2222	CMPT2222A	EM	30	162
MMBT2222A	CMPT2222A	EM	30	162
MMBT2369	CMPT2369	EM	30	164
MMBT2484	CMPT2484	EM	30	166
MMBT2907	CMPT2907A	EM	30	168
MMBT2907A	CMPT2907A	EM	30	168
MMBT3638	CMPT4403	SE	30	180
MMBT3638A	CMPT4403	SE	30	180
MMBT3640	CMPT3640	EM	30	172
MMBT3646	CMPT3646	EM	30	174
MMBT3903	CMPT3904	SE	30	176
MMBT3904	CMPT3904	EM	30	176
MMBT3906	CMPT3906	EM	30	176
MMBT4123	CMPT3904	SE	30	176
MMBT4124	CMPT3904	SE	30	176
MMBT4125	CMPT3906	SE	30	176
MMBT4126	CMPT3906	SE	30	176
MMBT4401	CMPT4401	EM	30	180
MMBT4403	CMPT4403	EM	30	180
MMBT5086	CMPT5086	EM	30	182
MMBT5087	CMPT5087	EM	30	182
MMBT5088	CMPT5088	EM	30	184
MMBT5089	CMPT5089	EM	30	184
MMBT5401	CMPT5401	EM	31	188
MMBT5551	CMPT5551	EM	31	190
MMBT6427	CMPT6427	EM	31	192
MMBT6428	CMPT6428	EM	30	194
MMBT6429	CMPT6429	EM	30	194
MMBT6517	CMPT6517	EM	31	196
MMBT6520	CMPT6520	EM	31	196
MMBT8099	CMPT8099	EM	30	198
MMBT8599	CMPT8599	EM	30	198
MMBTA05	CMPTA06	EM	30	200
MMBTA06	CMPTA06	EM	30	200
MMBTA13	CMPTA13	EM	31	202
MMBTA14	CMPTA14	EM	31	202
MMBTA20	CMPT3904	EM	30	176
MMBTA27	CMPTA27	EM	31	204
MMBTA42	CMPTA42	EM	31	208
MMBTA43	CMPTA42	EM	31	208
MMBTA44	CMPTA44	EM	31	210
MMBTA56	CMPTA56	EM	30	200
MMBTA63	CMPTA63	EM	31	202
MMBTA64	CMPTA64	EM	31	202
MMBTA70	CMPT3906	EM	30	176
MMBTA92	CMPTA92	EM	31	208
MMBTA93	CMPTA92	EM	31	208
MMBTH10	CMPTH10	EM	31	212
MMBZ15VD	CMPZDA15V	CE	42	220
MMBZ5226 thru	CMPZ5226B thru	EM	41	218
MMBZ5257	CMPZ5257B	EM	41	218
MMST 918	CMPT 918	EM	31	158
MMST-A06	CMPTA06	EM	30	200
MMST-A13	CMPTA13	EM	31	202
MMST-A14	CMPTA14	EM	31	202
MMST-A20	CMPT3904	EM	30	176
MMST-A56	CMPTA56	EM	30	200
MMST-A63	CMPTA63	EM	31	202
MMST-A64	CMPTA64	EM	31	202
MMST-A70	CMPT3906	EM	30	176
MMST2222	CMPT2222A	EM	30	162
MMST2222A	CMPT2222A	EM	30	162
MMST2907	CMPT2907A	EM	30	168
MMST2907A	CMPT2907A	EM	30	168
MMST3904	CMPT3904	EM	30	176

* Special Order

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MMST3906	CMPT3906	EM	30	176
MMST4124	CMPT3904	SE	30	176
MMST4126	CMPT3906	SE	30	176
MMST4401	CMPT4401	EM	30	180
MMST4403	CMPT4403	EM	30	180
MMST5086	CMPT5086	EM	30	182
MMST5087	CMPT5087	EM	30	182
MMST5088	CMPT5088	EM	30	184
MMST5089	CMPT5089	EM	30	184
MURS105	CMR1U-01	EM	48	224
MURS110	CMR1U-01	EM	48	224
MURS115	CMR1U-02	EM	48	224
MURS120	CMR1U-02	EM	48	224
MURS130	CMR1U-04	EM	48	224
MURS140	CMR1U-04	EM	48	224
MXT2222	CXT2222A	EM	35	258
MXT2222A	CXT2222A	EM	35	258
MXT2907	CXT2907A	EM	35	260
MXT2907A	CXT2907A	EM	35	260
MXT3904	CXT3904	EM	35	264
MXT3906	CXT3906	EM	35	264
MXTA14	CXTA14	EM	35	272
MXTA42	CXTA42	EM	35	274
MXTA43	CXTA42	EM	35	274
MXTA92	CXTA92	EM	35	274
MXTA93	CXTA92	EM	35	274
PMBD 101	CMPD6263	SE	39	146
PMBD 352	CMPD6263S	SE	39	146
PMBD 914	CMPD 914	EM	38	132
PMBD2835	CMPD2836	EM	38	138
PMBD2836	CMPD2836	EM	38	138
PMBD2837	CMPD2838	EM	38	138
PMBD2838	CMPD2838	EM	38	138
PMBD6050	CMPD4448	EM	38	142
PMBD6100	CMPD2838	EM	38	138
PMBD7000	CMPD7000	EM	38	148
PMBF4391	CMPF4391	EM	32	150
PMBF4392	CMPF4392	EM	32	150
PMBF4393	CMPF4393	EM	32	150
PMBT2222	CMPT2222A	EM	30	162
PMBT2222A	CMPT2222A	EM	30	162
PMBT2369	CMPT2369	EM	30	164
PMBT2907	CMPT2907A	EM	30	168
PMBT2907A	CMPT2907A	EM	30	168
PMBT3640	CMPT3640	EM	30	172
PMBT3903	CMPT3904	SE	30	176
PMBT3904	CMPT3904	EM	30	176
PMBT3906	CMPT3906	EM	30	176
PMBT4123	CMPT3904	SE	30	176
PMBT4124	CMPT3904	SE	30	176
PMBT4125	CMPT3906	SE	30	176
PMBT4126	CMPT3906	SE	30	176
PMBT4401	CMPT4401	EM	30	180
PMBT4403	CMPT4403	EM	30	180
PMBT5086	CMPT5086	EM	30	182
PMBT5087	CMPT5087	EM	30	182
PMBT5088	CMPT5088	EM	30	184
PMBT5089	CMPT5089	EM	30	184
PMBT5400	CMPT5401	EM	31	188
PMBT5401	CMPT5401	EM	31	188
PMBT5551	CMPT5551	EM	31	190
PMBTA05	CMPTA06	EM	30	200
PMBTA06	CMPTA06	EM	30	200
PMBTA13	CMPTA13	EM	31	202
PMBTA14	CMPTA14	EM	31	202
PMBTA20	CMPT3904	EM	30	176
PMBTA42	CMPTA42	EM	31	208
PMBTA43	CMPTA42	EM	31	208
PMBTA55	CMPTA56	EM	30	200
PMBTA56	CMPTA56	EM	30	200
PMBTA63	CMPTA63	EM	31	202
PMBTA64	CMPTA64	EM	31	202
PMBTA70	CMPT3906	EM	30	176
PMBTA92	CMPTA92	EM	31	208
PMBTA93	CMPTA92	EM	31	208
PMBZ5225B thru	CMPZ5225B thru	EM	41	218
PMBZ5257B	CMPZ5257B	EM	41	218
PMLL4148	CLL 914	EM	38	98
PMLL4150	CLL4150	EM	38	104
PMLL4151	CLL4448	SE	38	106
PMLL4153	CLL4448	SE	38	106
PMLL4446	CLL4448	EM	38	106
PMLL4448	CLL4448	EM	38	106
PMLL5226 thru	CLL5226B thru	EM	42	114
PMLL5257	CLL5257B	EM	42	114
PXT2222	CXT2222A	EM	35	258
PXT2222A	CXT2222A	EM	35	258
PXT2907	CXT2907A	EM	35	260

* Special Order

CE	Closest equivalent (slight to significant electrical and/or mechanical differences)	**EM**	Exact electrical and mechanical.
SE	Exact mechanical equivalent, slight electrical differences.	**SM**	Exact electrical equivalent, slight mechanical differences.

Index/Cross Reference (Continued)

Industry Part Number	Central Part Number	Code	Selection Guide	Data Sheet
PXT2907A	CXT2907A	EM	35	260
PXT3904	CXT3904	EM	35	264
PXT3906	CXT3904	EM	35	264
PXT4401	CXT2222A	SE	35	258
PXT4403	CXT2907A	SE	35	260
PXTA14	CXTA14	EM	35	272
PXTA42	CXTA42	EM	35	274
PXTA64	CXTA64	EM	35	272
PXTA92	CXTA92	EM	35	274
PZT2222	CZT2222A	EM	36	286
PZT2222A	CZT2222A	EM	36	286
PZT2907	CZT2907A	EM	36	288
PZT2907A	CZT2907A	EM	36	288
PZT3904	CZT3904	EM	36	294
PZT3906	CZT3906	EM	36	294
PZTA13	CZTA14	EM	36	304
PZTA14	CZTA14	EM	36	304
PZTA42	CZTA42	EM	36	306
PZTA43	CZTA42	EM	36	306
PZTA63	CZTA64	EM	36	304
PZTA64	CZTA64	EM	36	304
PZTA92	CZTA92	EM	36	306
PZTA93	CZTA92	EM	36	306
RB110C	CXSH-4	EM	49	256
RB400D	CMPSH-3	SE	39	156
RB420D	CMPSH-3	SE	39	156
RB421D	CMPSH-3	SE	39	156
RB425D	CMPSH-3C	SE	39	156
RB705D	CMSH1-20	EM	49	232
RD411D	CMPSH-3	SE	39	156
RF1A	CMR1U-01	EM	48	224
RF1B	CMR1U-01	EM	48	224
RF1D	CMR1U-02	EM	48	224
RF1G	CMR1U-04	EM	48	224
RGL41A	CLLR1F-02	EM	47	118
RGL41B	CLLR1F-02	EM	47	118
RGL41D	CLLR1F-02	EM	47	118
RGL41G	CLLR1F-06	EM	47	118
RGL41J	CLLR1F-06	EM	47	118
RGL41K	CLLR1F-10	EM	47	118
RGL41M	CLLR1F-10	EM	47	118
RLR4001	CLLR1-02	EM	46	116
RLR4002	CLLR1-02	EM	46	116
RLR4003	CLLR1-02	EM	46	116
RLR4004	CLLR1-04	EM	46	116
RLS4148	CLL 914	EM	38	98
RLS4149	CLL 914	EM	38	98
RLS4150	CLL4150	EM	38	104
RLS4151	CLL4448	SE	38	106
RLS4152	CLL4448	SE	38	106
RLS4153	CLL4448	SE	38	106
RLS4154	CLL4448	EM	38	106
RLS4446	CLL4448	EM	38	106
RLS4447	CLL4448	EM	38	106
RLS4448	CLL4448	EM	38	106
RLS4449	CLL4448	EM	38	106
RLS4450	CLL4150	SE	38	104
RLS4454	CLL4448	EM	38	106
RLZ5227B thru	CLL5227B thru	EM	42	114
RLZ5257B	CLL5257B	EM	42	114
RS2A	CMR1U-01	CE	48	224
RS2B	CMR1U-01	CE	48	224
RS2D	CMR1U-02	CE	48	224
RS2G	CMR1U-04	CE	48	224
RXT-A14	CXTA14	EM	35	272
RXT-A64	CXTA64	EM	35	272
RXT2222A	CXT2222A	EM	35	258
RXT2907A	CXT2907A	EM	35	260
RXT3904	CXT3904	EM	35	264
RXT3906	CXT3906	EM	35	264
S2A	CMR1-02	CE	46	222
S2B	CMR1-02	CE	46	222
S2D	CMR1-02	CE	46	222
S2G	CMR1-04	CE	46	222
S2J	CMR1-06	CE	46	222
S2K	CMR1-10	CE	46	222
S2M	CMR1-10	CE	46	222
SGL41-20	CLLSH1-20	EM	49	122
SGL41-30	CLLSH1-40	EM	49	122
SGL41-40	CLLSH1-40	EM	49	122
SGL41-50	CLLSH1-60	EM	49	122
SGL41-60	CLLSH1-60	EM	49	122
SM4001	CLLR1-02	EM	46	116
SM4002	CLLR1-02	EM	46	116
SM4003	CLLR1-02	EM	46	116
SM4004	CLLR1-04	EM	46	116
SM4005	CLLR1-06	EM	46	116
SM4006	CLLR1-10	EM	46	116

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* Special Order

CE	Closest equivalent (slight to significant electrical and/or mechanical differences)	**EM**	Exact electrical and mechanical.
SE	Exact mechanical equivalent, slight electrical differences.	**SM**	Exact electrical equivalent, slight mechanical differences.

Index/Cross Reference (Continued)

Industry Part Number	Central Part Number	Code	Selection Guide	Data Sheet
SM4007	CLLR1-10	EM	46	116
SM4933	CLLR1F-02	EM	47	118
SM4934	CLLR1F-02	EM	47	118
SM4935	CLLR1F-02	EM	47	118
SM4936	CLLR1F-06	EM	47	118
SM4937	CLLR1F-06	EM	47	118
SMBD 914	CMPD 914	EM	38	132
SMBD2835	CMPD2836	EM	38	138
SMBD2836	CMPD2836	EM	38	138
SMBD2837	CMPD2836	EM	38	138
SMBD2838	CMPD2838	EM	38	138
SMBD6050	CMPD4448	EM	38	142
SMBD6100	CMPD2838	EM	38	138
SMBD7000	CMPD7000	EM	38	148
SMBT2222	CMPT2222A	EM	30	162
SMBT2222A	CMPT2222A	EM	30	162
SMBT2907	CMPT2907A	EM	30	168
SMBT2907A	CMPT2907A	EM	30	168
SMBT3904	CMPT3904	EM	30	176
SMBT3906	CMPT3906	EM	30	176
SMBT4124	CMPT3904	SE	30	176
SMBT4126	CMPT3906	SE	30	176
SMBT4401	CMPT4401	EM	30	180
SMBT4403	CMPT4403	EM	30	180
SMBT5086	CMPT5086	EM	30	182
SMBT5087	CMPT5087	EM	30	182
SMBT5088	CMPT5088	EM	30	184
SMBTA05	CMPTA06	EM	30	200
SMBTA06	CMPTA06	EM	30	200
SMBTA13	CMPTA13	EM	31	202
SMBTA14	CMPTA14	EM	31	202
SMBTA20	CMPT3904	EM	30	176
SMBTA42	CMPTA42	EM	31	208
SMBTA43	CMPTA42	EM	31	208
SMBTA55	CMPTA56	EM	30	200
SMBTA56	CMPTA56	EM	30	200
SMBTA63	CMPTA63	EM	31	202
SMBTA64	CMPTA64	EM	31	202
SMBTA70	CMPT3904	EM	30	176
SMBTA92	CMPTA92	EM	31	208
SMBTA93	CMPTA92	EM	31	208
SO 517	CMPTA13	EM	31	202
SO 642	CMPTA42	EM	31	208
SO 692	CMPTA92	EM	31	208
SO 918	CMPT918	EM	31	158
SO 930	CMPT2484	SE	30	166
SO1711	CMPT2222A	SE	30	162
SO1893	CMPT2222A	SE	30	162
SO2221	CMPT2222A	SE	30	162
SO2221A	CMPT2222A	SE	30	162
SO2222	CMPT2222A	EM	30	162
SO2222A	CMPT2222A	EM	30	162
SO2369	CMPT2369	EM	30	164
SO2369A			---	*
SO2484	CMPT2484	EM	30	166
SO2894	CMPT3640	EM	30	172
SO2906	CMPT2907A	SE	30	168
SO2906A	CMPT2907A	SE	30	168
SO2907	CMPT2907A	EM	30	168
SO2907A	CMPT2907A	EM	30	168
SO3903	CMPT3904	SE	30	176
SO3904	CMPT3904	EM	30	176
SO3905	CMPT3906	SE	30	176
SO3906	CMPT3906	EM	30	176
SO4401	CMPT4401	EM	30	180
SO4403	CMPT4403	EM	30	180
SO5400	CMPT5401	EM	31	188
SO5401	CMPT5401	EM	31	188
SO5550	CMPT5551	EM	31	190
SO5551	CMPT5551	EM	31	190
SOA05	CMPTA06	EM	30	200
SOA06	CMPTA06	EM	30	200
SOA55	CMPTA56	EM	30	200
SOA56	CMPTA56	EM	30	200
SS12	CMSH1-20	SM	49	232
SS13	CMSH1-40	SM	49	232
SS14	CMSH1-40	SM	49	232
SS15	CMSH1-60	SM	49	232
SS16	CMSH1-60	SM	49	232
SS22	CMSH1-20	CE	49	232
SS23	CMSH1-40	CE	49	232
SS24	CMSH1-40	CE	49	232
SS25	CMSH1-60	CE	49	232
SS26	CMSH1-60	CE	49	232
SXT2222A	CXT2222A	EM	35	258
SXT2907A	CXT2907A	EM	35	260
SXT3904	CXT3904	EM	35	264
SXT3906	CXT3906	EM	35	264
SXTA42	CXTA42	EM	35	274

* Special Order

CE	Closest equivalent (slight to significant electrical and/or mechanical differences)	**EM**	Exact electrical and mechanical.
SE	Exact mechanical equivalent, slight electrical differences.	**SM**	Exact electrical equivalent, slight mechanical differences.

Index/Cross Reference (Continued)

Industry Part Number	Central Part Number	Code	Selection Guide	Data Sheet
SXTA43	CXTA42	EM	35	274
SXTA92	CXTA92	EM	35	274
SXTA93	CXTA92	EM	35	274
TM4729A thru	CLL4729A thru	EM	43	112
TM4752A	CLL4752A	EM	43	112
TMM5226B thru	CLL5226B thru	EM	42	114
TMM5257B	CLL5257B	EM	42	114
TMPD 914	CMPD 914	EM	38	132
TMPD2835	CMPD2836	EM	38	138
TMPD2836	CMPD2836	EM	38	138
TMPD2837	CMPD2838	EM	38	138
TMPD2838	CMPD2838	EM	38	138
TMPD4148	CMPD 914	EM	38	132
TMPD4150	CMPD4150	EM	38	140
TMPD4448	CMPD4448	EM	38	142
TMPD6050	CMPD4448	EM	38	142
TMPD6100	CMPD2838	EM	38	138
TMPD7000	CMPD7000	EM	38	148
TMPF4391	CMPF4391	EM	32	150
TMPF4392	CMPF4392	EM	32	150
TMPF4393	CMPF4393	EM	32	150
TMPT 918	CMPT 918	EM	31	158
TMPT2221	CMPT2222A	SE	30	162
TMPT2221A	CMPT2222A	SE	30	162
TMPT2222	CMPT2222A	EM	30	162
TMPT2222A	CMPT2222A	EM	30	162
TMPT2484	CMPT2484	EM	30	166
TMPT2906	CMPT2907A	SE	30	168
TMPT2906A	CMPT2907A	SE	30	168
TMPT2907	CMPT2907A	EM	30	168
TMPT2907A	CMPT2907A	EM	30	168
TMPT3638	CMPT4403	SE	30	180
TMPT3638A	CMPT4403	SE	30	180
TMPT3798	CMPT5086	SE	30	182
TMPT3903	CMPT3904	SE	30	176
TMPT3904	CMPT3904	EM	30	176
TMPT3905	CMPT3906	SE	30	176
TMPT3906	CMPT3906	EM	30	176
TMPT4124	CMPT3904	SE	30	176
TMPT4125	CMPT3906	SE	30	176
TMPT4126	CMPT3906	SE	30	176
TMPT4401	CMPT4401	EM	30	180
TMPT4402	CMPT4403	SE	30	180
TMPT4403	CMPT4403	EM	30	180
TMPT5086	CMPT5086	EM	30	182
TMPT5087	CMPT5087	EM	30	182
TMPT5088	CMPT5088	EM	30	184
TMPT5401	CMPT5401	EM	31	188
TMPT5550	CMPT5551	EM	31	190
TMPT5551	CMPT5551	EM	31	190
TMPTA05	CMPTA06	EM	30	200
TMPTA06	CMPTA06	EM	30	200
TMPTA12	CMPTA13	SE	31	202
TMPTA13	CMPTA13	EM	31	202
TMPTA14	CMPTA14	EM	31	202
TMPTA20	CMPT3904	EM	30	176
TMPTA42	CMPTA42	EM	31	208
TMPTA43	CMPTA42	EM	31	208
TMPTA55	CMPTA56	EM	30	200
TMPTA56	CMPTA56	EM	30	200
TMPTA63	CMPTA63	EM	31	202
TMPTA64	CMPTA64	EM	31	202
TMPTA70	CMPT3906	EM	30	176
TMPTA92	CMPTA92	EM	31	208
TMPTA93	CMPTA92	EM	31	208
TMPZ5229 thru	CMPZ5229B thru	EM	41	218
TMPZ5257	CMPZ5257B	EM	41	218
ZC2800E	CMPD6263	SE	39	146
ZC2810E	CMPD6263	SE	39	146
ZC2811E	CMPD6263	SE	39	146
ZC5800E	CMPD6263	SE	39	146

* Special Order

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Leaded to Surface Mount Equivalents

LEADED	SMD	CASE	COMMENTS
1N 914	CMPD 914	SOT-23	Single Switching Diode
	CLL 914	SOD-80	Leadless Switching Diode
	CMPD2836	SOT-23	Dual, Common Anode
	CMPD2838	SOT-23	Dual, Common Cathode
	CMPD7000	SOT-23	Dual, In Series
	BAS28	SOT-143	Dual, Isolated
1N 914B	CMPD4448	SOT-23	
	CLL4448	SOD-80	
1N3600	CMPD4150	SOT-23	Single Switching Diode
	CLL4150	SOD-80	Leadless Switching Diode
	BAS56	SOT-143	Dual High Current Diode, Isolated
1N4001	CLLR1-02	MELF	
	CMR1-02	SMB	
1N4002	CLLR1-02	MELF	
	CMR1-02	SMB	
1N4003	CLLR1-02	MELF	
	CMR1-02	SMB	
1N4004	CLLR1-04	MELF	
	CMR1-04	SMB	
1N4005	CLLR1-06	MELF	
	CMR1-06	SMB	
1N4006	CLLR1-10	MELF	
	CMR1-10	SMB	
1N4007	CLLR1-10	MELF	
	CMR1-10	SMB	
1N4148	CMPD 914	SOT-23	Single Switching Diode
	CLL 914	SOD-80	Leadless Switching Diode
	CMPD2836	SOT-23	Dual, Common Anode
	CMPD2838	SOT-23	Dual, Common Cathode
	CMPD7000	SOT-23	Dual, In Series
	BAS28	SOT-143	Dual, Isolated
1N4150	CMPD4150	SOT-23	Single Switching Diode
	CLL4150	SOD-80	Leadless Switching Diode
	BAS56	SOT-143	Dual High Current Diode, Isolated
1N4448	CMPD4448	SOT-23	Single Switching Diode
	CLL4448	SOD-80	Leadless Switching Diode
	CMPD2836	SOT-23	Dual, Common Anode
	CMPD2838	SOT-23	Dual, Common Cathode
	CMPD7000	SOT-23	Dual, In Series
1N4933	CLLR1F-02	MELF	
	CMR1U-01	SMB	

Leaded to Surface Mount Equivalents (Continued)

LEADED	SMD	CASE	COMMENTS
1N4934	CLLR1F-02	MELF	
	CMR1U-01	SMB	
1N4935	CLLR1F-02	MELF	
	CMR1U-02	SMB	
1N4936	CLLR1F-06	MELF	
	CMR1U-04	SMB	
1N4937	CLLR1F-06	MELF	
	CMR1U-06	SMB	
1N5817	CLLSH1-20	MELF	
	CMSH1-20	SMB	
1N5818	CLLSH1-40	MELF	
	CMSH1-40	SMB	
1N5819	CLLSH1-40	MELF	
	CMSH1-40	SMB	
1N6263	CMPD6263	SOT-23	Single Configuration
	CMPD6263A	SOT-23	Dual, Common Anode
	CMPD6263C	SOT-23	Dual, Common Cathode
	CMPD6263S	SOT-23	Dual, In Series
2N 918	CMPT 918	SOT-23	
2N2222A	CMPT2222A	SOT-23	
	CXT2222A	SOT-89	
	CZT2222A	SOT-223	
2N2369	CMPT2369	SOT-23	
2N2484	CMPT2484	SOT-23	
2N2907A	CMPT2907A	SOT-23	
	CXT2907A	SOT-89	
	CZT2907A	SOT-223	
2N3019	CXT3019	SOT-89	
	CZT3019	SOT-223	
2N3904	CMPT3904	SOT-23	
	CXT3904	SOT-89	
	CZT3904	SOT-223	
2N3906	CMPT3906	SOT-23	
	CXT3906	SOT-89	
	CZT3906	SOT-223	
2N4033	CXT4033	SOT-89	
	CZT4033	SOT-223	

Leaded to Surface Mount Equivalents (Continued)

LEADED	SMD	CASE	COMMENTS
2N4391	CMPF4391	SOT-23	
2N4392	CMPF4392	SOT-23	
2N4393	CMPF4393	SOT-23	
2N4401	CMPT4401	SOT-23	
2N4403	CMPT4403	SOT-23	
2N4416A	CMPF4416A	SOT-23	
2N5060 thru 2N5064	CMPS5064	SOT-23	
2N5086	CMPT5086	SOT-23	
2N5087	CMPT5087	SOT-23	
2N5088	CMPT5088	SOT-23	
2N5089	CMPT5089	SOT-23	
2N5179	CMPT5179	SOT-23	
2N5401	CMPT5401 CXT5401 CZT5401	SOT-23 SOT-89 SOT-223	
2N5460	CMPF5460	SOT-23	Special order, consult factory
2N5461	CMPF5461	SOT-23	Special order, consult factory
2N5462	CMPF5462	SOT-23	Special order, consult factory
2N5485	CMPF5485	SOT-23	
2N5551	CMPT5551 CXT5551 CZT5551	SOT-23 SOT-89 SOT-223	
2N6427	CMPT6427	SOT-23	
2N6428	CMPT6428	SOT-23	
2N6429	CMPT6429	SOT-23	
2N6517	CMPT6517	SOT-23	
2N6520	CMPT6520	SOT-23	
CDSH-4	CMPSH-3 CMPSH-3A CMPSH-3C	SOT-23 SOT-23 SOT-23	Single Configuration Dual, Common Anode Dual, Common Cathode

Leaded to Surface Mount Equivalents (Continued)

LEADED	SMD	CASE	COMMENTS
CDSH-4	CMPSH-3S	SOT-23	Dual, In Series
CSSD2003	CLL2003	SOD-80	
	CMPD2003	SOT-23	
MPS650	CBCP68	SOT-223	
	CBCX68	SOT-89	
MPS750	CBCP69	SOT-223	
	CBCX69	SOT-89	
MPS8099	CMPT8099	SOT-23	
MPS8599	CMPT8599	SOT-23	
MPSA06	CMPTA06	SOT-23	
MPSA13	CMPTA13	SOT-23	
MPSA14	CMPTA14	SOT-23	
	CXTA14	SOT-89	
	CZTA14	SOT-223	
MPSA27	CMPTA27	SOT-23	
MPSA42	CMPTA42	SOT-23	
	CXTA42	SOT-89	
	CZTA42	SOT-223	
MPSA44	CMPTA44	SOT-23	
	CZTA44	SOT-223	
MPSA56	CMPTA56	SOT-23	
MPSA63	CMPTA63	SOT-23	
MPSA64	CMPTA64	SOT-23	
	CXTA64	SOT-89	
	CZTA64	SOT-223	
MPSA92	CMPTA92	SOT-23	
	CXTA92	SOT-89	
	CZTA92	SOT-223	
MPSH10	CMPTH10	SOT-23	
PN3640	CMPT3640	SOT-23	
PN3646	CMPT3646	SOT-23	

Marking Codes

Marking Code	Part Number
02D	CMPS5064
1A	BC846A
1B	BC846B
1E	BC847A
1F	BC847B
1FF	CMPT5551
1G	BC847C
1J	BC848A
1K	BC848B
1L	BC848C
18A	CMPZ5221B
18B	CMPZ5222B
18C	CMPZ5223B
18D	CMPZ5224B
18E	CMPZ5225B
2B	BC849B
2C	BC849C
2F	BC850B
2G	BC850C
3A	BC856A
3B	BC856B
3E	BC857A
3F	BC857B
3G	BC857C
3J	BC858A
3K	BC858B
3L	BC858C
4A	BC859A
4B	BC859B
4C	BC859C
4E	BC860A
4F	BC860B
4G	BC860C
5A	BC807.16
5B	BC807.25
5C	BC807.40
5E	BC808.16
5F	BC808.25
5G	BC808.40
6A	BC817.16
6B	BC817.25
6B	CMPF5484
6B1	CMPF5485
6BG	CMPF4416A
6C	BC817.40
6E	BC818.16
6E	CMPF5460
6E1	CMPF5461
6E2	CMPF5462
6F	BC818.25
6G	BC818.40
6G	CMPF4393
6H	CMPF5486
6J	CMPF4391
6K	CMPF4392
6S	CMPFJ176
6T	CMPFJ310
6W	CMPFJ175
6X	CMPFJ174
702	2N7002
81A	CMPZ5250B
81B	CMPZ5251B
81C	CMPZ5252B
81D	CMPZ5253B
81E	CMPZ5254B
81F	CMPZ5255B
81G	CMPZ5256B
81H	CMPZ5257B
81J	CMPZ5258B
81K	CMPZ5259B
81L	CMPZ5260B
81M	CMPZ5261B
91A	CMPZ4702
91B	CMPZ4703
91C	CMPZ4704
91D	CMPZ4705
91E	CMPZ4706
91F	CMPZ4707
91G	CMPZ4708
91H	CMPZ4709
91J	CMPZ4710
91K	CMPZ4711
91L	CMPZ4712
91M	CMPZ4713
91N	CMPZ4714
A61	BAS28
A82	CMPD2003
A91	CBAS17
AA	BCW60A
AAD	CMPD4448
AB	BCW60B
AB	CMDSH-3
ABA	CMPD4150
AC	BCW60C
AD	BCW60D
AG	BCX70G
AH	BCX70H
AJ	BCX70J
AK	BCX70K
B2	BSV52
BA	BCW61A
BB	BCW61B
BC	BCW61C
BD	BCW61D
BG	BCX71G
BH	BCX71H
BJ	BCX71J
BK	BCX71K
C 02	CMR1-02
C 04	CMR1-04
C 06	CMR1-06
C 1	BCW29
C 1A	CMPT3904
C 1D	CMPTA42

Marking Codes (Continued)

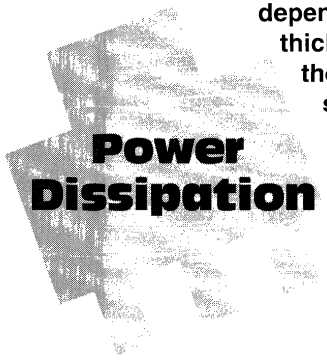
Marking Code	Part Number
C 1G	CMPTA06
C 1J	CMPT2369
C 1K	CMPT6428
C 1L	CMPT6429
C 1M	CMPTA13
C 1N	CMPTA14
C 1P	CMPT2222A
C 1Q	CMPT5088
C 1R	CMPT5089
C 1U	CMPT2484
C 1V	CMPT6427
C 1X	CMPT 930
C 1Z	CMPT6517
C 2	BCW30
C 2A	CMPT3906
C 2D	CMPTA92
C 2F	CMPT2907A
C 2G	CMPTA56
C 2J	CMPT3640
C 2L	CMPT5401
C 2P	CMPT5086
C 2Q	CMPT5087
C 2R	CMPT3646
C 2T	CMPT4403
C 2U	CMPTA63
C 2V	CMPTA64
C 2W	CMPT8599
C 2X	CMPT4401
C 2Z	CMPT6520
C 3A	CMPT3019
C 3B	CMPT 918
C 3E	CMPTH10
C 3Z	CMPTA44
C 4A	CMPT4033
C 5C	CMPD7000
C 5D	CMPD 914
C 6F	CMPZ4619
C 6G	CMPZ4620
C 6H	CMPZ4621
C 6J	CMPZ4622
C 6K	CMPZ4623
C 6L	CMPZ4624
C 6M	CMPZ4625
C 6N	CMPZ4626
C 6P	CMPZ4627
C 7	BCF29
C 7H	CMPT5179
C 8	BCF30
C 8A	CMPZ5226B
C 8B	CMPZ5227B
C 8C	CMPZ5228B
C 8D	CMPZ5229B
C 8E	CMPZ5230B
C 8F	CMPZ5231B
C 8G	CMPZ5232B
C 8H	CMPZ5233B
C 8J	CMPZ5234B
C 8K	CMPZ5235B
C 8L	CMPZ5236B
C 8M	CMPZ5237B
C 8N	CMPZ5238B
C 8P	CMPZ5239B
C 8Q	CMPZ5240B
C 8R	CMPZ5241B
C 8S	CMPZ5242B
C 8T	CMPZ5243B
C 8U	CMPZ5244B
C 8V	CMPZ5245B
C 8W	CMPZ5246B
C 8X	CMPZ5247B
C 8Y	CMPZ5248B
C 8Z	CMPZ5249B
C 9F	CMPZ4683
C 9G	CMPZ4684
C 9H	CMPZ4685
C 9J	CMPZ4686
C 9K	CMPZ4687
C 9L	CMPZ4688
C 9M	CMPZ4689
C 9N	CMPZ4690
C 9P	CMPZ4691
C 9Q	CMPZ4692
C 9R	CMPZ4693
C 9S	CMPZ4694
C 9T	CMPZ4695
C 9U	CMPZ4696
C 9V	CMPZ4697
C 9W	CMPZ4698
C 9X	CMPZ4699
C 9Y	CMPZ4700
C 9Z	CMPZ4701
C10	CMR1-10
C29	CMPTA29
C302	CMR3-02
C304	CMR3-04
C306	CMR3-06
C310	CMR3-10
CA2	CMPD2836
CA6	CMPD2838
CH1J	CHT2369A
CH1P	CHT2222A
CH2F	CHT2907A
CH3B	CHT 918
CKB	CMPT8099
CS 20	CMSH1-20
CS 40	CMSH1-40
CS 60	CMSH1-60
CS240	CMSH2-40
CS320	CMSH3-20
CS340	CMSH3-40
CS360	CMSH3-60
CU01	CMR1U-01
CU02	CMR1U-02
CU04	CMR1U-04

Marking Codes (Continued)

Marking Code	Part Number
CU06	CMR1U-06
CU301	CMR3U-01
CU302	CMR3U-02
CU304	CMR3U-04
CU306	CMR3U-06
D 1	BCW31
D 2	BCW32
D 3	BCW33
D 7	BCF32
D 8	BCF33
D49	CMPD5001S
D53	CMPD2004
D76	CMPD6263
D95	CMPSH-3
D96	CMPD6263S
D97	CMPD6263C
D98	CMPD6263A
DA	BCW67A
DA2	CMPD5001
DA5	CMPSH-3S
DB	BCW67B
DB1	CMPSH-3A
DB2	CMPSH-3C
DB6	CMPD2004S
DC	BCW67C
DF	BCW68F
DG	BCW68G
DH	BCW68H
EA	BCW65A
EB	BCW65B
EC	BCW65C
EF	BCW66F
EG	BCW66G
EH	BCW66H
FD	BCV26
FE	BCV46
FF	BCV27
FG	BCV47

Marking Code	Part Number
FG	CMPTA27
H1	BCW69
H2	BCW70
H3	BCW89
H7	BCF70
K1	BCW71
K2	BCW72
K3	BCW81
K7	BCV71
K8	BCV72
K9	BCF81
L20	CMPD1001
L21	CMPD1001S
L22	CMPD1001A
L51	BAS56
T1	BCX17
T2	BCX18
T7	BSR15
T8	BSR16
U1	BCX19
U2	BCX20
U7	BSR13
U8	BSR14
U9	BSR17
U92	BSR17A
W 6	BZX84C3V3
W 7	BZX84C3V6
W 8	BZX84C3V9
W 9	BZX84C4V3
W10	CMPZDA27V
W11	CMPZDA30V
W12	CMPZDA33V
WW7	CMPZDA3V6
WW8	CMPZDA3V9
WW9	CMPZDA4V3
Y 1	BZX84C11
Y 2	BZX84C12
Y 3	BZX84C13

Marking Code	Part Number
Y 4	BZX84C15
Y 5	BZX84C16
Y 6	BZX84C18
Y 7	BZX84C20
Y 8	BZX84C22
Y 9	BZX84C24
Y10	BZX84C27
Y11	BZX84C30
Y12	BZX84C33
YY1	CMPZDA11V
YY2	CMPZDA12V
YY3	CMPZDA13V
YY4	CMPZDA15V
YY5	CMPZDA16V
YY6	CMPZDA18V
YY7	CMPZDA20V
YY8	CMPZDA22A
YY9	CMPZDA24V
Z1	BZX84C4V7
Z2	BZX84C5V1
Z3	BZX84C5V6
Z4	BZX84C6V2
Z5	BZX84C6V8
Z6	BZX84C7V5
Z7	BZX84C8V2
Z8	BZX84C9V1
Z9	BZX84C10
ZZ1	CMPZDA4V7
ZZ2	CMPZDA5V1
ZZ3	CMPZDA5V6
ZZ4	CMPZDA6V2
ZZ5	CMPZDA6V8
ZZ6	CMPZDA7V5
ZZ7	CMPZDA8V2
ZZ8	CMPZDA9V1
ZZ9	CMPZDA10V



Power dissipation of a surface mounted discrete semiconductor is dependent on many factors among which are, substrate material/ thickness, bonding pad surface area/thickness, and proximity of the device to other components. The most critical of these is substrate material. Due to these variables, power dissipation is listed below as a range.

CASE	POWER DISSIPATION RANGE
SOT-23	200mW - 400mW
SOT-143	200mW - 400mW
SOT-89	400mW - 1600mW
SOT-223	1000mW - 2000mW
SOD-80	350mW - 600mW
MELF	900mW - 1200mW
SMB	1000mW - 2000mW
DPAK	12.5W - 20W

The low end of the power dissipation range relates to device dissipation in 'free air @ T_A= 25°C." The upper end of the range relates to optimum dissipation levels which are attainable when the SMD is mounted on an alumina (ceramic) substrate.

Midrange dissipation levels are for traditional glass-epoxy PC boards (FR-4 material).

It is important that the design engineer consider all the factors influencing power dissipation for each application.

Typical Reliability Data, SOT-23 Transistor

TEST	TEST CONDITION	SAMPLE SIZE	UNIT HOURS	NO. FAILURES	FAILURE RATE (1) (%/1000 HRS)
OPERATING LIFE (LOAD LIFE)	T_A=25°C, P=P_D MAX V_{CB}=80% V_{CB} MAX t=1000 hours	1160	$1.16x10^6$	1	0.18
HIGH TEMPERATURE STORAGE LIFE	T_A=150°C t=1000 hours	1160	$1.16x10^6$	0	0.08
HIGH TEMPERATURE REVERSE BIAS LIFE	T_A=125°C V_{CB}=80% V_{CB} MAX t=1000 hours	1160	$1.16x10^6$	2	0.27
HUMIDITY LIFE (MOISTURE RESISTANCE)	T_A=85°C, R.H.=85% MIL-STD 202, Method 103B t=1000 hours, Condition B	1160	$1.16x10^6$	2	0.27
TEMPERATURE CYCLING (THERMAL SHOCK)	T_L=-55°C, T_H=150°C t_L=t_H=30 min $t_{TRANSFER}$=2 min. max @ T_A=25°C 5 cycles	1160	--	1	--
PRESSURE COOKER (MOISTURE RESISTANCE)	T_A=122°C, P=2 atmos. 6 hours per cycle 5 cycles (30 hours total)	1160	--	2	--
SOLDERING HEAT (THERMAL SHOCK)	T_A=260°±5°C, 60Sn/40Pb total immersion $t_{IMMERSION}$=10^{+2}_{0} sec	360	--	2	--

(1) 60% CONFIDENCE LEVEL

Typical Reliability Data (Continued)

SOT-23 Silicon Diode

TEST	TEST CONDITION	SAMPLE SIZE	UNIT HOURS	NO. FAILURES	FAILURE RATE (1) (%/1000 HRS)
OPERATING LIFE (LOAD LIFE)	T_A=25°C, I_O=80% I_O Rated V_R=80% V_R Rated t=1000 hours	60	$6x10^4$	0	1.5
HIGH TEMPERATURE STORAGE LIFE	T_A=150°C t=1000 hours	60	$6x10^4$	1	3.4
HIGH TEMPERATURE REVERSE BIAS LIFE	T_A=125°C V_R=80% V_R Rated t=1000 hours	60	$6x10^4$	1	3.4
HUMIDITY LIFE (MOISTURE RESISTANCE)	T_A=85°C, R.H.=85% MIL-STD 202, Method 103B t=1000 hours, Condition B	60	$6x10^4$	0	1.5
TEMPERATURE CYCLING (THERMAL SHOCK)	T_L=-55°C, T_H=150°C t_L=t_H=30 min tTRANSFER=2 min max @ T_A=25°C 5 cycles	60	--	0	--
PRESSURE COOKER (MOISTURE RESISTANCE)	T_A=122°C, P=2 atmos. 6 hours per cycle 5 cycles (30 hours total)	60	--	0	--
SOLDERING HEAT (THERMAL SHOCK)	T_A=260°±5°C, 60Sn/40Pb total immersion tIMMERSION=10^{+2}_{-0}sec	360	--	2	--

(1) 60% CONFIDENCE LEVEL

SOT-23 Zener Diode

TEST	TEST CONDITION	SAMPLE SIZE	UNIT HOURS	NO. FAILURES	FAILURE RATE (1) (%/1000 HRS)
OPERATING LIFE	T_A=25°C, P=P_D MAX t=1000 hours	60	$6x10^4$	0	1.5
HIGH TEMPERATURE STORAGE LIFE	T_A=150°C t=1000 hours	60	$6x10^4$	0	1.5
HUMIDITY LIFE (MOISTURE RESISTANCE)	T_A=85°C, R.H.=85% MIL-STD 202, Method 103B t=1000 hours, Condition B	60	$6x10^4$	1	3.4
TEMPERATURE CYCLING (THERMAL SHOCK)	T_L=-55°C, T_H=150°C t_L=t_H=30 min tTRANSFER=2 min max @ T_A=25°C 5 cycles	60	--	0	--
PRESSURE COOKER (MOISTURE RESISTANCE)	T_A=122°C, P=2 atmos. 6 hours per cycle 5 cycles (30 hours total)	60	--	0	--
SOLDERING HEAT (THERMAL SHOCK)	T_A=260°±5°C, 60Sn/40Pb total immersion tIMMERSION=10^{+2}_{-0}sec	360	--	2	--

(1) 60% CONFIDENCE LEVEL

Selection Guide

Small Signal Transistors U.S. Specification (Preferred Series)

SOT-23 Case, 350mW

TYPE NO.	BV_{CBO}	BV_{CEO} *BV_{CES}	BV_{EBO}	I_{CBO} @ V_{CB} *I_{CES}		h_{FE}		@ V_{CE}	@ I_C	$V_{CE(SAT)}$ @ I_C		C_{ob}	f_T	NF	t_{OFF}
	(V) MIN	(V) MIN	(V) MIN	(nA) MAX	(V)	MIN	MAX	(V)	(mA)	(V) MAX	(mA)	(pF) MAX	(MHz) MIN	(dB) MAX	(ns) MAX

General Purpose Amplifier/Switches

Devices are listed in order of descending breakdown voltage.

NPN

CMPT8099	80	80	6.0	100	80	100	300	5.0	1.0	0.4	100	6.0	150	-	-
CMPT930	45	45	5.0	10	45	100	300	5.0	0.01	1.0	10	8.0	30	3.0	-
CMPT2222A	75	40	6.0	10	60	100	300	10	150	1.0	500	8.0	300	4.0	285
CMPT3904	60	40	6.0	50*	30	100	300	1.0	10	0.3	50	4.0	300	5.0	250
CMPT4401	60	40	6.0	100*	35	100	300	1.0	150	0.75	500	6.5	200	-	255

PNP

CMPT8599	80	80	5.0	100	80	100	300	5.0	1.0	0.4	100	4.5	150	-	-
CMPT2907A	60	60	5.0	10	50	100	300	10	150	1.6	500	8.0	200	-	100
CMPT3906	40	40	5.0	50*	30	100	300	1.0	10	0.4	50	4.5	250	4.0	300
CMPT4403	40	40	5.0	100*	35	100	300	2.0	150	0.75	500	8.5	200	-	255

Saturated Switches

Devices are listed in order of descending f_T.

NPN

CMPT2369	40	15	4.5	400	20	40	120	1.0	10	0.25	10	4.0	500	-	18
CMPT3646	40	15	5.0	500*	20	15	-	1.0	300	0.5	300	5.0	350	-	28

PNP

CMPT3640	12	12	4.0	10*	6.0	30	120	0.3	10	0.5	50	3.5	300	-	60

Low Noise Amplifiers

Devices are listed in order of ascending NF.

NPN

CMPT5089	30	25	4.5	50	15	400	1,200	5.0	0.1	0.5	10	4.0	50	2.0	-
CMPT2484	60	60	6.0	10	45	250	-	5.0	1.0	0.35	1.0	6.0	-	3.0	-
CMPT5088	35	30	4.5	50	20	300	900	5.0	0.1	0.5	10	4.0	50	3.0	-
CMPT6428	60	50	6.0	10	30	250	650	5.0	0.1	0.6	100	3.0	100	-	-
CMPT6429	55	45	6.0	10	30	500	1,250	5.0	0.1	0.6	100	3.0	100	-	-

PNP

CMPT5087	50	50	3.0	50	35	250	800	5.0	0.1	0.3	10	4.0	40	2.0	-
CMPT5086	50	50	3.0	50	35	150	500	5.0	0.1	0.3	10	4.0	40	3.0	-

High Current

Devices are listed in order of descending breakdown voltage.

NPN

CMPT3019	120	80	7.0	10	90	100	300	10	150	0.5	500	12	100	4.0	-
CMPTA06	80	80	4.0	100	80	50	-	1.0	100	0.25	100	-	100	-	-

PNP

CMPT4033	80	80	5.0	50	60	100	300	5.0	100	0.5	500	20	100	-	-
CMPTA56	80	80	4.0	100	80	50	-	1.0	100	0.25	100	-	50	-	-

Small Signal Transistors U.S. Specification (Preferred Series)
SOT-23 Case, 350mW (Continued)

TYPE NO.	BV_{CBO} (V) MIN	BV_{CEO} *BV_{CES} (V) MIN	BV_{EBO} (V) MIN	I_{CBO} @ V_{CB} *I_{CES} (nA) MAX	(V)	h_{FE} MIN	h_{FE} MAX	@ V_{CE} (V)	@ I_C (mA)	V_{CE}(SAT) @ I_C (V) MAX	(mA)	C_{ob} (pF) MAX	f_T (MHz) MIN	NF (dB) MAX	t_{OFF} (ns) MAX
High Voltage Devices are listed in order of descending breakdown voltage.															
NPN															
CMPTA44	450	400	6.0	100	400	30	200	10	10	0.75	50	7.0	20	-	-
CMPT6517	350	350	5.0	50	250	30	200	10	30	1.0	50	6.0	40	-	-
CMPTA42	300	300	6.0	100	200	40	-	10	30	0.5	20	3.0	50	-	-
CMPT5551	180	160	6.0	50	120	80	250	5.0	10	0.2	50	6.0	100	8.0	-
PNP															
CMPT6520	350	350	5.0	50	250	30	200	10	30	1.0	50	6.0	40	-	-
CMPTA92	300	300	5.0	250	200	25	-	10	30	0.5	20	6.0	50	-	-
CMPT5401	160	150	5.0	50	120	60	240	5.0	10	0.5	50	6.0	100	8.0	-
RF Oscillator Devices are listed in order of descending f_T.															
NPN															
CMPT5179	20	12	2.5	20	15	25	250	1.0	3.0	0.4	10	1.0	900	4.5	-
CMPTH10	30	25	3.0	100	25	60	-	10	4.0	0.5	4.0	0.7	650	-	-
CMPT918	30	15	3.0	10	15	20	-	1.0	3.0	0.4	10	1.7	600	6.0	-
Darlington Devices are listed in order of descending h_{FE}.															
NPN															
CMPT6427	40	40	12	50	30	20,000	200,000	5.0	100	1.5	500	7.0	130	10	-
CMPTA14	30	30*	10	100	30	20,000	-	5.0	100	1.5	100	-	125	-	-
CMPTA13	30	30*	10	100	30	10,000	-	5.0	100	1.5	100	-	125	-	-
CMPTA27	60	60*	10	100	50	10,000	-	5.0	100	1.5	100	-	125	-	-
NEW CMPTA29	100	100	12	100	80	10,000	-	5.0	100	1.5	100	8.0	125	-	-
PNP															
CMPTA64	30	30*	10	100	30	20,000	-	5.0	100	1.5	100	-	125	-	-
CMPTA63	30	30*	10	100	30	10,000	-	5.0	100	1.5	100	-	125	-	-

Shaded areas indicate Darlington.

Small Signal MOSFET
SOT-23 Case

TYPE NO.	$r_{DS(ON)}$ @ I_D (Ω) MAX	(A)	$V_{GS(th)}$ (V) MIN	MAX	BV_{DSS} (V) MIN	C_{iss} (pF) MAX	C_{rss} (pF) MAX	t_{on} (ns) MAX	t_{OFF} (ns) MAX
2N7002	7.5	0.5	1.0	2.5	60	50	5.0	20	20

Junction FETs

SOT-23 Case

TYPE NO.	BV_{GSS} (V) MIN	I_{DSS} (mA) MIN	I_{DSS} (mA) MAX	$V_{GS(OFF)}$ (V) MIN	$V_{GS(OFF)}$ (V) MAX	$r_{DS(ON)}$ (Ω) MAX	NF **TYP (dB) MAX	t_{OFF} (nS) MAX
Amplifiers N Channel								
CMPF4416A	35	5.0	15	2.5	6.0	-	2.0	-
CMPF5484*	25	1.0	5.0	0.3	3.0	-	3.0	-
CMPF5485	25	4.0	10	0.5	4.0	-	2.0	-
CMPF5486*	25	8.0	20	2.0	6.0	-	2.0	-
CMPFJ310*	25	24	60	2.0	6.5	-	1.5**	-
P Channel								
CMPF5460*	40	1.0	5.0	0.75	6.0	-	2.5	-
CMPF5461*	40	2.0	9.0	1.0	7.5	-	2.5	-
CMPF5462*	40	4.0	16	1.8	9.0	-	2.5	-
Switches / Choppers N Channel								
CMPF4391	40	50	150	4.0	10	30	-	20
CMPF4392	40	25	75	2.0	5.0	60	-	35
CMPF4393	40	5.0	30	0.5	3.0	100	-	50
P Channel								
CMPFJ174*	30	2.0	100	5.0	10	85	-	-
CMPFJ175*	30	7.0	60	3.0	6.0	125	-	-
CMPFJ176*	30	2.0	25	1.0	4.0	250	-	-

*Available on special order, consult factory.

Transistors SOT-23 Case Proelectron Series 350mW

TYPE NO.	DESCRIPTION	BV_{CBO} (VOLTS) MIN	BV_{CEO} (VOLTS) MIN	BV_{EBO} (VOLTS) MIN	I_{CBO} (nA) MAX	@ V_{CB} (VOLTS)	h_{FE} MIN	h_{FE} MAX	@ V_{CE} (VOLTS)	@ I_C (mA)	V_{CE} (SAT) (VOLTS) MAX	@ I_C (mA)	C_{ob} (pF) MAX	f_T (MHz) TYP	NF (dB) MAX	t_{OFF} (ns) MAX	MARKING CODE	SIMILAR LEADED DEVICE
BC807	PNP HIGH CURRENT	50*	45	5.0	100	20	100	600	1.0	100	0.70	500	8.0	100	—	—		BC327
BC807.16	PNP HIGH CURRENT	50*	45	5.0	100	20	100	250	1.0	100	0.70	500	8.0	100	—	—	5A	BC327.16
BC807.25	PNP HIGH CURRENT	50*	45	5.0	100	20	160	400	1.0	100	0.70	500	8.0	100	—	—	5B	BC327.25
BC807.40	PNP HIGH CURRENT	50*	45	5.0	100	20	250	600	1.0	100	0.70	500	8.0	100	—	—	5C	BC327.40
BC808	PNP HIGH CURRENT	30*	25	5.0	100	20	100	600	1.0	100	0.70	500	8.0	100	—	—		BC328
BC808.16	PNP HIGH CURRENT	30*	25	5.0	100	20	100	250	1.0	100	0.70	500	8.0	100	—	—	5E	BC328.16
BC808.25	PNP HIGH CURRENT	30*	25	5.0	100	20	160	400	1.0	100	0.70	500	8.0	100	—	—	5F	BC328.25
BC808.40	PNP HIGH CURRENT	30*	25	5.0	100	20	250	600	1.0	100	0.70	500	8.0	100	—	—	5G	BC328.40
BC817	NPN HIGH CURRENT	50*	45	5.0	100	20	100	600	1.0	100	0.70	500	5.0	200	—	—		BC337
BC817.16	NPN HIGH CURRENT	50*	45	5.0	100	20	100	250	1.0	100	0.70	500	5.0	200	—	—	6A	BC337.16
BC817.25	NPN HIGH CURRENT	50*	45	5.0	100	20	160	400	1.0	100	0.70	500	5.0	200	—	—	6B	BC337.25
BC817.40	NPN HIGH CURRENT	50*	45	5.0	100	20	250	600	1.0	100	0.70	500	5.0	200	—	—	6C	BC337.40
BC818	NPN HIGH CURRENT	30*	25	5.0	100	20	100	600	1.0	100	0.70	500	5.0	200	—	—		BC338
BC818.16	NPN HIGH CURRENT	30*	25	5.0	100	20	100	250	1.0	100	0.70	500	5.0	200	—	—	6E	BC338.16
BC818.25	NPN HIGH CURRENT	30*	25	5.0	100	20	160	400	1.0	100	0.70	500	5.0	200	—	—	6F	BC338.25
BC818.40	NPN HIGH CURRENT	30*	25	5.0	100	20	250	600	1.0	100	0.70	500	5.0	200	—	—	6G	BC338.40
BC846	NPN LOW NOISE	80	65	6.0	15	30	110	450	5.0	2.0	0.60	100	2.5	300	10	—		BC546
BC846A	NPN LOW NOISE	80	65	6.0	15	30	110	220	5.0	2.0	0.60	100	2.5	300	10	—	1A	BC546A
BC846B	NPN LOW NOISE	80	65	6.0	15	30	200	450	5.0	2.0	0.60	100	2.5	300	10	—	1B	BC546B
BC847	NPN LOW NOISE	50	45	6.0	15	30	110	800	5.0	2.0	0.60	100	2.5	300	10	—		BC547
BC847A	NPN LOW NOISE	50	45	6.0	15	30	110	220	5.0	2.0	0.60	100	2.5	300	10	—	1E	BC547A
BC847B	NPN LOW NOISE	50	45	6.0	15	30	200	450	5.0	2.0	0.60	100	2.5	300	10	—	1F	BC547B
BC847C	NPN LOW NOISE	50	45	6.0	15	30	420	800	5.0	2.0	0.60	100	2.5	300	10	—	1G	BC547C
BC848	NPN LOW NOISE	30	30	5.0	15	30	110	800	5.0	2.0	0.60	100	2.5	300	10	—		BC548
BC848A	NPN LOW NOISE	30	30	5.0	15	30	110	220	5.0	2.0	0.60	100	2.5	300	10	—	1J	BC548A
BC848B	NPN LOW NOISE	30	30	5.0	15	30	200	450	5.0	2.0	0.60	100	2.5	300	10	—	1K	BC548B
BC848C	NPN LOW NOISE	30	30	5.0	15	30	420	800	5.0	2.0	0.60	100	2.5	300	10	—	1L	BC548C
BC849	NPN LOW NOISE	30	30	5.0	15	30	200	800	5.0	2.0	0.60	100	2.5	300	4.0	—		BC549
BC849B	NPN LOW NOISE	30	30	5.0	15	30	200	450	5.0	2.0	0.60	100	2.5	300	4.0	—	2B	BC549B
BC849C	NPN LOW NOISE	30	30	5.0	15	30	420	800	5.0	2.0	0.60	100	2.5	300	4.0	—	2C	BC549C
BC850	NPN LOW NOISE	50	50	5.0	15	30	200	800	5.0	2.0	0.60	100	2.5	300	3.0	—		BC550
BC850B	NPN LOW NOISE	50	50	5.0	15	30	200	450	5.0	2.0	0.60	100	2.5	300	3.0	—	2F	BC550B
BC850C	NPN LOW NOISE	50	50	5.0	15	30	420	800	5.0	2.0	0.60	100	2.5	300	3.0	—	2G	BC550C
BC856	PNP LOW NOISE	80	65	5.0	15	30	75	800	5.0	2.0	0.65	100	4.5	150	10	—		BC556
BC856A	PNP LOW NOISE	80	65	5.0	15	30	125	250	5.0	2.0	0.65	100	4.5	150	10	—	3A	BC556A
BC856B	PNP LOW NOISE	80	65	5.0	15	30	220	475	5.0	2.0	0.65	100	4.5	150	10	—	3B	BC556B
BC857	PNP LOW NOISE	50	45	5.0	15	30	75	800	5.0	2.0	0.65	100	4.5	150	10	—		BC557
BC857A	PNP LOW NOISE	50	45	5.0	15	30	125	250	5.0	2.0	0.65	100	4.5	150	10	—	3E	BC557A
BC857B	PNP LOW NOISE	50	45	5.0	15	30	220	475	5.0	2.0	0.65	100	4.5	150	10	—	3F	BC557B
BC857C	PNP LOW NOISE	50	45	5.0	15	30	420	800	5.0	2.0	0.65	100	4.5	150	10	—	3G	BC557C
BC858	PNP LOW NOISE	30	30	5.0	15	30	75	800	5.0	2.0	0.65	100	4,5	150	10	—		BC558
BC858A	PNP LOW NOISE	30	30	5.0	15	30	125	250	5.0	2.0	0.65	100	4.5	150	10	—	3J	BC558A

*BV_{CES}

SMD Transistors SOT-23 Case 350mW

Proelectron Series—Cont'd

TYPE NO.	DESCRIPTION	BV_{CBO} (VOLTS) MIN	BV_{CEO} (VOLTS) MIN	BV_{EBO} (VOLTS) MIN	I_{CBO} (nA) MAX	@ V_{CB} (VOLTS)	h_{FE} MIN	h_{FE} MAX	@ V_{CE} (VOLTS)	@ I_C (mA)	V_{CE} (SAT) (VOLTS) MAX	@ I_C (mA)	C_{ob} (pF) MAX	f_T (MHz) TYP	NF (dB) MAX	t_{OFF} (ns) MAX	MARKING CODE	SIMILAR LEADED DEVICE
BC858B	PNP LOW NOISE	30	30	5.0	15	30	220	475	5.0	2.0	0.65	100	4.5	150	10	—	3K	BC558B
BC858C	PNP LOW NOISE	30	30	5.0	15	30	420	800	5.0	2.0	0.65	100	4.5	150	10	—	3L	BC558C
BC859	PNP LOW NOISE	30	30	5.0	15	30	125	800	5.0	2.0	0.65	100	4.5	150	4.0	—		BC559
BC859A	PNP LOW NOISE	30	30	5.0	15	30	125	250	5.0	2.0	0.65	100	4.5	150	4.0	—	4A	BC559A
BC859B	PNP LOW NOISE	30	30	5.0	15	30	220	475	5.0	2.0	0.65	100	4.5	150	4.0	—	4B	BC559B
BC859C	PNP LOW NOISE	30	30	5.0	15	30	420	800	5.0	2.0	0.65	100	4.5	150	4.0	—	4C	BC559C
BC860	PNP LOW NOISE	50	45	5.0	15	30	125	800	5.0	2.0	0.65	100	4.5	150	3.0	—		BC560
BC860A	PNP LOW NOISE	50	45	5.0	15	30	125	250	5.0	2.0	0.65	100	4.5	150	3.0	—	4E	BC560A
BC860B	PNP LOW NOISE	50	45	5.0	15	30	230	475	5.0	2.0	0.65	100	4.5	150	3.0	—	4F	BC560B
BC860C	PNP LOW NOISE	50	45	5.0	15	30	420	800	5.0	2.0	0.65	100	4.5	150	3.0	—	4G	BC560C
BCF29	PNP LOW NOISE	32	32	5.0	100	32	120	260	5.0	2.0	0.30	10	4.5	150	4.0	—	C7	—
BCF30	PNP LOW NOISE	32	32	5.0	100	32	215	500	5.0	2.0	0.30	10	4.5	150	4.0	—	C8	—
BCF32	NPN LOW NOISE	32	32	5.0	100	32	200	450	5.0	2.0	0.25	10	2.5	300	4.0	—	D7	—
BCF33	NPN LOW NOISE	32	320	5.0	100	32	420	800	5.0	2.05	0.25	105	2.5	300	4.0	—	D8	—
BCF70	PNP LOW NOISE	50	45	5.0	100	20	215	500	5.0	2.0	0.30	10	4.5	150	4.0	—	H7	—
BCF81	NPN LOW NOISE	50	45	5.0	100	20	420	800	5.0	2.0	0.25	10	2.5	300	4.0	—	K9	—
BCV26	PNP DARLINGTON	40	30	10	100	30	20,000	—	5.0	100	1.0	100	3.5	220	—	—	FD	MPSA64
BCV27	NPN DARLINGTON	40	30	10	100	30	20,000	—	5.0	100	1.0	100	3.5	220	—	—	FF	MPSA14
BCV46	PNP DARLINGTON	80	60	10	100	30	10,000	—	5.0	100	1.0	100	3.5	220	—	—	FE	MPSA77
BCV47	NPN DARLINGTON	80	60	10	100	30	10,000	—	5.0	100	1.0	100	3.5	220	—	—	FG	MPSA27
BCV71	NPN LOW NOISE	80	60	5.0	100	20	110	220	5.0	2.0	0.25	10	2.5	300	10	—	K7	—
BCV72	NPN LOW NOISE	80	60	5.0	100	20	200	450	5.0	2.0	0.25	10	2.5	300	10	—	K8	—
BCW29	PNP LOW NOISE	32	32	5.0	100	32	120	260	5.0	2.0	0.30	10	4.5	150	10	—	C1	—
BCW30	PNP LOW NOISE	32	32	5.0	100	32	215	500	5.0	2.0	0.30	10	4.5	150	10	—	C2	—
BCW31	NPN LOW NOISE	32	32	5.0	100	32	110	220	5.0	2.0	0.25	10	2.5	300	10	—	D1	—
BCW32	NPN LOW NOISE	32	32	5.0	100	32	200	450	5.0	2.0	0.25	10	2.5	300	10	—	D2	—
BCW33	NPN LOW NOISE	32	32	5.0	100	32	420	800	5.0	2.0	0.25	10	2.5	300	10	—	D3	—
BCW60	NPN LOW NOISE	32*	32	5.0	20	32	130	630	5.0	2.0	0.55	50	2.5	250	6.0	—		—
BCW60A	NPN LOW NOISE	32*	32	5.0	20	32	120	220	5.0	2.0	0.55	50	2.5	250	6.0	—	AA	—
BCW60B	NPN LOW NOISE	32*	32	5.0	20*	32	180	310	5.0	2.0	0.55	50	2.5	250	6.0	—	AB	—
BCW60C	NPN LOW NOISE	32*	32	5.0	20*	32	250	460	5.0	2.0	0.55	50	2.5	250	6.0	—	AC	—
BCW60D	NPN LOW NOISE	32*	32	5.0	20*	32	380	630	5.0	2.0	0.55	50	2.5	250	6.0	—	AD	—
BCW61	PNP LOW NOISE	32*	32	5.0	20*	32	120	630	5.0	2.0	0.55	50	4.5	180	6.0	—		—
BCW61A	PNP LOW NOISE	32*	32	5.0	20*	32	120	220	5.0	2.0	0.55	50	4.5	180	6.0	—	BA	—
BCW61B	PNP LOW NOISE	32*	32	5.0	20*	32	180	310	5.0	2.0	0.55	50	4.5	180	6.0	—	BB	—
BCW61C	PNP LOW NOISE	32*	32	5.0	20*	32	250	460	5.0	2.0	0.55	50	4.5	180	6.0	—	BC	—
BCW61D	PNP LOW NOISE	32*	32	5.0	20*	32	380	630	5.0	2.0	0.55	50	4.5	180	6.0	—	BD	—
BCW65	NPN HIGH CURRENT	60	32	5.0	20	32	100	630	1.0	100	0.70	500	6.0	170	—	—		—
BCW65A	NPN HIGH CURRENT	60	32	5.0	20	32	100	250	1.0	100	0.70	500	6.0	170	—	—	EA	—
BCW65B	NPN HIGH CURRENT	60	32	5.0	20	32	160	400	1.0	100	0.70	500	6.0	170	—	—	EB	—
BCW65C	NPN HIGH CURRENT	60	32	5.0	20	32	250	630	1.0	100	0.70	500	6.0	170	—	—	EC	—
BCW66	NPN HIGH CURRENT	75	45	5.0	20	45	100	630	1.0	100	0.70	500	6.0	170	—	—		—
BCW66F	NPN HIGH CURRENT	75	45	5.0	20	45	100	250	1.0	100	0.70	500	6.0	170	—	—	EF	—
BCW66G	NPN HIGH CURRENT	75	45	5.0	20	45	160	400	1.0	100	0.70	500	6.0	170	—	—	EG	—
BCW66H	NPN HIGH CURRENT	75	45	5.0	20	45	250	630	1.0	100	0.70	500	6.0	170	—	—	EH	—
BCW67	PNP HIGH CURRENT	45	32	5.0	20	32	100	630	1.0	100	0.70	500	6.0	200	—	—		—
BCW67A	PNP HIGH CURRENT	45	32	5.0	20	32	100	250	1.0	100	0.70	500	6.0	200	—	—	DA	—
BCW67B	PNP HIGH CURRENT	45	32	5.0	20	32	160	400	1.0	100	0.70	500	6.0	200	—	—	DB	—
BCW67C	PNP HIGH CURRENT	45	32	5.0	20	32	250	630	1.0	100	0.70	500	6.0	200	—	—	DC	—
BCW68	PNP HIGH CURRENT	60	45	5.0	20	45	100	630	1.0	100	0.70	500	6.0	200	—	—		—
BCW68F	PNP HIGH CURRENT	60	45	5.0	20	45	100	250	1.0	100	0.70	500	6.0	200	—	—	DF	—
BCW68G	PNP HIGH CURRENT	60	45	5.0	20	45	160	400	1.0	100	0.70	500	6.0	200	—	—	DG	—
BCW68H	PNP HIGH CURRENT	60	45	5.0	20	45	250	630	1.0	100	0.70	500	6.0	200	—	—	DH	—
BCW69	PNP LOW NOISE	50	45	5.0	100	20	120	260	5.0	2.0	0.30	10	4.5	150	10	—	H1	—
BCW70	PNP LOW NOISE	50	45	5.0	100	20	215	500	5.0	2.0	0.30	10	4.5	150	10	—	H2	—
BCW71	NPN LOW NOISE	50	45	5.0	100	20	110	220	5.0	2.0	0.25	10	2.5	300	10	—	K1	—
BCW72	NPN LOW NOISE	50	45	5.0	100	20	200	450	5.0	2.0	0.25	10	2.5	300	10	—	K2	—
BCW81	NPN LOW NOISE	50	45	5.0	100	20	420	800	5.0	2.0	0.25	10	2.5	300	10	—	K3	—
BCW89	PNP LOW NOISE	80	60	5.0	100	20	120	260	5.0	2.0	0.30	10	4.5	150	10	—	H3	—
BCX17	PNP HIGH CURRENT	50*	45	5.0	100	20	100	600	1.0	100	0.62	500	8.0	100	—	—	T1	—
BCX18	PNP HIGH CURRENT	50*	25	5.0	100	20	100	600	1.0	100	0.62	500	8.0	100	—	—	T2	—
BCX19	NPN HIGH CURRENT	50*	45	5.0	100	20	100	600	1.0	100	0.62	500	5.0	200	—	—	U1	—
BCX20	NPN HIGH CURRENT	30*	25	5.0	100	20	100	600	1.0	100	0.62	500	5.0	200	—	—	U2	—
BCX70	NPN LOW NOISE	45	45	5.0	20*	45	120	630	5.0	2.0	0.55	50	2.5	250	6.0	—		—
BCX70G	NPN LOW NOISE	45*	45	5.0	20*	45	120	220	5.0	2.0	0.55	50	2.5	250	6.0	—	AG	—
BCX70H	NPN LOW NOISE	45*	45	5.0	20*	45	180	310	5.0	2.0	0.55	50	2.5	250	6.0	—	AH	—
BCX70J	NPN LOW NOISE	45*	45	5.0	20*	45	250	460	5.0	2.0	0.55	50	2.5	250	6.0	—	AJ	—
BCX70K	NPN LOW NOISE	45*	45	5.0	20*	45	380	630	5.0	2.0	0.55	50	2.5	250	6.0	—	AK	—
BCX71	PNP LOW NOISE	45*	45	5.0	20*	45	120	630	5.0	2.0	0.55	50	4.5	180	6.0	—		—
BCX71G	PNP LOW NOISE	45*	45	5.0	20*	45	120	220	5.0	2.0	0.55	50	4.5	180	6.0	—	BG	—
BCX71H	PNP LOW NOISE	45*	45	5.0	20*	45	180	310	5.0	2.0	0.55	50	4.5	180	6.0	—	BH	—
BCX71J	PNP LOW NOISE	45*	45	5.0	20*	45	250	460	5.0	2.0	0.55	50	4.5	180	6.0	—	BJ	—
BCX71K	PNP LOW NOISE	45*	45	5.0	20*	45	380	630	5.0	2.0	0.55	50	4.5	180	6.0	—	BK	—
BSR13	NPN AMPL/SWITCH	60	40	5.0	30	50	100	300	10	150	1.60	500	8.0	250MIN	—	285	U7	2N2222A
BSR14	NPN AMPL/SWITCH	75	40	6.0	10	60	100	300	10	150	1.00	500	8.0	300MIN	—	285	U8	2N2222A
BSR15	PNP AMPL/SWITCH	60	40	5.0	20	50	100	300	10	150	1.60	500	8.0	200MIN	—	100	T7	2N2907A
BSR16	PNP AMPL/SWITCH	60	60	5.0	10	50	100	300	10	150	1.60	500	8.0	200MIN	—	100	T8	2N2907A
BSR17	NPN AMPL/SWITCH	60	40	6.0	50	30	50	150	1.0	10	0.30	50	4.0	250MIN	—	225	U9	—
BSR17A	NPN AMPL/SWITCH	60	40	6.0	50	30	100	300	1.0	10	0.30	50	4.0	300MIN	—	250	U92	—
BSV52	NPN SAT SWITCH	20	12	5.0	100	10	40	120	1.0	10	0.40	50	4.0	500	—	18	B2	2N2369A

*BV_{CES} *I_{CES}

SELECT GUIDE

NEW

2/3 The Size of SOT-23 Case!

SUPER™ mini

Small Signal Transistors

SOT-323 Case, 250mW

TYPE NO.	DESCRIPTION	BV_{CBO} (V) MIN	BV_{CEO} (V) MIN	BV_{EBO} (V) MIN	I_{CBO} @ V_{CB} *I_{CEV} (nA) MAX	(V)	h_{FE} MIN	h_{FE} MAX	@ V_{CE} (V)	@ I_C (mA)	$V_{CE(SAT)}$ @ I_C (V) MAX	(mA)	C_{ob} (pF) MAX	f_T (MHz) MIN	NF (dB) MAX
CMST2222A	NPN AMPL/SWITCH	75	40	6.0	10	60	100	300	10	150	1.0	500	8.0	300	4.0
CMST2907A	PNP AMPL/SWITCH	60	60	5.0	10	50	100	300	10	150	1.6	500	8.0	200	-
CMST3904	NPN AMPL/SWITCH	60	40	6.0	50*	30	100	300	1.0	10	0.3	50	4.0	300	5.0
CMST3906	PNP AMPL/SWITCH	40	40	5.0	50*	30	100	300	1.0	10	0.4	50	4.5	250	4.0

NEW

Top View

Bottom View

Transistors

CERSOT-23 Case

- Hermetically Sealed, Ceramic Leadless Chip Carrier.
- Ultra Miniature Surface Mount Case.
- Mounts Directly on Standard SOT-23 Mounting Pads.
- Includes PrecapVisual - Similar to JANTXV.

TYPE NO.	DESCRIPTION	BV_{CEO} (V) MIN	I_{CBO} @ V_{CBO} *I_{CES} (nA) MAX	(V)	h_{FE} MIN	h_{FE} MAX	@ V_{CE} (mA)	@ I_C (V)	$V_{CE(SAT)}$ @ I_C (V) MAX	(mA)	C_{ob} (pF) MAX	f_T (MHz) MIN	NF (db) MAX	t_{OFF} (ns) MAX
CHT918	NPN RF OSC	15	10	15	20	---	3.0	1.0	0.4	10	1.7	600	6.0	---
CHT2222A	NPN AMPL/SWITCH	40	10	60	35	---	0.1	10	0.3	150	8.0	300	---	285
					50	---	1.0	10	1.0	500				
					75	---	10	10						
					100	300	150	10						
					50	---	150	1.0						
					40	---	500	10						
CHT2369A	NPN SAT SWITCH	15	400*	20	40	120	10	1.0	0.2	10	4.0	500	---	18
					30	---	30	0.4	0.25	30				
					20	---	100	1.0	0.5	100				
CHT2907A	PNP AMPL/SWITCH	60	10	50	75	---	0.1	10	0.4	150	8.0	200	---	100
					100	---	1.0	10	1.6	500				
					100	---	10	10						
					100	300	150	10						
					50	---	500	10						

Small Signal Transistors

SOT-89 Case, 1.2W

TYPE NO.	BV_{CBO} (V) MIN	BV_{CEO} *BV_{CES} (V) MIN	BV_{EBO} (V) MIN	I_{CBO} *I_{CES} @ V_{CB} (nA) (V) MAX	h_{FE} @ V_{CE} @ I_C MIN	MAX	(V_{CE}) (mA)	V_{CE}(SAT) @ I_C (V) (mA) MAX	C_{ob} (pF) MAX	f_T (MHz) MIN	NF (dB) MAX	t_{OFF} (ns) MAX
General Purpose Amplifier/Switches Devices are listed in order of descending breakdown voltage.												
NPN												
CXT2222A	75	40	6.0	10 @ 60	100	300	10	150	1.0	500	8.0	300	4.0	285
CXT3904	60	40	6.0	50* @ 30	100	300	1.0	10	0.3	50	4.0	300	5.0	250
PNP												
CXT2907A	60	60	5.0	10 @ 50	100	300	10	150	1.6	500	8.0	200	-	100
CXT3906	60	40	6.0	50* @ 30	100	300	1.0	10	0.3	50	4.0	300	5.0	250
High Current Devices are listed in order of descending breakdown voltage.												
NPN												
CXT3019	140	80	7.0	10 @ 90	100	300	10	150	0.5	500	12	100	4.0	-
CBCX68	25	20	5.0	100 @ 25	85	375	1.0	500	0.5	1,000	-	65	-	-
PNP												
CXT4033	80	80	5.0	50 @ 60	100	300	5.0	100	0.5	500	20	100	-	-
CBCX69	25	20	5.0	100 @ 25	85	375	1.0	500	0.5	1,000	-	65	-	-
High Voltage Devices are listed in order of descending breakdown voltage.												
NPN												
CXTA42	300	300	6.0	100 @ 200	40	-	10	30	0.5	20	4.0	50	-	-
CXT5551	180	160	6.0	50 @ 120	80	250	5.0	10	0.2	50	6.0	100	8.0	-
PNP												
CXTA92	300	300	5.0	250 @ 200	25	-	10	30	0.5	20	6.0	50	-	-
CXT5401	160	150	5.0	50 @ 120	60	240	5.0	10	0.5	50	6.0	100	8.0	-
Darlington Devices are listed in order of descending h_{FE}.												
NPN												
CXTA14	30	30*	10	100 @ 30	20,000	-	5.0	100	1.5	100	-	125	-	-
PNP												
CXTA64	30	30*	10	100 @ 30	20,000	-	5.0	100	1.5	100	-	100	-	-

Shaded areas indicate Darlington.

SELECT GUIDE

Small Signal Transistors

SOT-223 Case, 2.0W

TYPE NO.	BV_{CBO} (V) MIN	BV_{CEO} *BV_{CES} (V) MIN	BV_{EBO} (V) MIN	I_{CBO} @ V_{CB} *I_{CES} (nA) MAX	(V)	h_{FE} MIN	MAX	@ V_{CE} (V)	@ I_C (mA)	$V_{CE(SAT)}$ @ I_C (V) MAX	(mA)	C_{ob} (pF) MAX	f_T (MHz) MIN	NF (dB) MAX	t_{OFF} (ns) MAX

General Purpose Amplifier/Switches

Devices are listed in order of descending breakdown voltage.

NPN

CZT2222A	75	40	6.0	10	60	100	300	10	150	1.0	500	8.0	300	4.0	285
CZT3904	60	40	6.0	50*	30	100	300	1.0	10	0.3	50	4.0	300	5.0	250

PNP

CZT2907A	60	60	5.0	10	50	100	300	10	150	1.6	500	8.0	200	-	100
CZT3906	60	40	6.0	50*	30	100	300	1.0	10	0.3	50	4.0	300	5.0	250

High Current

Devices are listed in order of descending breakdown voltage.

NPN

CZT3019	120	80	7.0	10	90	100	300	10	150	0.5	500	12	100	4.0	-
CBCP68	25	20	5.0	100	25	85	375	1.0	500	0.5	1,000	-	65	-	-

PNP

CZT4033	80	80	5.0	50	60	100	300	5.0	100	0.5	500	20	100	-	-
CBCP69	25	20	5.0	100	25	85	375	1.0	500	0.5	1,000	-	65	-	-

High Voltage

Devices are listed in order of descending breakdown voltage.

NPN

CZTA44	450	400	6.0	100	400	50	200	10	10	0.75	50	7.0	20	-	-
CZTA42	300	300	6.0	100	200	40	-	10	30	0.5	20	4.0	50	-	-
CZT5551	180	160	6.0	50	120	80	250	5.0	10	0.2	50	6.0	100	8.0	-

PNP

CZTA92	300	300	5.0	250	200	25	-	10	30	0.5	200	6.0	50	-	-
CZT5401	160	150	5.0	50	120	60	240	5.0	10	0.5	50	6.0	100	8.0	-

Darlington

Devices are listed in order of descending h_{FE}.

NPN

CZTA14	30	30*	10	100	30	20,000	-	5.0	100	1.5	100	-	125	-	-
CZT2000	200	200*	10	500	180	3,000	-	5.0	160	1.1	80	-	-	-	-

PNP

CZTA64	30	30*	10	100	30	20,000	-	5.0	100	1.5	100	-	125	-	-

Shaded areas indicate Darlington.

Note: SOT-223 also mounts directly on DPAK solder pads.

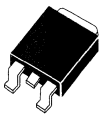
Power Transistors

SOT-223 Case

POWER 223™

TYPE NO. NPN	TYPE NO. PNP	DESCRIPTION	I_C (A) MAX	P_D (W)	BV_{CBO} (V) MIN	BV_{CEO} (V) MIN	h_{FE} MIN	h_{FE} MAX	@ I_C (A)	$V_{CE}(SAT)$ @ I_C (V) MAX	@ I_C (A)	f_T (MHz) MIN
CZT31C	CZT32C	AMPL/SWITCH	3.0	2.0	100	100	10	100	3.0	1.2	3.0	3.0
CZT122	CZT127	DARLINGTON	5.0	2.0	100	100	1,000	---	3.0	4.0	5.0	4.0
CZT3055	CZT2955	AMPL/SWITCH	6.0	2.0	100	70	20	70	4.0	1.1	4.0	2.5
CZT5338		HIGH CURRENT SWITCH	5.0	2.0	100	100	30	120	2.0	1.2	5.0	30

Shaded areas indicate Darlington.



Power Transistors

DPAK Case

DPAK POWER!™

TYPE NO. NPN	TYPE NO. PNP	I_C (A)	P_D (W)	BV_{CBO} *BV_{CEV} (V)	BV_{CEO} (V)	h_{FE} MIN	h_{FE} MAX	@ I_C (A)	$V_{CE}(SAT)$ @ I_C (V) MAX	@ I_C (A)	f_T (MHz) MIN
General Purpose Amplifier/Switches Devices are listed in order of descending breakdown voltage.											
CJD31C	CJD32C	3.0	15	100	100	10	50	3.0	1.2	3.0	3.0
CJD41C	CJD42C	6.0	20	100	100	15	75	3.0	1.5	6.0	3.0
CJD3055	CJD2955	10	20	70	60	20	100	4.0	1.1	4.0	2.0
CJD200	CJD210	5.0	12.5	40	25	45	180	2.0	1.8	5.0	65
High Voltage Devices are listed in order of descending breakdown voltage.											
CJD13003		1.5	15	700*	400	5.0	25	1.0	3.0	1.5	4.0
CJD50		1.0	15	500	400	30	150	0.3	1.0	1.0	10
CJD340	CJD350	0.5	15	300	300	30	240	0.05	---	---	---
CJD47		1.0	15	350	250	30	150	0.3	1.0	1.0	10
Darlington											
CJD112	CJD117	2.0	20	100	100	1,000	12,000	2.0	2.0	2.0	25
CJD122	CJD127	8.0	20	100	100	1,000	12,000	4.0	4.0	8.0	4.0

Shaded areas indicate Darlington.

Switching Diodes

TYPE NO.	DESCRIPTION	V_{RRM} (V) MAX	I_O (mA) MAX	V_F @ I_F (V) MAX	(mA)	t_{rr} (ns) MAX
	SOD-80 Case					
CLL914	SWITCHING DIODE	100	200	1.0	10	4.0
CLL2003	HIGH VOLTAGE SWITCHING DIODE	250	250	1.0	100	50
CLL4150	HIGH CURRENT,SWITCHING DIODE	50	300	1.0	200	4.0
CLL4448	SWITCHING DIODE	100	200	1.0	100	4.0
	SOT-23 Case Devices are listed in order of ascending breakdown voltage.					
CMPD4150	SINGLE SWITCHING DIODE	50	300	1.0	200	4.0
CMPD2836	DUAL SWITCHING DIODE, COMMON ANODE	75	200	1.0	50	6.0
CMPD2838	DUAL SWITCHING DIODE, COMMON CATHODE	75	200	1.0	50	6.0
CMPD1001	SINGLE HIGH CURRENT DIODE	90	250	1.0	200	50
CMPD1001A	DUAL HIGH CURRENT DIODE, COMMON ANODE	90	250	1.0	200	50
CMPD1001S	DUAL HIGH CURRENT, IN SERIES	90	250	1.0	200	50
CMPD914	SINGLE SWITCHING DIODE	100	200	1.0	10	4.0
CMPD4448	SINGLE SWITCHING DIODE	100	200	1.0	100	4.0
CMPD7000	DUAL SWITCHING DIODE, IN SERIES	100	200	1.1	100	15
CMPD5001	SINGLE INDUCTIVE LOAD DIODE	175	400	1.0	200	50
CMPD5001S	DUAL INDUCTIVE LOAD DIODE, IN SERIES	175	400	1.0	200	50
CMPD2003	SINGLE HIGH VOLTAGE SWITCHING DIODE	250	200	1.0	100	50
CMPD2004	SINGLE HIGH VOLTAGE SWITCHING DIODE	300	200	1.0	100	50
CMPD2004S	DUAL HIGH VOLTAGE SWITCHING DIODE, IN SERIES	300	200	1.0	100	50
	SOT-143 Case					
BAS28	DUAL SWITCHING DIODE, ISOLATED	85	250	1.0	50	6.0
BAS56	DUAL HIGH CURRENT DIODE, ISOLATED	60	200	1.0	200	6.0
	SOT-323 Case					
CMSD4448	SINGLE SWITCHING DIODE	100	200	1.0	100	4.0

SUPER mini™ NEW

Schottky Diodes

TYPE NO.	CONFIGURATION	V_{RRM} (V) MAX	I_F (mA) MAX	V_F @ I_F (V) MAX	(mA)	t_{rr} (ns) MAX	CT *TYP (pF) MAX

SUPER™ mini

SOD-323 Case

High Current

CMDSH-3	SINGLE	30	100	0.55	100	5.0	7.0*

SOT-23 Case

Low Current

CMPD6263	SINGLE	70	15	0.41	1.0	1.0	2.0
CMPD6263A	DUAL, COMMON ANODE	70	15	0.41	1.0	1.0	2.0
CMPD6263C	DUAL, COMMON CATHODE	70	15	0.41	1.0	1.0	2.0
CMPD6263S	DUAL, IN SERIES	70	15	0.41	1.0	1.0	2.0

High Current

CMPSH-3	SINGLE	30	100	0.45	15	5.0	7.0*
CMPSH-3A	DUAL, COMMON ANODE	30	100	0.45	15	5.0	7.0*
CMPSH-3C	DUAL, COMMON CATHODE	30	100	0.45	15	5.0	7.0*
CMPSH-3S	DUAL, IN SERIES	30	100	0.45	15	5.0	7.0*

Low Leakage Diodes

SOD-80 Case

TYPE NO.	V_{RRM} (V) MAX	I_O (mA) MAX	I_R (nA) MAX	@ V_{RWN} (V)	V_F (V) MAX	@ I_F (mA)	C_T (pF) MAX
CLL457A	70	200	25	60	1.0	100	6.0
CLL459A	200	200	25	175	1.0	100	8.0
CLL3595	150	150	1.0	125	1.0	200	8.0

Stabistor Diode

SOT-23 Case

TYPE NO.	V_F (V) MIN	V_F (V) MAX	@ I_F (mA)	V_F (V) MIN	V_F (V) MAX	@ I_F (mA)	V_F (V) MIN	V_F (V) MAX	@ I_F (mA)	V_F (V) MIN	V_F (V) MAX	@ I_F (mA)	V_F (V) MIN	V_F (V) MAX	@ I_F (mA)
CBAS17	0.580	0.680	0.1	0.665	0.760	1.0	0.725	0.820	5.0	0.750	0.840	10	0.870	0.960	100

Zener Diodes

POWER	250mW						350mW			
	NEW SUPER™ mini 									
CASE	*PREFERRED*		SOD-323				*PREFERRED*		SOT-23	
ZENER VOLTAGE	INDUSTRY STANDARD	@ I_{ZT} = (mA)	GENERAL PURPOSE	@ I_{ZT} = (mA)	LOW LEVEL	@ I_{ZT} = (μA)	INDUSTRY STANDARD	@ I_{ZT} = (mA)	LOW NOISE LOW LEVEL	@ I_{ZT} = (μA)
1.8					CMDZ4678*	50				
2.0					CMDZ4679*	50				
2.2					CMDZ4680*	50				
2.4	CMDZ5221B	20	CMDZ2V4	5.0	CMDZ4681*	50	CMPZ5221B	20		
2.5	CMDZ5222B	20	CMDZ2V5	5.0		50	CMPZ5222B	20		
2.7	CMDZ5223B	20	CMDZ2V7	5.0	CMDZ4682*	50	CMPZ5223B	20		
2.8	CMDZ5224B	20	CMDZ2V8	5.0		50	CMPZ5224B	20		
3.0	CMDZ5225B	20			CMDZ4683*	50	CMPZ5225B	20	CMPZ4619*	250
3.3	CMDZ5226B	20	CMDZ3V3	5.0	CMDZ4684*	50	CMPZ5226B	20	CMPZ4620*	250
3.6	CMDZ5227B	20	CMDZ3V6	5.0	CMDZ4685*	50	CMPZ5227B	20	CMPZ4621*	250
3.9	CMDZ5228B	20	CMDZ3V9	5.0	CMDZ4686*	50	CMPZ5228B	20	CMPZ4622*	250
4.3	CMDZ5229B	20	CMDZ4V3	5.0	CMDZ4687*	50	CMPZ5229B	20	CMPZ4623*	250
4.7	CMDZ5230B	20	CMDZ4V7	5.0	CMDZ4688*	50	CMPZ5230B	20	CMPZ4624*	250
5.1	CMDZ5231B	20	CMDZ5V1	5.0	CMDZ4689*	50	CMPZ5231B	20	CMPZ4625*	250
5.6	CMDZ5232B	20	CMDZ5V6	5.0	CMDZ4690*	50	CMPZ5232B	20	CMPZ4626*	250
6.0	CMDZ5233B	20				50	CMPZ5233B	20		
6.2	CMDZ5234B	20	CMDZ6V2	5.0	CMDZ4691*	50	CMPZ5234B	20	CMPZ4627*	250
6.8	CMDZ5235B	20	CMDZ6V8	5.0	CMDZ4692*	50	CMPZ5235B	20		
7.5	CMDZ5236B	20	CMDZ7V5	5.0	CMDZ4693*	50	CMPZ5236B	20		
8.2	CMDZ5237B	20	CMDZ8V2	5.0	CMDZ4694*	50	CMPZ5237B	20		
8.7	CMDZ5238B	20			CMDZ4695*	50	CMPZ5238B	20		
9.1	CMDZ5239B	20	CMDZ9V1	5.0	CMDZ4696*	50	CMPZ5239B	20		
10	CMDZ5240B	20	CMDZ10	5.0	CMDZ4697*	50	CMPZ5240B	20		
11	CMDZ5241B	20	CMDZ11	5.0	CMDZ4698*	50	CMPZ5241B	20		
12	CMDZ5242B	20	CMDZ12	5.0	CMDZ4699*	50	CMPZ5242B	20		
13	CMDZ5243B	9.5	CMDZ13	5.0	CMDZ4700*	50	CMPZ5243B	9.5		
14	CMDZ5244B	9.0			CMDZ4701*	50	CMPZ5244B	9.0		
15	CMDZ5245B	8.5	CMDZ15	5.0	CMDZ4702*	50	CMPZ5245B	8.5		
16	CMDZ5246B	7.8	CMDZ16	5.0	CMDZ4703*	50	CMPZ5246B	7.8		
17	CMDZ5247B	7.4	CMDZ17	5.0	CMDZ4704*	50	CMPZ5247B	7.4		
18	CMDZ5248B	7.0	CMDZ18	5.0	CMDZ4705*	50	CMPZ5248B	7.0		
19	CMDZ5249B	6.6			CMDZ4706*	50	CMPZ5249B	6.6		
20	CMDZ5250B	6.2	CMDZ20	5.0	CMDZ4707*	50	CMPZ5250B	6.2		
22	CMDZ5251B	5.6	CMDZ22	5.0	CMDZ4708*	50	CMPZ5251B	5.6		
24	CMDZ5252B	5.2	CMDZ24	5.0	CMDZ4709*	50	CMPZ5252B	5.2		
25	CMDZ5253B	5.0			CMDZ4710*	50	CMPZ5253B	5.0		
27	CMDZ5254B	4.6	CMDZ27	2.0	CMDZ4711*	50	CMPZ5254B	4.6		
28	CMDZ5255B	4.5			CMDZ4712*	50	CMPZ5255B	4.5		
30	CMDZ5256B	4.2	CMDZ30	2.0	CMDZ4713*	50	CMPZ5256B	4.2		
33	CMDZ5257B	3.8	CMDZ33	2.0	CMDZ4714*	50	CMPZ5257B	3.8		
36	CMDZ5258B	3.4	CMDZ36				CMPZ5258B	3.4		
39	CMDZ5259B	3.2	CMDZ39				CMPZ5259B	3.2		
43	CMDZ5260B	3.0	CMDZ43				CMPZ5260B	3.0		
47	CMDZ5261B	2.7	CMDZ47				CMPZ5261B	2.7		

* Available on special order; consult factory.

Zener Diodes (Continued)

POWER	350mW						500mW			
CASE	 SOT-23						*PREFERRED*  SOD-80			
ZENER VOLTAGE	LOW LEVEL	@ I_{ZT} = (μA)	PROELECTRON SPECIFICATION	@ I_{ZT} = (mA)	DUAL, COMMON ANODE	@ I_{ZT} = (mA)	INDUSTRY STANDARD	@ I_{ZT} = (mA)	LOW NOISE LOW LEVEL	@ I_{ZT} = (μA)
3.0	CMPZ4683*	50								
3.3	CMPZ4684*	50	BZX84C3V3	5.0			CLL5226B	20		
3.6	CMPZ4685*	50	BZX84C3V6	5.0	CMPZDA3V6	5.0	CLL5227B	20		
3.9	CMPZ4686*	50	BZX84C3V9	5.0	CMPZDA3V9	5.0	CLL5228B	20		
4.3	CMPZ4687*	50	BZX84C4V3	5.0	CMPZDA4V3	5.0	CLL5229B	20		
4.7	CMPZ4688*	50	BZX84C4V7	5.0	CMPZDA4V7	5.0	CLL5230B	20		
5.1	CMPZ4689*	50	BZX84C5V1	5.0	CMPZDA5V1	5.0	CLL5231B	20	CLL4625	250
5.6	CMPZ4690*	50	BZX84C5V6	5.0	CMPZDA5V6	5.0	CLL5232B	20	CLL4626	250
6.0							CLL5233B	20		
6.2	CMPZ4691*	50	BZX84C6V2	5.0	CMPZDA6V2	5.0	CLL5234B	20	CLL4627	250
6.8	CMPZ4692*	50	BZX84C6V8	5.0	CMPZDA6V8	5.0	CLL5235B	20		
7.5	CMPZ4693*	50	BZX84C7V5	5.0	CMPZDA7V5	5.0	CLL5236B	20		
8.2	CMPZ4694*	50	BZX84C8V2	5.0	CMPZDA8V2	5.0	CLL5237B	20		
8.7	CMPZ4695*	50					CLL5238B	20		
9.1	CMPZ4696*	50	BZX84C9V1	5.0	CMPZDA9V1	5.0	CLL5239B	20		
10	CMPZ4697*	50	BZX84C10	5.0	CMPZDA10V	5.0	CLL5240B	20		
11	CMPZ4698*	50	BZX84C11	5.0	CMPZDA11V	5.0	CLL5241B	20		
12	CMPZ4699*	50	BZX84C12	5.0	CMPZDA12V	5.0	CLL5242B	20		
13	CMPZ4700*	50	BZX84C13	5.0	CMPZDA13V	5.0	CLL5243B	9.5		
14	CMPZ4701*	50					CLL5244B	9.0		
15	CMPZ4702*	50	BZX84C15	5.0	CMPZDA15V	5.0	CLL5245B	8.5		
16	CMPZ4703*	50	BZX84C16	5.0	CMPZDA16V	5.0	CLL5246B	7.8		
17	CMPZ4704*	50	BZX84C18	5.0	CMPZDA18V	5.0	CLL5247B	7.4		
18	CMPZ4705*	50					CLL5248B	7.0		
19	CMPZ4706*	50					CLL5249B	6.6		
20	CMPZ4707*	50	BZX84C20	5.0	CMPZDA20V	5.0	CLL5250B	6.2		
22	CMPZ4708*	50	BZX84C22	5.0	CMPZDA22V	5.0	CLL5251B	5.6		
24	CMPZ4709*	50	BZX84C24	5.0	CMPZDA24V	5.0	CLL5252B	5.2		
25	CMPZ4710*	50					CLL5253B	5.0		
27	CMPZ4711*	50	BZX84C27	2.0	CMPZDA27V	2.0	CLL5254B	4.6		
28	CMPZ4712*	50					CLL5255B	4.5		
30	CMPZ4713*	50	BZX84C30	2.0	CMPZDA30V	2.0	CLL5256B	4.2		
33	CMPZ4714*	50	BZX84C33	2.0	CMPZDA33V	2.0	CLL5257B	3.8		

* Available on special order; consult factory.

Zener Diodes (Continued)

POWER	500mW		1.0W	
				
CASE	SOD-80		MELF	
ZENER VOLTAGE	LOW LEVEL	@ I_{ZT} = (μA)	GENERAL PURPOSE	@ I_{ZT} = (mA)
3.6			CLL4729A	69
3.9			CLL4730A	64
4.3			CLL4731A	58
4.7			CLL4732A	53
5.1	CLL4689	50	CLL4733A	49
5.6	CLL4690	50	CLL4734A	45
6.0				
6.2	CLL4691	50	CLL4735A	41
6.8	CLL4692	50	CLL4736A	37
7.5	CLL4693	50	CLL4737A	34
8.2	CLL4694	50	CLL4738A	31
8.7	CLL4695	50		
9.1	CLL4696	50	CLL4739A	28
10	CLL4697	50	CLL4740A	25
11	CLL4698	50	CLL4741A	23
12	CLL4699	50	CLL4742A	21
13	CLL4700	50	CLL4743A	19
14	CLL4701	50		
15	CLL4702	50	CLL4744A	17
16	CLL4703	50	CLL4745A	15.5
17	CLL4704	50		
18	CLL4705	50	CLL4746A	14
19	CLL4706	50		
20	CLL4707	50	CLL4747A	12.5
22	CLL4708	50	CLL4748A	11.5
24	CLL4709	50	CLL4749A	10.5
25	CLL4710	50		
27	CLL4711	50	CLL4750A	9.5
28	CLL4712	50		
30	CLL4713	50	CLL4751A	8.5
33	CLL4714	50	CLL4752A	7.5
36			CLL4753A*	7.0
39			CLL4754A*	6.5
43			CLL4755A*	6.0
47			CLL4756A*	5.5
51			CLL4757A*	5.0
56			CLL4758A*	4.5
62			CLL4759A*	4.0
68			CLL4760A*	3.7
75			CLL4761A*	3.3
82			CLL4762A*	3.0
91			CLL4763A*	2.8
100			CLL4764A*	2.5

* Available on special order; consult factory.

Current Limiting Diodes

SOD-80 Case

MAXIMUM RATINGS (T_L = 75°C)	**SYMBOL**		**UNITS**
Peak Operating Voltage	POV	100	V
Power Dissipation	P_D	800	mW
Operation and Storage Junction Temperature	T_J,T_{stg}	-65 to + 200	°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

TYPE NO.	REGULATOR CURRENT (1) I_P@V_T=25V (mA)			DYNAMIC IMPEDANCE Z_T@V_T=25V (MΩ)	KNEE IMPEDANCE Z_K@V_K=6.0V (MΩ)	LIMITING VOLTAGE V_L@I_L=0.8 I_P MIN (V)
	MIN	NOM	MAX	MIN	MIN	MAX
CCLM0035	0.010	0.035	0.060	8.0	4.00	0.4
CCLM0130	0.050	0.130	0.210	6.0	2.00	0.6
CCLM0300	0.200	0.310	0.420	4.0	1.00	0.8
CCLM0500	0.400	0.515	0.630	2.0	0.50	1.1
CCLM0750	0.600	0.760	0.920	1.0	0.20	1.4
CCLM1000	0.880	1.100	1.320	0.65	0.10	1.7
CCLM1500	1.280	1.500	1.720	0.45	0.07	2.0
CCLM2000	1.680	2.000	2.320	0.35	0.05	2.3
CCLM2700	2.280	2.690	3.100	0.30	0.03	2.7
CCLM3500	3.000	3.550	4.100	0.25	0.02	3.2
CCLM4500	3.900	4.500	5.100	0.20	0.01	3.7
CCLM5750	5.000	5.750	6.500	0.05	0.005	4.5

The Temperature Coefficient is measured between the following points: +25°C, +50°C

(1) TESTED USING THE PULSED METHOD. $\left(\text{PULSE WIDTH (ms)} = \frac{27.5}{I_P \text{ NOM (mA)}}\right)$

High Current, Current Limiting Diodes

SOD-80 Case

MAXIMUM RATINGS (T_L = 75°C)	**SYMBOL**		**UNITS**
Peak Operating Voltage	POV	50	V
Power Dissipation	P_D	800	mW
Operation and Storage Junction Temperature	T_J,T_{stg}	-65 to + 200	°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

TYPE NO.	**REGULATOR CURRENT (1)** $I_P@V_T$=25V (mA)			**DYNAMIC IMPEDANCE** $Z_T@V_T$=25V (MΩ)	**KNEE IMPEDANCE** $Z_K@V_K$=6.0V (KΩ)	**LIMITING VOLTAGE** $V_L@I_L$=0.8 I_PMIN (V)
	MIN	**NOM**	**MAX**	**MIN**	**MIN**	**MAX**
CCLHM080	6.56	8.2	9.84	0.32	15	3.1
CCLHM100	8.00	10	12	0.17	6.0	3.5
CCLHM120	9.60	12	14.4	0.08	3.0	3.8
CCLHM150	12	15	18	0.03	2.0	4.3

The Temperature Coefficient is measured between the following points: +25°C, +50°C

(1) TESTED USING THE PULSED METHOD. $\left(\text{PULSE WIDTH (ms)} = \frac{27.5}{I_P\text{NOM (mA)}}\right)$

SELECT GUIDE

Rectifiers, General Purpose

1.0 to 3.0 Amperes
200 to 1000 Volts

I_O (AMPS)	1.0		3.0
@ T_A (°C)	25	25	25
I_{FSM} (AMPS)	30	30	200
			
CASE	MELF	SMB	SMC
V_{RRM} (VOLTS)			
200	CLLR1-02	CMR1-02	CMR3-02
400	CLLR1-04	CMR1-04	CMR3-04
600	CLLR1-06	CMR1-06	CMR3-06
1000	CLLR1-10	CMR1-10	CMR3-10

V_F MAX @ $I_F = I_O$	1.1V	1.1V	1.2V

I_R MAX @ V_{RRM}	10μA	10μA	5.0μA

Rectifiers, Fast Recovery

1.0 Ampere
200 to 1000 Volts

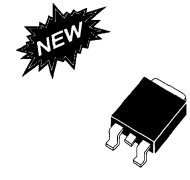
I_O (AMPS)	1.0
@ T_A (°C)	25
I_{FSM} (AMPS)	30
CASE	 MELF
V_{RRM} (VOLTS)	
200	CLLR1F-02
600	CLLR1F-06
1000	CLLR1F-10

V_F MAX @ $I_F = I_O$	1.3V

I_R MAX @ V_{RRM}	5.0μA
t_{rr} (200V)	150ns
t_{rr} (600V)	250ns
t_{rr} (1000V)	500ns

Rectifiers, Ultra Fast

1.0 to 6.0 Amperes
100 to 600 Volts

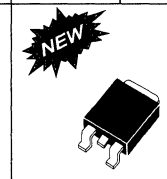
I_O (AMPS)	1.0		3.0		6.0
@ T_A (°C)	25	25	25	25	25
I_{FSM} (AMPS)	30	30	150	75	75
CASE	 MELF	 SMB	 SMC	 DPAK	
V_{RRM} (VOLTS)					
100	CLLR1U-01	CMR1U-01	CMR3U-01		
200	CLLR1U-02	CMR1U-02	CMR3U-02	CUD3-02	CUD6-02C
400	CLLR1U-04	CMR1U-04	CMR3U-04		
600		NEW CMR1U-06	CMR3U-06		

V_F MAX @ $I_F = I_O$					
100V	1.0V	1.0V	1.0V		
200V	1.0V	1.0V	1.0V	0.95V	1.2V
400V	1.25V	1.25V	1.25V		
600V		1.4V	1.4V		

I_R MAX @ V_{RRM}	5.0μA	5.0μA	5.0μA	5.0μA	5.0μA
t_{rr} (100V thru 400V)	50ns	50ns	50ns	35ns	35ns
t_{rr} (600V)		100ns	100ns		

Rectifiers, Schottky

1.0 to 6.0 Amperes
20 to 60 Volts

I_O (AMPS)	1.0			2.0		3.0		6.0
@ T_A (°C)	25	25	25	25	25	25	25	25
I_{FSM} (AMPS)	30	30	10	50	10	150	75	75
CASE	 MELF	 SMB	 SOT-89	 SMB	 SOT-223	 SMC	 DPAK	
V_{RRM} (VOLTS)								
20	CLLSH1-20	CMSH1-20				CMSH3-20		
40	CLLSH1-40	CMSH1-40	CXSH-4	CMSH2-40	CZSH-4	CMSH3-40	CSHD3-40	CSHD6-40C
60	CLLSH1-60	CMSH1-60				CMSH3-60		

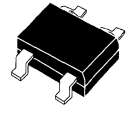
V_F MAX @ $I_F = I_O$								
20V	0.5V	0.55V				0.5V		
40V	0.5V	0.55V	0.55V	0.55V	0.55V	0.5V	0.6V	0.7V
60V	0.7V	0.7V				0.7V		

I_R MAX @ V_{RRM}	500µA	500µA	1000µA	500µA	1000µA	500µA	200µA	100µA

Bridge Rectifiers

Single Phase, Full Wave

0.5 to 1.0 Ampere
100 to 1000 Volts

I_O (AMPS)	0.5	1.0		
@ T_A (°C)	25	50	50	25
I_{FSM} (AMPS)	30	50	50	50
CASE	NEW HD BRIDGE™  HD DIP	 SMDIP		NEW ULTRA FAST RECOVERY
V_{RRM} (VOLTS)	GENERAL PURPOSE	GENERAL PURPOSE	FAST RECOVERY	
100				CBR1U-D010S
200	CBRHD-02	CBR1-D020S	CBR1F-D020S	CBR1U-D020S
400	CBRHD-04	CBR1-D040S	CBR1F-D040S	
600	CBRHD-06	CBR1-D060S	CBR1F-D060S	
1000	CBRHD-10*	CBR1-D100S	CBR1F-D100S	

V_F MAX @ I_F	1.0V @ 0.4A	1.1V @ 1.0A	1.3V @ 1.0A	1.05V @ 1.0A
I_R MAX @ V_{RRM}	5.0μA	10μA	10μA	10μA
t_{rr}(100V thru 400V)			200ns	50ns
t_{rr}(600V)			300ns	
t_{rr}(1000v)			500ns	

* Available on special order only, consult factory.

SCRs (Silicon Controlled Rectifiers)

0.8 Ampere RMS
400 Volts

I_T (AMPS)	0.8	
@ T_C (°C)	67	67
I_{TSM} (AMPS)	10	10
CASE	 SOT-23	 SOT-223
V_{RRM} (VOLTS)		NEW!
400	CMPS5064	CZS5064

I_{GT}	200µA	200µA
V_{GT}	0.8V	0.8V
I_H	5.0mA	5.0mA

Triacs

2.0 Amperes
200 to 800 Volts

I_T (AMPS)	2.0	
@ T_C (°C)	80	80
I_{TSM} (AMPS)	10	10
CASE	 SOT-89	
V_{RRM} (VOLTS)		NEW!
200	CQ89B	CQ89BS
400	CQ89D	CQ89DS
600	CQ89M	CD89MS
800	CQ89N	CQ89NS

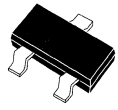
I_{GT} QI	25mA	5.0mA
I_{GT} QII	25mA	5.0mA
I_{GT} QIII	25mA	5.0mA
I_{GT} QIV	25mA	5.0mA
V_{GT} QI - QIV	2.0V	2.0V
I_H	25mA	5.0mA

Detailed Data Sheets

(in alphanumeric order)

2N7002

N-CHANNEL ENHANCEMENT-MODE MOSFET



SOT-23 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N7002 type is a N-Channel Field Effect Transistor, manufactured by the N-Channel DMOS Process, designed for high speed pulsed amplifier and driver applications.

Marking Code is 702.

MAXIMUM RATINGS (T_A=25°C)

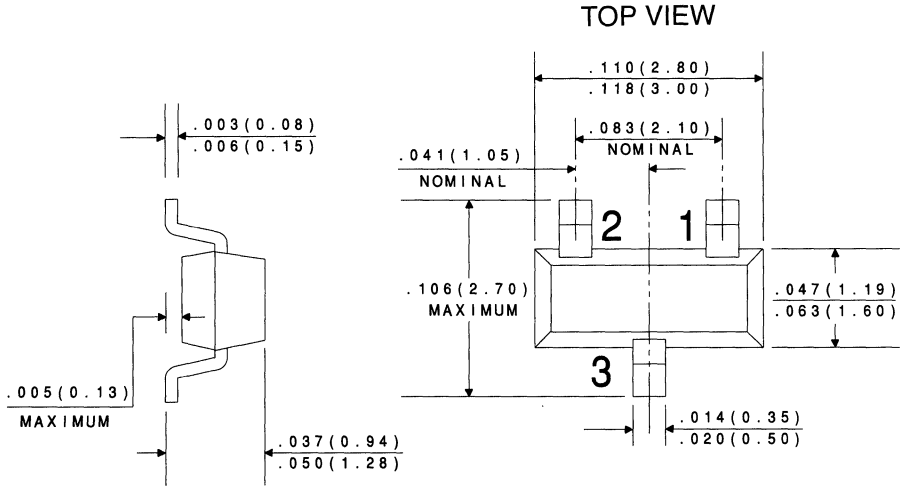
	SYMBOL		UNITS
Drain-Source Voltage	V_{DS}	60	V
Drain-Gate Voltage	V_{DG}	60	V
Gate-Source Voltage	V_{GS}	40	V
Continuous Drain Current (T_C=25°C)	I_D	115	mA
Continuous Drain Current (T_C=100°C)	I_D	75	mA
Continuous Source Current (Body Diode)	I_S	115	mA
Maximum Pulsed Drain Current	I_{DM}	800	mA
Maximum Pulsed Source Current	I_{SM}	800	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-55 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/mW

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{GSSF}	V_{GS}=20V			100	nA
I_{GSSR}	V_{GS}=-20V			-100	nA
I_{DSS}	V_{DS}=60V, V_{GS}=0			1.0	μA
I_{DSS}	V_{DS}=60V, V_{GS}=0, T_A=125°C			500	μA
$I_{D(ON)}$	$V_{DS} \geq 2V_{DS(ON)}$, V_{GS}=10V	500			mA
BV_{DSS}	I_D=10μA	60	105		V
$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	1.0	2.1	2.5	V
$V_{DS(ON)}$	V_{GS}=10V, I_D=500mA			3.75	V
$V_{DS(ON)}$	V_{GS}=5.0V, I_D=50mA			1.5	V
$r_{DS(ON)}$	V_{GS}=10V, I_D=500mA		3.7	7.5	Ω

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$r_{DS(ON)}$	V_{GS}=10V, I_D=500mA, T_A=100°C			13.5	Ω
$r_{DS(ON)}$	V_{GS}=5.0V, I_D=50mA		6.2	7.5	Ω
$r_{DS(ON)}$	V_{GS}=5.0V, I_D=50mA, T_A=100°C			13.5	Ω
g_{FS}	$V_{DS} \geq 2V_{DS(ON)}$, I_D=200mA	80			mmhos
C_{rss}	V_{DS}=25V, V_{GS}=0, f=1.0MHz			5.0	pF
C_{iss}	V_{DS}=25V, V_{GS}=0, f=1.0MHz			50	pF
C_{oss}	V_{DS}=25V, V_{GS}=0, f=1.0MHz			25	pF
t_{on}	V_{DD}=30V, I_D=10V, R_G=25Ω, R_L=25Ω			20	ns
t_{off}	V_{DD}=30V, I_D=10V, R_G=25Ω, R_L=25Ω			20	ns
V_{SD}	V_{GS}=0V, I_S=11.5mA			-1.5	V

All dimensions in inches (mm).



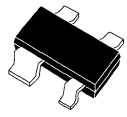
DATA SHEET

LEAD CODE:

1) GATE
2) SOURCE
3) DRAIN

BAS28

DUAL, ISOLATED HIGH SPEED SWITCHING DIODE



SOT-143 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR BAS28 type is a ultra-high speed silicon switching diode manufactured by the epitaxial planar process, in an epoxy molded surface mount package with isolated dual diodes, designed for high speed switching applications.

Marking code is A61.

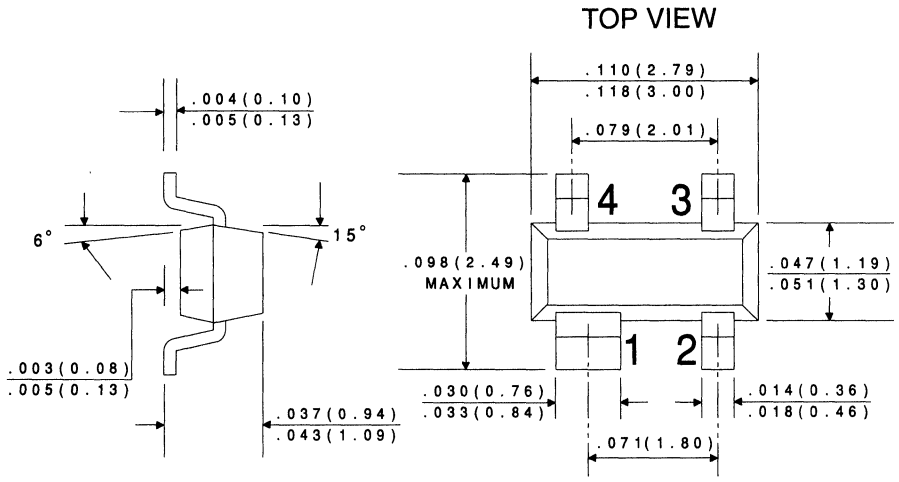
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Continuous Reverse Voltage	V_R	75	V
Peak Repetitive Reverse Voltage	V_{RRM}	85	V
Continuous Forward Current	I_F	250	mA
Peak Repetitive Forward Current	I_{FRM}	250	mA
Forward Surge Current, tp=1 μsec.	I_{FSM}	4000	mA
Forward Surge Current, tp=1 msec.	I_{FSM}	2000	mA
Forward Surge Current, tp=1 sec.	I_{FSM}	1000	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_R	V_R=25V, T_A=150°C		30	μA
I_R	V_R=75V		1.0	μA
I_R	V_R=75V, T_A=150°C		50	μA
V_F	I_F=1.0mA		0.715	V
V_F	I_F=10mA		0.855	V
V_F	I_F=50mA		1.000	V
V_F	I_F=150mA		1.250	V
C_T	V_R=0, f=1 MHz		2.0	pF
t_{rr}	I_F=I_R=10mA, R_L=100Ω, Rec. to 1.0mA		6.0	ns
Q_S	I_F=10mA, V_R=5.0V, R_L=500Ω		45	pC
V_{FR}	I_F=10mA, t_r=20ns		1.75	V

All dimensions in inches (mm).

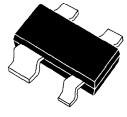


LEAD CODE:

1) ANODE 1
2) ANODE 2
3) CATHODE 2
4) CATHODE 1

BAS56

DUAL HIGH CURRENT SWITCHING DIODE



SOT-143 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR BAS56 type is an ultra-high speed silicon switching diode manufactured by the epitaxial planar process, in an epoxy molded surface mount package with isolated dual diodes, designed for high current, high speed switching applications.

Marking code is L51.

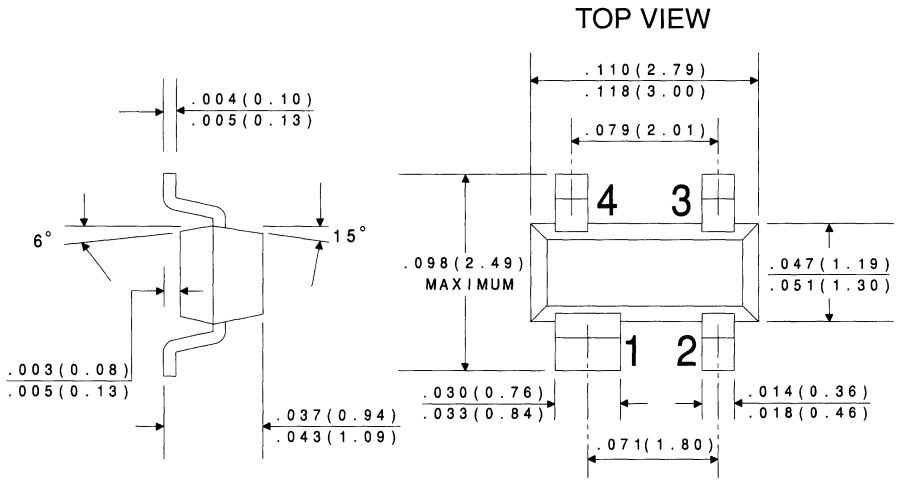
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Continuous Reverse Voltage	V_R	60	V
Peak Repetitive Reverse Voltage	V_{RRM}	60	V
Continuous Forward Current	I_F	200	mA
Peak Repetitive Forward Current	I_{FRM}	600	mA
Forward Surge Current, tp=1 μsec.	I_{FSM}	4000	mA
Forward Surge Current, tp=1 sec.	I_{FSM}	1000	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_R	V_R=60V		100	nA
I_R	V_R=60V, T_A=150°C		100	μA
I_R	V_R=75V		10	μA
V_F	I_F=10mA		0.75	V
V_F	I_F=200mA		1.00	V
V_F	I_F=500mA		1.25	V
C_T	V_R=0, f=1 MHz		2.5	pF
t_{rr}	I_F=I_R=400mA, R_L=100Ω, Rec. to 40mA		6.0	ns
Q_S	I_F=10mA, V_R=5.0V, R_L=500Ω		50	pC
V_{FR}	I_F=400mA, t_r=30ns		1.2	V
V_{FR}	I_F=400mA, t_r=100ns		1.5	V

All dimensions in inches (mm).



LEAD CODE:

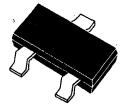
1) ANODE 1
2) ANODE 2
3) CATHODE 2
4) CATHODE 1

DATA SHEET

R1

BZX84C3V3 THRU BZX84C33

350mW ZENER DIODE
3.3 VOLTS THRU 33 VOLTS
5% TOLERANCE



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

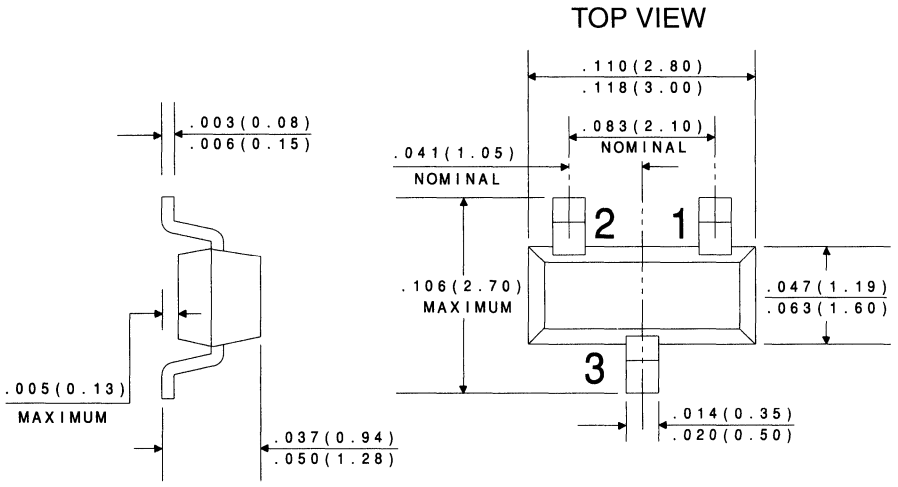
The CENTRAL SEMICONDUCTOR BZX84C3V3 Series Silicon Zener Diode is a high quality voltage regulator for use in industrial, commercial, entertainment and computer applications.

ABSOLUTE MAXIMUM RATINGS	**SYMBOL**		**UNIT**
Power Dissipation (@T_A=25°C)	P_D	350	mW
Operating and Storage Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C), V_F=0.9V MAX @ I_F=10mA FOR ALL TYPES.

TYPE	Zener Voltage V_Z@I_{ZT}		Test Current	Maximum Zener Impedance			Maximum Reverse Current		Maximum Zener Current	Maximum Zener Voltage Temperature Coefficient	Marking Code
	MIN	MAX	I_{ZT}	Z_{ZT}@I_{ZT}	Z_{ZK}@I_{ZK}		I_R@V_R		I_{ZM}	ΘV_Z	
	Volts	Volts	mA	Ω	Ω	mA	μA	Volts	mA	%/°C	
BZX84C3V3	3.1	3.5	5.0	95	600	1.0	5.0	1.0	76	-0.06	W6
BZX84C3V6	3.4	3.8	5.0	90	600	1.0	5.0	1.0	69	-0.06	W7
BZX84C3V9	3.7	4.1	5.0	90	600	1.0	3.0	1.0	64	-0.06	W8
BZX84C4V3	4.0	4.6	5.0	90	600	1.0	3.0	1.0	58	-0.05	W9
BZX84C4V7	4.4	5.0	5.0	80	500	1.0	3.0	2.0	53	-0.03	Z1
BZX84C5V1	4.8	5.4	5.0	60	480	1.0	2.0	2.0	49	0.02	Z2
BZX84C5V6	5.2	6.0	5.0	40	400	1.0	1.0	2.0	45	0.03	Z3
BZX84C6V2	5.8	6.6	5.0	10	150	1.0	3.0	4.0	40	0.04	Z4
BZX84C6V8	6.4	7.2	5.0	15	80	1.0	2.0	4.0	37	0.05	Z5
BZX84C7V5	7.0	7.9	5.0	15	80	1.0	1.0	5.0	33	0.05	Z6
BZX84C8V2	7.7	8.9	5.0	15	80	1.0	0.7	5.0	30	0.06	Z7
BZX84C9V1	8.5	9.6	5.0	15	100	1.0	0.5	6.0	27	0.06	Z8
BZX84C10	9.4	10.6	5.0	20	150	1.0	0.2	7.0	25	0.07	Z9
BZX84C11	10.4	11.6	5.0	20	150	1.0	0.1	8.0	23	0.07	Y1
BZX84C12	11.4	12.7	5.0	25	150	1.0	0.1	8.0	21	0.07	Y2
BZX84C13	12.4	14.1	5.0	30	170	1.0	0.1	8.0	19	0.08	Y3
BZX84C15	13.8	15.6	5.0	30	200	1.0	0.05	10.5	17	0.08	Y4
BZX84C16	15.3	17.1	5.0	40	200	1.0	0.05	11.2	16	0.08	Y5
BZX84C18	16.8	19.1	5.0	45	225	1.0	0.05	12.6	14	0.08	Y6
BZX84C20	18.8	21.2	5.0	55	225	1.0	0.05	14.0	12	0.08	Y7
BZX84C22	20.8	23.3	5.0	55	250	1.0	0.05	15.4	11	0.09	Y8
BZX84C24	22.8	25.6	5.0	70	250	1.0	0.05	16.8	10	0.09	Y9
BZX84C27	25.1	28.9	2.0	80	300	0.5	0.05	18.9	9	0.09	Y10
BZX84C30	28.0	32.0	2.0	80	300	0.5	0.05	21.0	8	0.09	Y11
BZX84C33	31.0	35.0	2.0	80	325	0.5	0.05	23.1	7	0.09	Y12

All dimensions in inches (mm).



LEAD CODE:

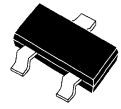
1) ANODE
2) NO CONNECTION
3) CATHODE

DATA SHEET

R1

CBAS17

LOW VOLTAGE STABISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CBAS17 type is a planar epitaxial silicon switching diode, designed for low voltage stabilizing applications.
Marking code is A91.

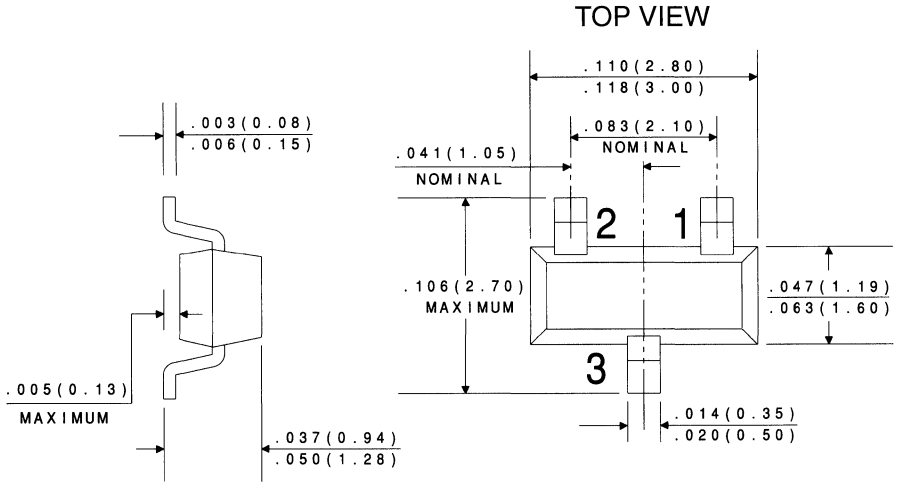
MAXIMUM RATINGS (T_A=25°C)

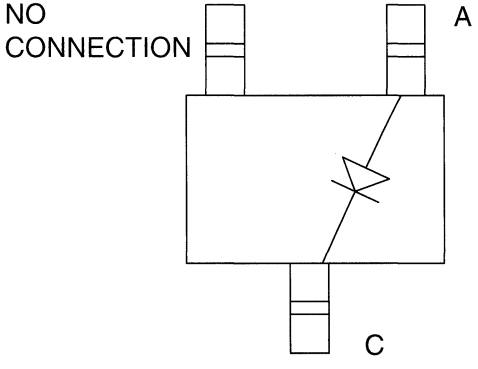
	SYMBOL		UNITS
Peak Repetitive Forward Current	I_{FRM}	250	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
V_F	I_F=0.1mA	.580	.665	.680	V
V_F	I_F=1.0mA	.665	.745	.760	V
V_F	I_F=5.0mA	.725	.805	.820	V
V_F	I_F=10mA	.750	.825	.840	V
V_F	I_F=100mA	.870	.920	.960	V
I_R	V_R=4.0V			5.0	μA
C_T	V_R=0, f=1 MHz			140	pF

All dimensions in inches (mm).



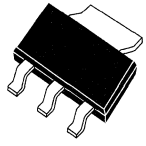


DATA SHEET

R1

CBCP68 NPN
CBCP69 PNP

SILICON COMPLEMENTARY SMALL SIGNAL TRANSISTORS



SOT-223 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CBCP68, CBCP69 types are complementary silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for applications requiring high current capability.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Emitter Voltage	V_{CES}	25	V
Collector-Emitter Voltage	V_{CEO}	20	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	1.0	A
Collector Current-Peak	I_{CM}	2.0	A
Base Current	I_B	100	mA
Base Current-Peak	I_{BM}	200	mA
Power Dissipation	P_D	2.0	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	62.5	°C/W

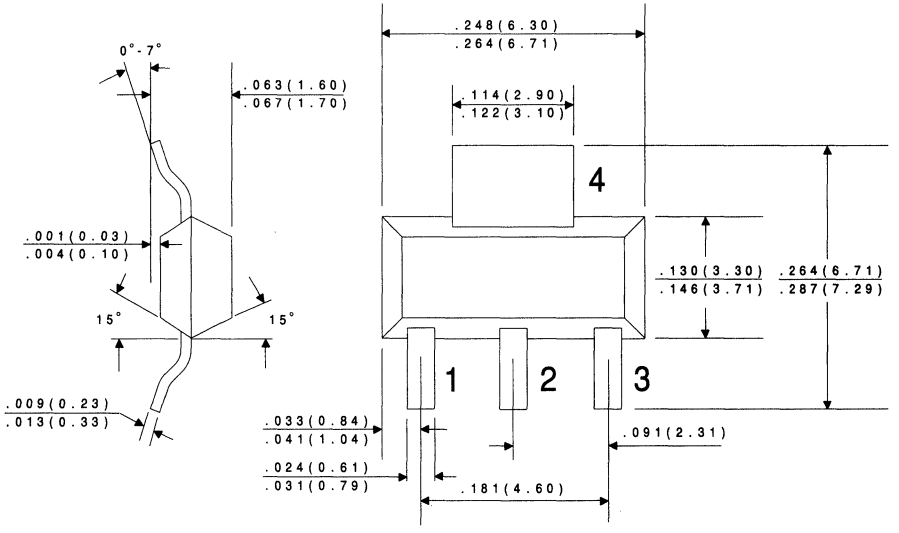
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{CBO}	V_{CB}=25V			10	μA
I_{CBO}	V_{CB}=25V, T_A=150°C			1.0	mA
I_{EBO}	V_{EB}=5.0V			10	μA
BV_{CBO}	I_C=10μA	25			V
BV_{CEO}	I_C=10mA	20			V
BV_{EBO}	I_E=1.0μA	5.0			V
$V_{CE(SAT)}$	I_C=1.0A, I_B=100mA			0.5	V
$V_{BE(ON)}$	V_{CE}=10V, I_C=5.0mA		0.6		V
$V_{BE(ON)}$	V_{CE}=1.0V, I_C=1.0A			1.0	V
h_{FE}	V_{CE}=10V, I_C=5.0mA	50			

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
h_{FE}	V_{CE}=1.0V, I_C=500mA	85		375	
h_{FE}	V_{CE}=1.0V, I_C=1.0A	60			
f_T	V_{CE}=5.0V, I_C=10mA, f=20MHz	65			MHz
C_{ob}	V_{CB}=5.0V, I_E=0, F=450kHz		25		pF

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

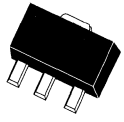
1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

DATA SHEET

R1

CBCX68 NPN
CBCX69 PNP

SILICON COMPLEMENTARY SMALL SIGNAL TRANSISTORS



SOT-89 CASE

Central™
Semiconductor Corp.

DESCRIPTION

The CENTRAL SEMICONDUCTOR CBCX68, CBCX69 types are complementary silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for applications requiring high current capability.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Emitter Voltage	V_{CES}	25	V
Collector-Emitter Voltage	V_{CEO}	20	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	1.0	A
Collector Current-Peak	I_{CM}	2.0	A
Base Current	I_B	100	mA
Base Current-Peak	I_{BM}	200	mA
Power Dissipation	P_D	1.2	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	104	°C/W

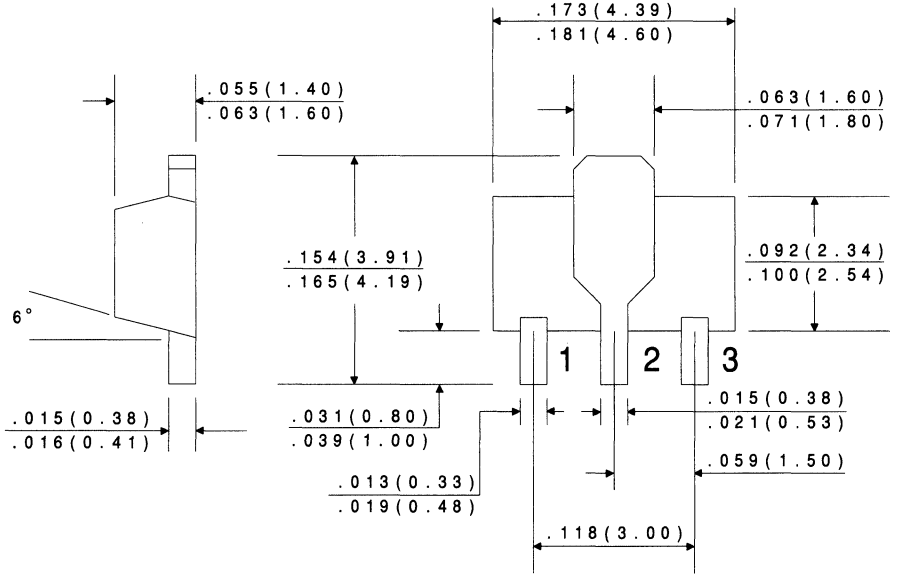
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{CBO}	V_{CB}=25V			100	nA
I_{CBO}	V_{CB}=25V, T_A=150°C			10	μA
I_{EBO}	V_{EB}=5.0V			10	μA
BV_{CBO}	I_C=10μA	25			V
BV_{CEO}	I_C=10mA	20			V
BV_{EBO}	I_E=1.0μA	5.0			V
$V_{CE(SAT)}$	I_C=1.0A, I_B=100mA			0.5	V
$V_{BE(ON)}$	V_{CE}=10V, I_C=5.0mA		0.6		V
$V_{BE(ON)}$	V_{CE}=1.0V, I_C=1.0A			1.0	V

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
h_{FE}	V_{CE}=10V, I_C=5.0mA	50			
h_{FE}	V_{CE}=1.0V, I_C=500mA	85		375	
h_{FE}	V_{CE}=1.0V, I_C=1.0A	60			
f_T	V_{CE}=5.0V, I_C=10mA, f=20MHz	65			MHz

All dimensions in inches (mm).

TOP VIEW



DATA SHEET

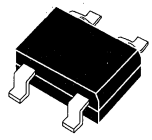
LEAD CODE:

1) EMITTER
2) COLLECTOR
3) BASE

R1

CBR1-D020S SERIES

1.0 AMP DUAL IN LINE BRIDGE RECTIFIER



SMDIP CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CBR1-D020S series types are silicon full wave bridge rectifiers mounted in a durable epoxy, surface mount, molded case, utilizing glass passivated chips. To order devices on tape and reel (1,000/13" reel) add TR13 suffix.
NOTE: Also available in Fast Recovery, please contact factory for details.

MAXIMUM RATINGS (T_A=25°C)

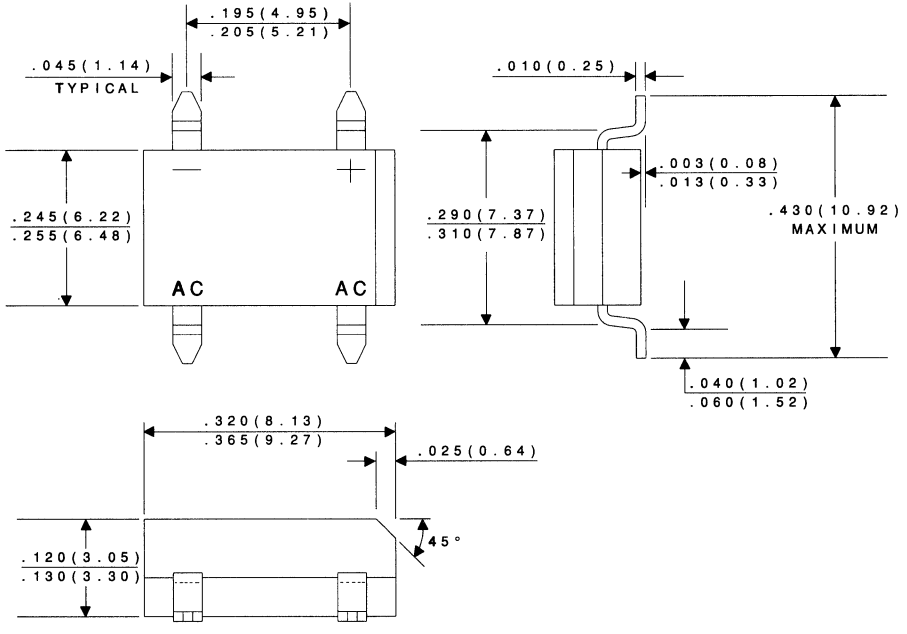
	SYMBOL	CBR1-D020S	CBR1-D040S	CBR1-D060S	CBR1-D100S	UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	200	400	600	1000	V
DC Blocking Voltage	V_R	200	400	600	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	140	280	420	700	V
Average Forward Current (T_A=50°C)	I_O		1.0			A
Peak Forward Surge Current	I_{FSM}		50			A
Operating and Storage Junction Temperature	T_J,T_{stg}		-65 to +150			°C

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
V_F	I_F=1.0A			1.1	V
I_R	V_R=Rated V_{RRM}			10	μA
I_R	V_R=Rated V_{RRM}, T_A=125°C			0.5	mA
C_J	V_R=4.0V, f=1.0MHz		25		pF

All dimensions in inches (mm).

TOP VIEW



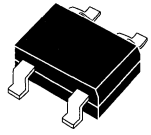
DATA SHEET

R1

NEW

CBR1U-D010S
CBR1U-D020S

1.0 AMP ULTRA FAST BRIDGE RECTIFIER



SMDIP CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CBR1U-D010S, CBR1U-D020S types are silicon full wave ultra fast bridge rectifiers mounted in a durable epoxy surface mount molded case, utilizing glass passivated chips.

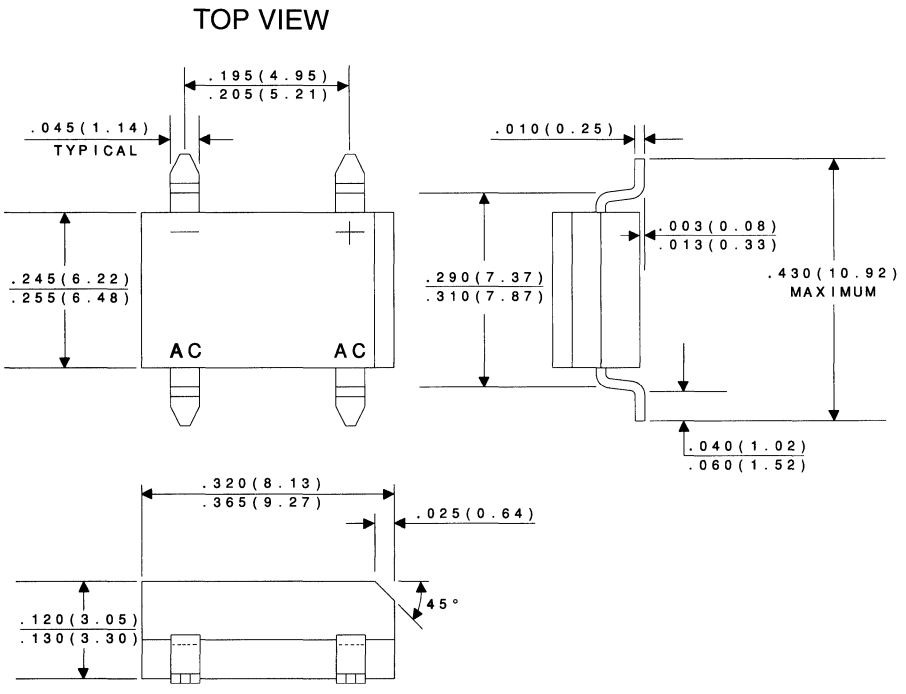
MAXIMUM RATINGS: (T_A=25°C unless otherwise noted)

	SYMBOL	CBR1U-D010S	CBR1U-D020S	UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	100	200	V
DC Blocking Voltage	V_R	100	200	V
RMS Reverse Voltage	$V_{R(RMS)}$	70	140	V
Average Forward Current (T_A=40°C)	I_O	1.0		A
Peak Forward Surge Current	I_{FSM}	50		A
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150		°C
Thermal Resistance	Θ_{JA}	40		°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
V_F	I_F=1.0A (Per Diode)		1.05	V
I_R	V_R=Rated V_{RRM}		5.0	μA
I_R	V_R=Rated V_{RRM}, T_A=125°C		1.0	mA
t_{rr}	I_F=500mA, I_R=1.0A, I_{rr}=250mA		50	ns

All dimensions in inches (mm).



DATA SHEET

NEW

CBRHD SERIES

HIGH DENSITY
½ AMP DUAL IN LINE
BRIDGE RECTIFIER

HD™ BRIDGE

HD DIP CASE

Central™
Semiconductor Corp.

FEATURES:

- Truly efficient use of board space, requires only 42mm² of board space vs. 120mm² of board space for industry standard 1.0 Amp surface mount rectifier.
- 50% higher density (amps/mm²) than the industry standard 1.0 Amp surface mount rectifier.
- Glass passivated chips for high reliability.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CBRHD series types are silicon full wave bridge rectifiers mounted in a durable epoxy surface mount molded case, utilizing glass passivated chips.

MAXIMUM RATINGS: (T_A=25°C unless otherwise noted)

	SYMBOL	CBRHD -02	CBRHD -04	CBRHD -06	CBRHD -10 *	UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	200	400	600	1000	V
DC Blocking Voltage	V_R	200	400	600	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	140	280	420	700	V
Average Forward Current (T_A=40°C)(1)	I_O		0.5			A
Average Forward Current (T_A=40°C)(2)	I_O		0.8			A
Peak Forward Surge Current	I_{FSM}		30			A
Operating and Storage Junction Temperature	T_J,T_{stg}		-65 to +150			°C

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

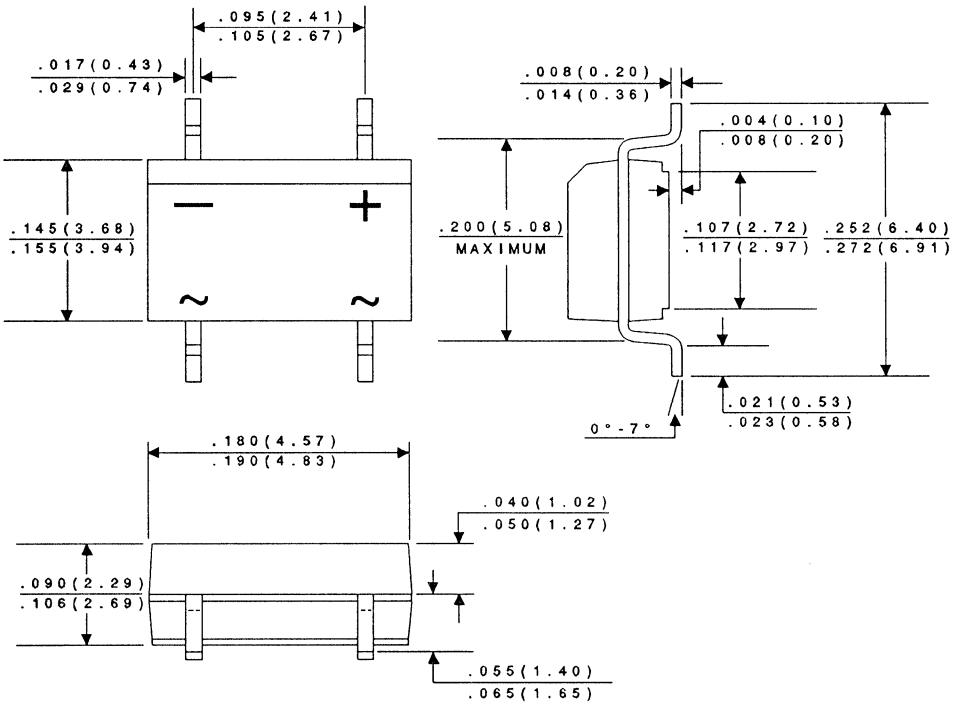
SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
V_F	I_F=400mA (Per Diode)			1.0	V
I_R	V_R=Rated V_{RRM}			5.0	μA
I_R	V_R=Rated V_{RRM}, T_A=125°C			500	μA
C_J	V_R=4.0V, f=1.0MHz		20		pF

1) Mounted on a Glass-Epoxy P.C.B.
2) Mounted on a Ceramic P.C.B.

* Available on special order, please consult factory.

All dimensions in inches (mm).

TOP VIEW



DATA SHEET

CCLHM080
THRU
CCLHM150

HIGH CURRENT
CURRENT LIMITING DIODE

SOD-80

Central™
Semiconductor Corp.

FEATURES

- LOW COST
- SUPERIOR LOT TO LOT CONSISTENCY
- HIGH RELIABILITY
- LEADED DEVICES AVAILABLE
- SPECIAL SELECTIONS AVAILABLE

DESCRIPTION

The CENTRAL SEMICONDUCTOR CCLHM080 series types are high current silicon field effect current regulator diodes designed for applications requiring a constant current over a wide voltage range. These devices are manufactured in the cost effective SOD-80 double plug case which provides many benefits to the user including space savings and improved thermal characteristics. Special selections of I_P (regulator current) are available for critical applications.

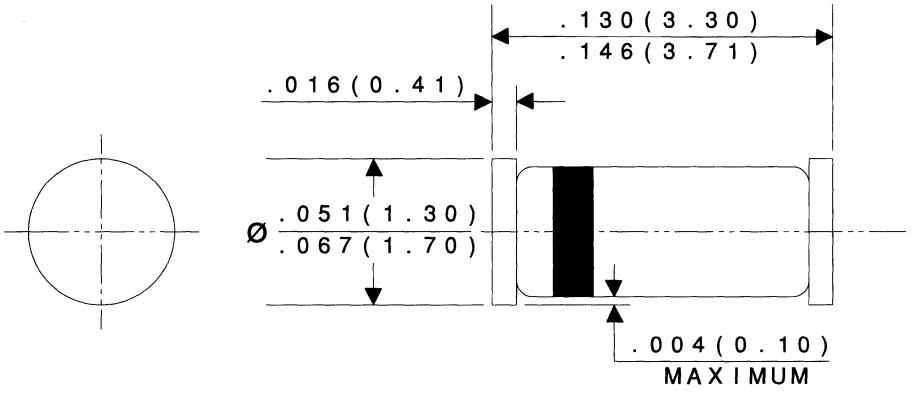
MAXIMUM RATINGS (T_L=75°C)	**SYMBOL**		**UNITS**
Peak Operating Voltage	POV	50	V
Power Dissipation	P_D	800	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +200	°C

TYPE NO.	REGULATOR CURRENT (1)			DYNAMIC IMPEDANCE	KNEE IMPEDANCE	LIMITING VOLTAGE	TEMPERATURE COEFFICIENT
	I_P@V_T=25V			Z_T@V_T=25V	Z_K@V_K=6.0V	V_L@I_L=0.8 I_P MIN	TC*
	mA			MΩ	KΩ	VOLTS	%/°C
	MIN	NOM	MAX	MIN	MIN	MAX	
CCLHM080	6.56	8.20	9.84	0.32	15	3.1	-0.25 TO -0.45
CCLHM100	8.00	10.0	12.0	0.17	6.0	3.5	-0.25 TO -0.45
CCLHM120	9.60	12.0	14.4	0.08	3.0	3.8	-0.25 TO -0.45
CCLHM150	12.0	15.0	18.0	0.03	2.0	4.3	-0.25 TO -0.45

* The Temperature Coefficient is measured between the following points: +25°C, + 50°C.

(1) TESTED USING THE PULSED METHOD. $\left(\text{PULSE WIDTH (ms)} = \frac{27.5}{I_P \text{ NOM (mA)}}\right)$

All dimensions in inches (mm).



Marking Codes:

CENTRAL TYPE NO.	BAND 1*	BAND 2	BAND 3
CCLHM080	BLACK	GREEN	YELLOW
CCLHM100	BLACK	ORANGE	PINK
CCLHM120	BLACK	ORANGE	WHITE
CCLHM150	BLACK	ORANGE	LIGHT BLUE

* Cathode Band

CCLM0035
THRU
CCLM5750

CURRENT LIMITING DIODE

SOD-80 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CCLM0035 Series types are silicon field effect current regulator diodes designed for applications requiring a constant current over a wide voltage range. These devices are manufactured in the cost effective SOD-80 double plug case which provides many benefits to the user including space savings and improved thermal characteritcs. Special selections of I_P (regulator current) are available for critical applications.

MAXIMUM RATINGS (T_L = 75°C)	**SYMBOL**		**UNITS**
Peak Operating Voltage	POV	100	V
Power Dissipation	P_D	800	mW
Operation and Storage Junction Temperature	T_J,T_{stg}	-65 to + 200	°C

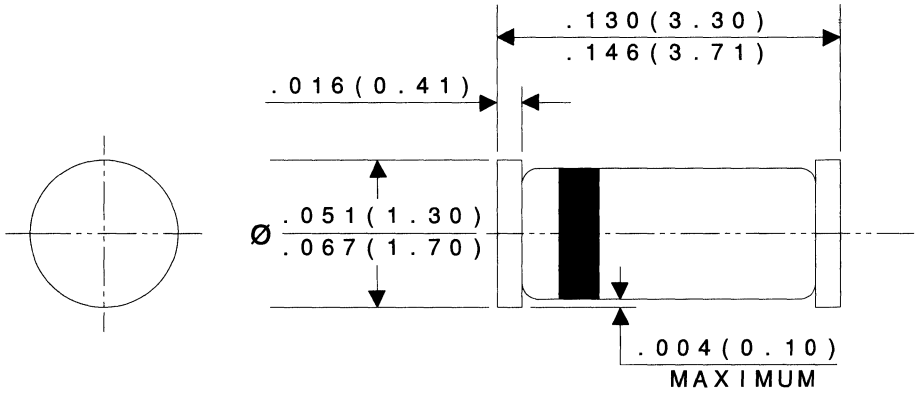
ELECTRICAL CHARACTERISTICS (T_A = 25°C)

TYPE NO.	REGULATOR CURRENT (1)			DYNAMIC IMPEDANCE	KNEE IMPEDANCE	LIMITING VOLTAGE	TEMPERATURE COEFFICIENT
	I_P @ V_T = 25V			Z_T @ V_T = 25V	Z_K @ V_K = 6.0V	V_L @ I_L = 0.8 I_P MIN	TC*
	mA			MΩ	MΩ	V	%/°C
	MIN	NOM	MAX	MIN	MIN	MAX	
CCLM0035	0.010	0.035	0.060	8.0	4.0	0.4	+2.10 TO +0.10
CCLM0130	0.050	0.130	0.210	6.0	2.0	0.6	+2.10 TO +0.10
CCLM0300	0.200	0.310	0.420	4.0	1.0	0.8	+0.40 TO -0.20
CCLM0500	0.400	0.515	0.630	2.0	0.5	1.1	+0.15 TO -0.25
CCLM0750	0.600	0.760	0.920	1.0	0.2	1.4	0.0 TO -0.32
CCLM1000	0.880	1.100	1.320	0.65	0.1	1.7	-0.10 TO -0.37
CCLM1500	1.280	1.500	1.720	0.45	0.07	2.0	-0.13 TO -0.40
CCLM2000	1.680	2.000	2.320	0.35	0.05	2.3	-0.15 TO -0.42
CCLM2700	2.280	2.690	3.100	0.30	0.03	2.7	-0.18 TO -0.45
CCLM3500	3.000	3.550	4.100	0.25	0.02	3.2	-0.20 TO -0.47
CCLM4500	3.900	4.500	5.100	0.20	0.01	3.7	-0.22 TO -0.50
CCLM5750	5.000	5.750	6.500	0.05	0.005	4.5	-0.25 TO -0.53

* The Temperature Coefficient is measured between the following points: +25°C, + 50°C.

(1) TESTED USING THE PULSED METHOD. $\left(\text{PULSE WIDTH (ms)} = \frac{27.5}{I_P \text{ NOM (mA)}}\right)$

All dimensions in inches (mm).



Marking Codes:

CENTRAL TYPE NO.	BAND 1*	BAND 2	BAND 3
CCLM0035	BLACK	LIGHT BLUE	WHITE
CCLM0130	BLACK	LIGHT BLUE	PINK
CCLM0300	BLACK	LIGHT BLUE	ORANGE
CCLM0500	BLACK	LIGHT BLUE	GREEN
CCLM0750	BLACK	LIGHT BLUE	DARK BLUE
CCLM1000	BLACK	GREEN	PINK
CCLM1500	BLACK	GREEN	ORANGE
CCLM2000	BLACK	GREEN	GREEN
CCLM2700	BLACK	GREEN	LIGHT BLUE
CCLM3500	BLACK	GREEN	DARK BLUE
CCLM4500	BLACK	GREEN	VIOLET
CCLM5750	BLACK	GREEN	WHITE

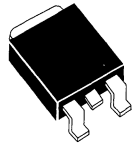
* Cathode Band

NEW

CJD31C NPN
CJD32C PNP

COMPLEMENTARY SILICON POWER TRANSISTOR

DPAK POWER!™



DPAK CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CJD31C, CJD32C types are Complementary Silicon Power Transistors manufactured by the epitaxial base process, mounted in a surface mount package designed for power amplifier and high speed switching applications.

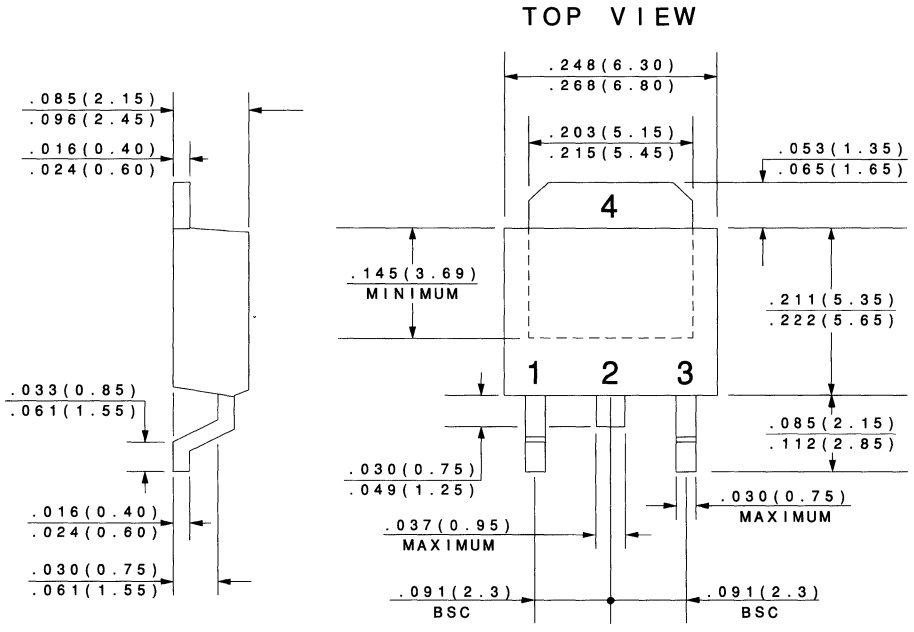
MAXIMUM RATINGS (T_C=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CEO}	100	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Continuous Collector Current	I_C	3.0	A
Peak Collector Current	I_{CM}	5.0	A
Base Current	I_B	1.0	A
Power Dissipation (T_C=25°C)	P_D	15	W
Power Dissipation (T_A=25°C)	P_D	1.56	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JC}	8.33	°C/W
Thermal Resistance	Θ_{JA}	80.1	°C/W

ELECTRICAL CHARACTERISTICS (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CEO}	V_{CE}=60V		50	μA
I_{CES}	V_{CE}=100V		20	μA
I_{EBO}	V_{EB}=5.0V		1.0	mA
BV_{CEO}	I_C=30mA	100		V
$V_{CE(SAT)}$	I_C=3.0A, I_B=375mA		1.2	V
$V_{BE(ON)}$	V_{CE}=4.0V, I_C=3.0A		1.8	V
h_{FE}	V_{CE}=4.0V, I_C=1.0A	25		
h_{FE}	V_{CE}=4.0V, I_C=3.0A	10	50	
f_T	V_{CE}=10V, I_C=500mA, f=1.0MHz	3.0		MHz
h_{fe}	V_{CE}=10V, I_C=500mA, f=1.0kHz	20		

All dimensions in inches (mm).



LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

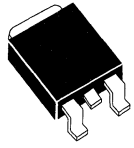
DATA SHEET

NEW

CJD41C NPN
CJD42C PNP

COMPLEMENTARY SILICON POWER TRANSISTOR

DPAK POWER!™



DPAK CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CJD41C, CJD42C types are Complementary Silicon Power Transistors manufactured by the epitaxial base process, mounted in a surface mount package designed for power amplifier and high speed switching applications.

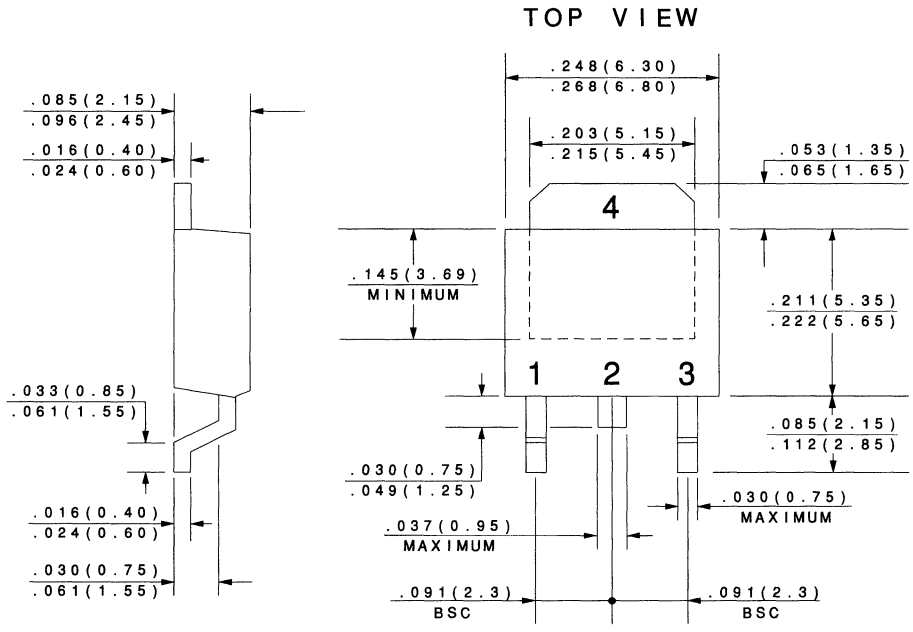
MAXIMUM RATINGS (T_C=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CEO}	100	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Continuous Collector Current	I_C	6.0	A
Peak Collector Current	I_{CM}	10	A
Base Current	I_B	2.0	A
Power Dissipation (T_C=25°C)	P_D	20	W
Power Dissipation (T_A=25°C)	P_D	1.75	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JC}	6.25	°C/W
Thermal Resistance	Θ_{JA}	71.4	°C/W

ELECTRICAL CHARACTERISTICS (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CEO}	V_{CE}=60V		50	μA
I_{CES}	V_{CE}=100V		10	μA
I_{EBO}	V_{EB}=5.0V		500	μA
BV_{CEO}	I_C=30mA	100		V
$V_{CE(SAT)}$	I_C=6.0A, I_B=600mA		1.5	V
$V_{BE(ON)}$	V_{CE}=4.0V, I_C=6.0A		2.0	V
h_{FE}	V_{CE}=4.0V, I_C=300mA	30		
h_{FE}	V_{CE}=4.0V, I_C=3.0A	15	75	
f_T	V_{CE}=10V, I_C=500mA, f=1.0MHz	3.0		MHz
h_{fe}	V_{CE}=10V, I_C=500mA, f=1.0kHz	20		

All dimensions in inches (mm).



LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

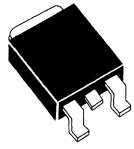
DATA SHEET

NEW

CJD47
CJD50

NPN SILICON
POWER TRANSISTOR

DPAK POWER!™



DPAK CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CJD47, CJD50 types are NPN Silicon Power Transistors manufactured in a surface mount package designed for high voltage applications such as power supplies and other switching applications.

MAXIMUM RATINGS (T_C=25°C)

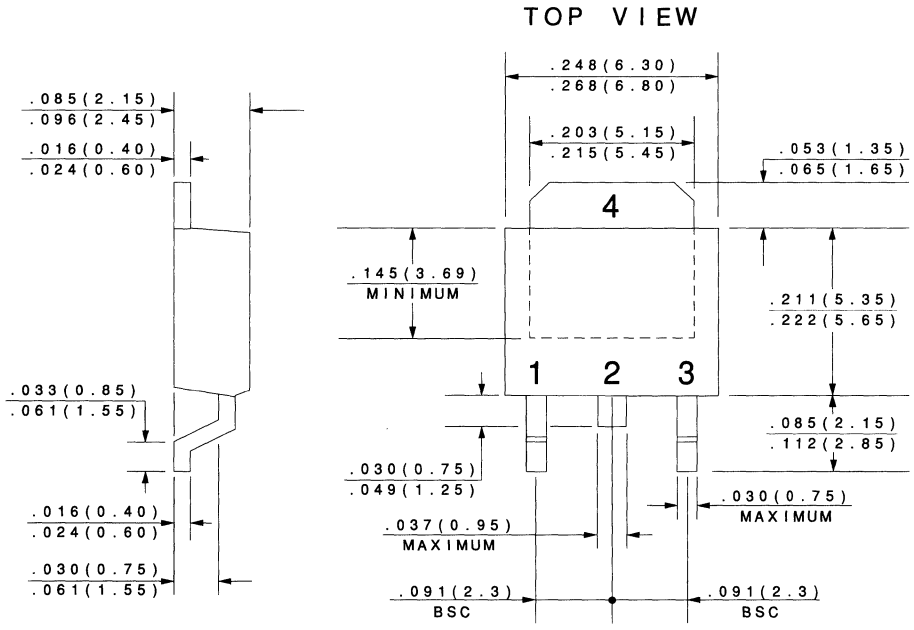
	SYMBOL	CJD47	CJD50	UNITS
Collector-Base Voltage	V_{CBO}	350	500	V
Collector-Emitter Voltage	V_{CEO}	250	400	V
Emitter-Base Voltage	V_{EBO}	5.0		V
Continuous Collector Current	I_C	1.0		A
Peak Collector Current	I_{CM}	2.0		A
Base Current	I_B	600		mA
Power Dissipation (T_C=25°C)	P_D	15		W
Power Dissipation (T_A=25°C)	P_D	1.56		W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150		°C
Thermal Resistance	Θ_{JC}	8.33		°C/W
Thermal Resistance	Θ_{JA}	80.1		°C/W

ELECTRICAL CHARACTERISTICS (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CEO}	V_{CE}=150V (CJD47)		200	μA
I_{CEO}	V_{CE}=300V (CJD50)		200	μA
I_{CES}	V_{CE}=350V (CJD47)		100	μA
I_{CES}	V_{CE}=500V (CJD50)		100	μA
I_{EBO}	V_{EB}=5.0V		1.0	mA
BV_{CEO}	I_C=30mA (CJD47)	250		V
BV_{CEO}	I_C=30mA (CJD50)	400		V
$V_{CE(SAT)}$	I_C=1.0A, I_B=200mA		1.0	V
$V_{BE(ON)}$	V_{CE}=10V, I_C=1.0A		1.5	V
h_{FE}	V_{CE}=10V, I_C=300mA	30	150	

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=10V, I_C=1.0A	10		
f_T	V_{CE}=10V, I_C=200mA, f=2.0MHz	10		MHz
h_{fe}	V_{CE}=10V, I_C=200mA, f=1.0kHz	25		

All dimensions in inches (mm).



LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

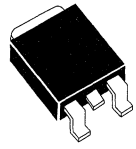
DATA SHEET

NEW

CJD112 NPN
CJD117 PNP

COMPLEMENTARY SILICON POWER DARLINGTON TRANSISTOR

DPAK POWER!™



DPAK CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CJD112, CJD117 types are Complementary Silicon Power Darlington Transistors manufactured in a surface mount package designed for low speed switching and amplifier applications.

MAXIMUM RATINGS (T_C=25°C)

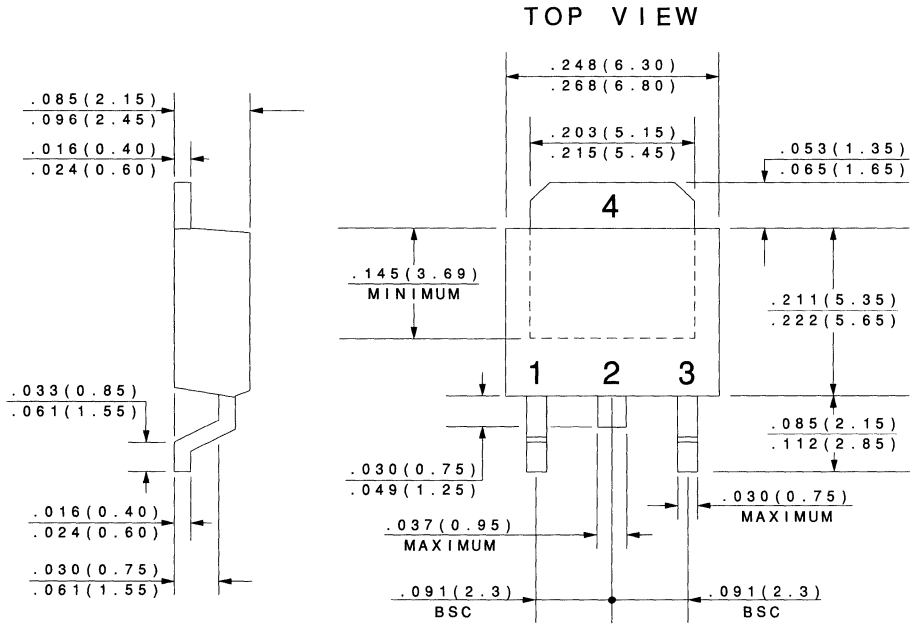
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CEO}	100	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Continuous Collector Current	I_C	2.0	A
Peak Collector Current	I_{CM}	4.0	A
Base Current	I_B	50	mA
Power Dissipation (T_C=25°C)	P_D	20	W
Power Dissipation (T_A=25°C)	P_D	1.75	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JC}	6.25	°C/W
Thermal Resistance	Θ_{JA}	71.4	°C/W

ELECTRICAL CHARACTERISTICS (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CEO}	V_{CE}=50V		20	μA
I_{CEV}	V_{CE}=80V, $V_{BE(off)}$=1.5V		10	μA
I_{CEV}	V_{CE}=80V, $V_{BE(off)}$=1.5V, T_C=125°C		500	μA
I_{CBO}	V_{CB}=80V		10	μA
I_{CBO}	V_{CB}=100V		20	μA
I_{EBO}	V_{EB}=5.0V		2.0	mA
BV_{CEO}	I_C=30mA		100	V
$V_{CE(SAT)}$	I_C=2.0A, I_B=8.0mA		2.0	V
$V_{CE(SAT)}$	I_C=4.0A, I_B=40mA		3.0	V
$V_{BE(SAT)}$	I_C=4.0A, I_B=40mA		4.0	V

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$V_{BE(ON)}$	V_{CE}=3.0V, I_C=2.0A		2.8	V
h_{FE}	V_{CE}=3.0V, I_C=0.5A	500		
h_{FE}	V_{CE}=3.0V, I_C=2.0A	1000	12000	
h_{FE}	V_{CE}=3.0V, I_C=4.0A	200		
f_T	V_{CE}=10V, I_C=750mA, f=1.0MHz	25		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=0.1MHz (CJD112)		100	pF
C_{ob}	V_{CB}=10V, I_E=0, f=0.1MHz (CJD117)		200	pF

All dimensions in inches (mm).



LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

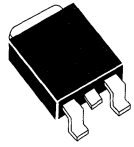
DATA SHEET

NEW

CJD122 NPN
CJD127 PNP

COMPLEMENTARY SILICON POWER DARLINGTON TRANSISTOR

DPAK POWER!™



DPAK CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CJD122, CJD127 types are Complementary Silicon Power Darlington Transistors manufactured in a surface mount package designed for low speed switching and amplifier applications.

MAXIMUM RATINGS (T_C=25°C)

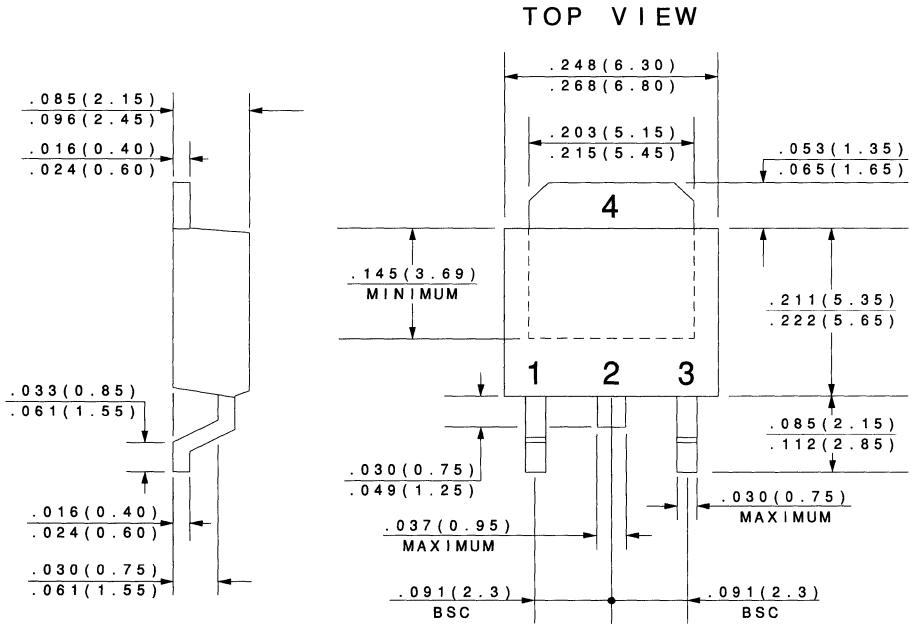
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CEO}	100	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Continuous Collector Current	I_C	8.0	A
Peak Collector Current	I_{CM}	16	A
Base Current	I_B	120	mA
Power Dissipation (T_C=25°C)	P_D	20	W
Power Dissipation (T_A=25°C)	P_D	1.75	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JC}	6.25	°C/W
Thermal Resistance	Θ_{JA}	71.4	°C/W

ELECTRICAL CHARACTERISTICS (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CEO}	V_{CE}=50V		10	μA
I_{CEV}	V_{CE}=100V, $V_{BE(off)}$=1.5V		10	μA
I_{CEV}	V_{CE}=100V, $V_{BE(off)}$=1.5V, T_C=125°C		500	μA
I_{CBO}	V_{CB}=100V		10	μA
I_{EBO}	V_{EB}=5.0V		2.0	mA
BV_{CEO}	I_C=30mA	100		V
$V_{CE(SAT)}$	I_C=4.0A, I_B=16mA		2.0	V
$V_{CE(SAT)}$	I_C=8.0A, I_B=80mA		4.0	V
$V_{BE(SAT)}$	I_C=8.0A, I_B=80mA		4.5	V

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$V_{BE(ON)}$	V_{CE}=4.0V, I_C=4.0A		2.8	V
h_{FE}	V_{CE}=4.0V, I_C=4.0A	1000	12000	
h_{FE}	V_{CE}=4.0V, I_C=8.0A	100		
f_T	V_{CE}=4.0V, I_C=3.0A, f=1.0MHz	4.0		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz (CJD122)		200	pF
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz (CJD127)		300	pF
h_{fe}	V_{CE}=4.0V, I_C=3.0A, f=1.0kHz		300	

All dimensions in inches (mm).



LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

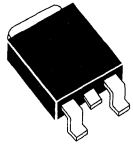
DATA SHEET

NEW

CJD200 NPN
CJD210 PNP

COMPLEMENTARY SILICON POWER TRANSISTOR

DPAK POWER ! ™



DPAK CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CJD200, CJD210 types are Complementary Silicon Power Transistors manufactured in a surface mount package designed for high current amplifier applications.

MAXIMUM RATINGS (T_C=25°C)

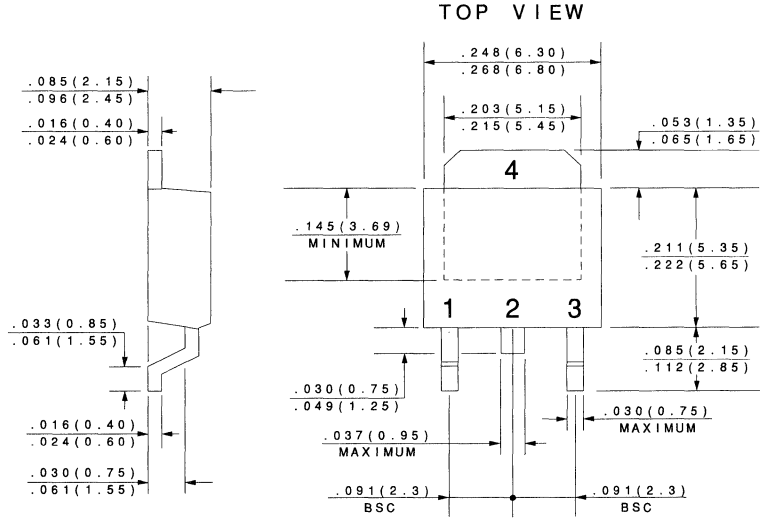
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	40	V
Collector-Emitter Voltage	V_{CEO}	25	V
Emitter-Base Voltage	V_{EBO}	8.0	V
Continuous Collector Current	I_C	5.0	A
Peak Collector Current	I_{CM}	10	A
Base Current	I_B	1.0	A
Power Dissipation (T_C=25°C)	P_D	12.5	W
Power Dissipation (T_A=25°C)	P_D	1.4	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JC}	10	°C/W
Thermal Resistance	Θ_{JA}	89.3	°C/W

ELECTRICAL CHARACTERISTICS (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=40V		100	nA
I_{CBO}	V_{CB}=40V, T_C=125°C		100	μA
I_{EBO}	V_{EB}=8.0V		100	nA
BV_{CEO}	I_C=10mA	25		V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		0.3	V
$V_{CE(SAT)}$	I_C=2.0A, I_B=200mA		0.75	V
$V_{CE(SAT)}$	I_C=5.0A, I_B=1.0A		1.8	V
$V_{BE(SAT)}$	I_C=5.0A, I_B=1.0A		2.5	V
$V_{BE(ON)}$	V_{CE}=1.0V, I_C=2.0A		1.6	V
h_{FE}	V_{CE}=1.0V, I_C=500mA	70		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=1.0V, I_C=2.0A	45	180	
h_{FE}	V_{CE}=2.0V, I_C=5.0A	10		
f_T	V_{CE}=10V, I_C=100mA, f=10MHz	65		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=0.1MHz (CJD200)		80	pF
C_{ob}	V_{CB}=10V, I_E=0, f=0.1MHz (CJD210)		120	pF

All dimensions in inches (mm).



DATA SHEET

LEAD CODE:

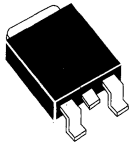
1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

NEW

CJD340 NPN
CJD350 PNP

COMPLEMENTARY SILICON POWER TRANSISTOR

DPAK POWER ™



DPAK CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CJD340, CJD350 types are Complementary Silicon Power Transistors manufactured in a surface mount package designed for high voltage general purpose applications.

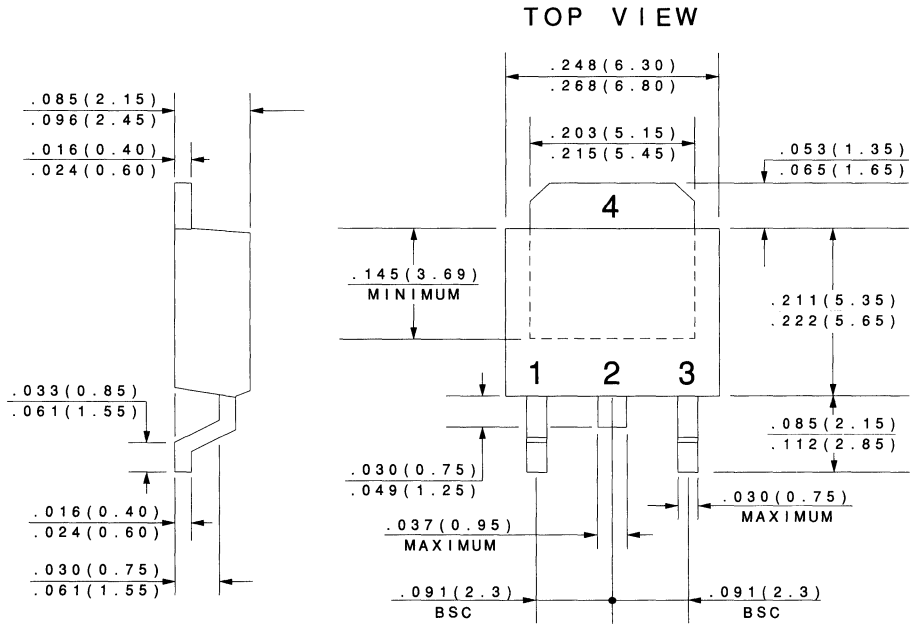
MAXIMUM RATINGS (T_C=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	300	V
Collector-Emitter Voltage	V_{CEO}	300	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Continuous Collector Current	I_C	500	mA
Peak Collector Current	I_{CM}	750	mA
Power Dissipation (T_C=25°C)	P_D	15	W
Power Dissipation (T_A=25°C)	P_D	1.56	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JC}	8.33	°C/W
Thermal Resistance	Θ_{JA}	80.1	°C/W

ELECTRICAL CHARACTERISTICS (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=300V		100	μA
I_{EBO}	V_{EB}=3.0V		100	μA
BV_{CEO}	I_C=1.0mA	300		V
h_{FE}	V_{CE}=10V, I_C=50mA	30	240	

All dimensions in inches (mm).



LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

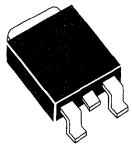
DATA SHEET

NEW

CJD2955 PNP
CJD3055 NPN

COMPLEMENTARY SILICON POWER TRANSISTOR

DPAK POWER I™



DPAK CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CJD2955, CJD3055 types are Complementary Silicon Power Transistors manufactured by the epitaxial base process, mounted in a surface mount package designed for high current amplifier and switching applications.

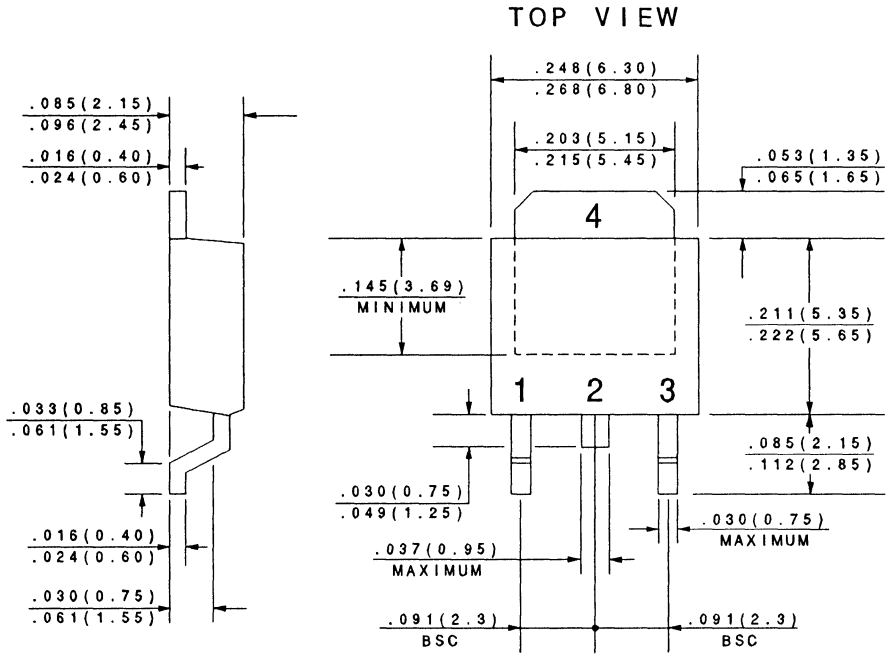
MAXIMUM RATINGS (T_C=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	70	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	10	A
Base Current	I_B	6.0	A
Power Dissipation (T_C=25°C)	P_D	20	W
Power Dissipation (T_A=25°C)	P_D	1.75	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JC}	6.25	°C/W
Thermal Resistance	Θ_{JA}	71.4	°C/W

ELECTRICAL CHARACTERISTICS (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CEO}	V_{CE}=30V		50	μA
I_{CEV}	V_{CE}=70V, $V_{BE(off)}$=1.5V		20	μA
I_{CEV}	V_{CE}=70V, $V_{BE(off)}$=1.5V, T_C=150°C		2.0	mA
I_{CBO}	V_{CB}=70V		20	μA
I_{CBO}	V_{CB}=70V, T_C=150°C		2.0	mA
I_{EBO}	V_{EB}=5.0V		500	μA
BV_{CEO}	I_C=30mA	60		V
$V_{CE(SAT)}$	I_C=4.0A, I_B=400mA		1.1	V
$V_{CE(SAT)}$	I_C=10A, I_B=3.3A		8.0	V
$V_{BE(ON)}$	V_{CE}=4.0V, I_C=4.0A		1.8	V
h_{FE}	V_{CE}=4.0V, I_C=4.0A	20	100	
h_{FE}	V_{CE}=4.0V, I_C=10A	5.0		
f_T	V_{CE}=10V, I_C=500mA, f=1.0MHz	2.0		MHz

All dimensions in inches (mm).



LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

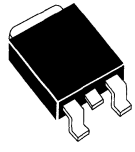
DATA SHEET

NEW

CJD13003

NPN SILICON
POWER TRANSISTOR

DPAK POWER I™



DPAK CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CJD13003 type is an NPN Silicon Power Transistors manufactured in a surface mount package designed for high voltage, high speed power switching inductive applications.

MAXIMUM RATINGS (T_C=25°C)

	SYMBOL		UNITS
Collector-Emitter Voltage	V_{CEV}	700	V
Collector-Emitter Voltage	V_{CEO}	400	V
Emitter-Base Voltage	V_{EBO}	9.0	V
Continuous Collector Current	I_C	1.5	A
Peak Collector Current	I_{CM}	3.0	A
Continuous Base Current	I_B	750	mA
Peak Base Current	I_{BM}	1.5	A
Continuous Emitter Current	I_E	2.25	A
Peak Emitter Current	I_{EM}	4.5	A
Power Dissipation (T_C=25°C)	P_D	15	W
Power Dissipation (T_A=25°C)	P_D	1.56	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JC}	8.33	°C/W
Thermal Resistance	Θ_{JA}	80.1	°C/W

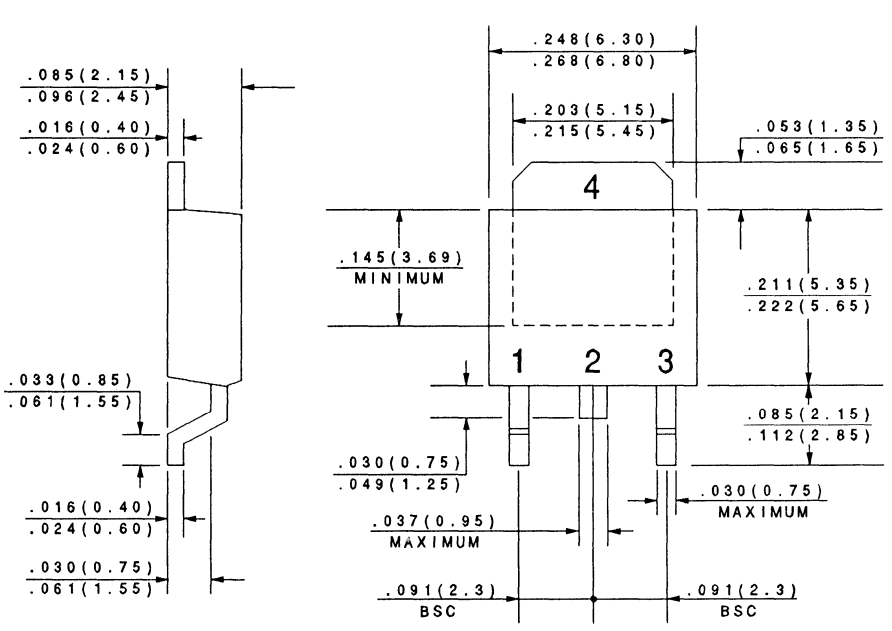
ELECTRICAL CHARACTERISTICS (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{CEV}	V_{CE}=700V, $V_{BE(off)}$=1.5V			100	μA
I_{CEV}	V_{CE}=700V, $V_{BE(off)}$=1.5V, T_C=100°C			2.0	mA
I_{EBO}	V_{EB}=9.0V			1.0	mA
BV_{CEO}	I_C=10mA	400			V
$V_{CE(SAT)}$	I_C=500mA, I_B=100mA			0.5	V
$V_{CE(SAT)}$	I_C=1.0A, I_B=250mA			1.0	V
$V_{CE(SAT)}$	I_C=1.5A, I_B=500mA			3.0	V
$V_{CE(SAT)}$	I_C=1.0A, I_B=250mA, T_C=100°C			1.0	V

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$V_{BE(SAT)}$	I_C=500mA, I_B=100mA			1.0	V
$V_{BE(SAT)}$	I_C=1.0A, I_B=250mA			1.2	V
$V_{BE(SAT)}$	I_C=1.0A, I_B=250mA, T_C=100°C			1.1	V
h_{FE}	V_{CE}=2.0V, I_C=500mA	8.0		40	
h_{FE}	V_{CE}=2.0V, I_C=1.0A	5.0		25	
f_T	V_{CE}=10V, I_C=100mA, f=1.0MHz	4.0			MHz
C_{ob}	V_{CB}=10V, I_E=0, f=0.1MHz		20		pF
t_d	V_{CC}=125V, I_C=1.0A, I_{B1}=I_{B2}=200mA (1)			0.1	µs
t_r	V_{CC}=125V, I_C=1.0A, I_{B1}=I_{B2}=200mA (1)			1.0	µs
t_s	V_{CC}=125V, I_C=1.0A, I_{B1}=I_{B2}=200mA (1)			4.0	µs
t_f	V_{CC}=125V, I_C=1.0A, I_{B1}=I_{B2}=200mA (1)			0.7	µs

(1) tp=25µs, Duty Cycle≤1%

All dimensions in inches (mm).



LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

DATA SHEET

NEW

CLL457A
CLL459A

LOW LEAKAGE
SILICON DIODE

SOD-80 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CLL457A, CLL459A types are silicon planar diodes, manufactured in a hermetically sealed glass surface mount package, designed for low leakage applications.
Marking Code: Cathode band.

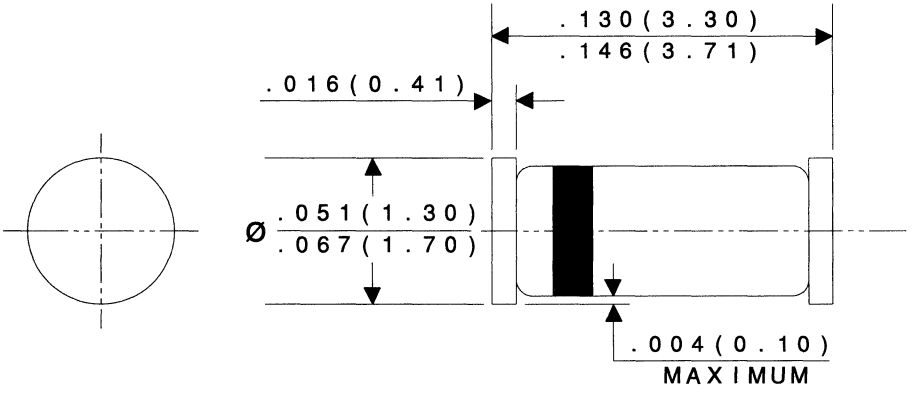
MAXIMUM RATINGS: (T_A=25°C)

	SYMBOL	CLL457A	CLL459A	UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	70	200	V
Peak Working Reverse Voltage	V_{RWM}	60	175	V
Average Forward Current	I_O	200		mA
Forward Steady-State Current	I_F	500		mA
Peak Forward Surge Current (1.0μs pulse)	I_{FSM}	4.0		A
Power Dissipation	P_D	500		mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +200		°C
Thermal Resistance	Θ_{JA}	350		°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

		CLL457A		CLL459A		
SYMBOL	TEST CONDITIONS	MIN	MAX	MIN	MAX	UNITS
BV_R	I_R=100μA	70		200		V
I_R	V_R=Rated V_{RWM}		25		25	nA
I_R	V_R=Rated V_{RWM}, T_A=150°C		5.0		5.0	μA
V_F	I_F=100mA		1.0		1.0	V
C_T	V_R=0, f=1.0MHz		6.0		6.0	pF

All dimensions in inches (mm).



DATA SHEET

CLL914

HIGH SPEED SWITCHING DIODE

SOD-80 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CLL914 type is an ultra-high speed silicon switching diode manufactured by the epitaxial planar process, in a hermetically sealed glass surface mount package, designed for high speed switching applications.

Marking code: Cathode Band.

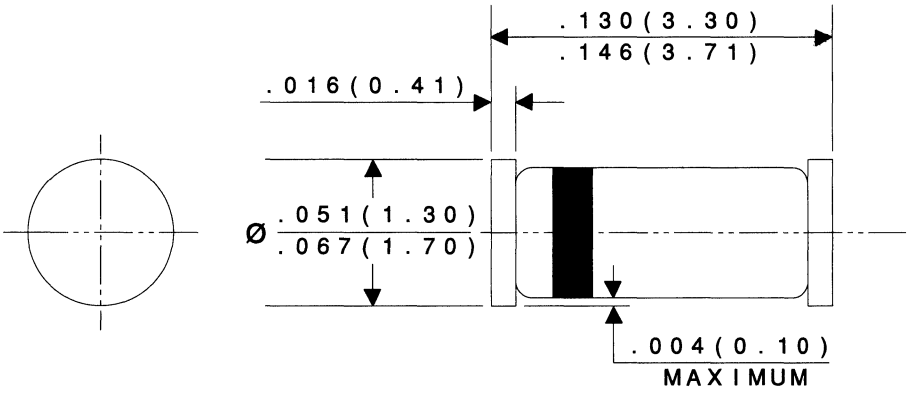
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Continuous Reverse Voltage	V_R	75	V
Peak Repetitive Reverse Voltage	V_{RRM}	100	V
Continuous Forward Current	I_F	250	mA
Peak Repetitive Forward Current	I_{FRM}	250	mA
Forward Surge Current, tp=1 μsec.	I_{FSM}	4000	mA
Forward Surge Current, tp=1 sec.	I_{FSM}	1000	mA
Power Dissipation	P_D	500	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +200	°C
Thermal Resistance	Θ_{JA}	350	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
V_{BR}	I_R=100μA	100		V
I_R	V_R=20V		25	nA
I_R	V_R=75V		5.0	μA
V_F	I_F=10mA		1.0	V
C_T	V_R=0, f=1 MHz		4.0	pF
t_{rr}	I_R=I_F=10mA, R_L=100Ω, Rec. to 1.0mA		4.0	ns

All dimensions in inches (mm).



CLL2003

HIGH VOLTAGE SWITCHING DIODE

SOD-80 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CLL2003 type is a silicon switching diode manufactured by the epitaxialplanar process, designed for applications requiring high voltage capability.
Marking Code: Cathode band.

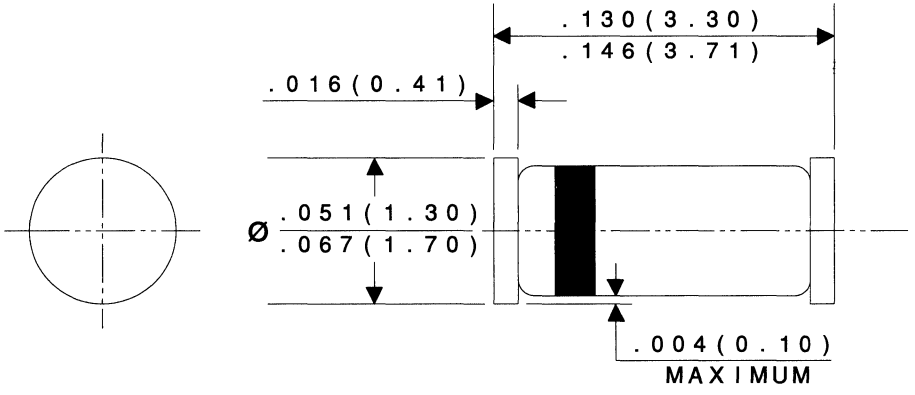
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Continuous Reverse Voltage	V_R	250	V
Peak Repetitive Reverse Voltage	V_{RRM}	250	V
Average Forward Current	I_O	200	mA
Continuous Forward Current	I_F	250	mA
Peak Repetitive Forward Current	I_{FRM}	625	mA
Forward Surge Current, tp=1 μs	I_{FSM}	4000	mA
Forward Surge Current, tp=1 s	I_{FSM}	1000	mA
Power Dissipation	P_D	500	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +200	°C
Thermal Resistance	Θ_{JA}	350	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
BV_R	I_R=100μA	250		V
I_R	V_R=200V		100	nA
I_R	V_R=200V, T_A=150°C		100	μA
V_F	I_F=100mA		1.00	V
V_F	I_F=200mA		1.25	V
C_T	V_R=0, f=1 MHz		5.0	pF
t_{rr}	I_F=I_R=30mA, RECOV. TO 3.0mA, R_L=100Ω		50	ns

All dimensions in inches (mm).



DATA SHEET

R1

NEW

CLL3595

LOW LEAKAGE SILICON DIODE

SOD-80 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CLL3595 type is an epitaxial planar silicon diode, manufactured in a hermetically sealed glass surface mount package, designed for low leakage, high conductance applications.
Marking Code: Cathode Band.

MAXIMUM RATINGS: (T_A=25°C)

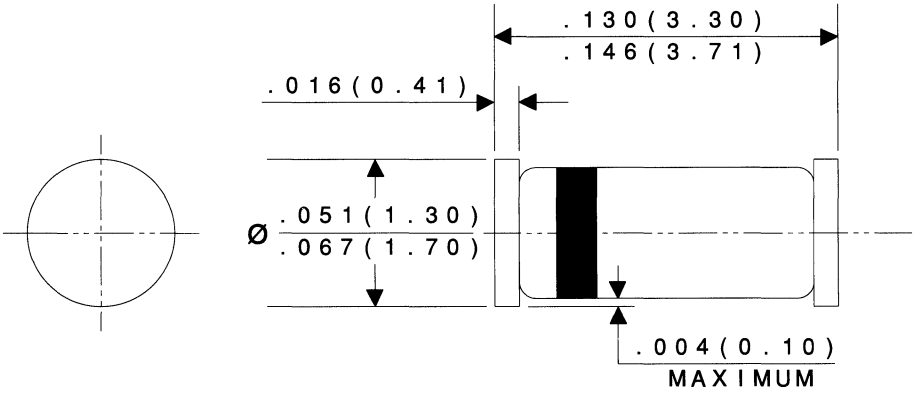
	SYMBOL		UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	150	V
Peak Working Reverse Voltage	V_{RWM}	125	V
Average Forward Current	I_O	150	mA
Forward Steady-State Current	I_F	225	mA
Recurrent Peak Forward Current	i_f	600	mA
Peak Forward Surge Current (1.0s pulse)	I_{FSM}	500	mA
Peak Forward Surge Current (1.0μs pulse)	I_{FSM}	4.0	A
Power Dissipation	P_D	500	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +200	°C
Thermal Resistance	Θ_{JA}	350	°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
BV_R	I_R=100μA	150		V
I_R	V_R=125V		1.0	nA
I_R	V_R=125V, T_A=125°C		500	nA
I_R	V_R=125V, T_A=150°C		3.0	μA
I_R	V_R=30V, T_A=125°C		300	nA
V_F	I_F=1.0mA	0.52	0.68	V
V_F	I_F=5.0mA	0.60	0.75	V
V_F	I_F=10mA	0.65	0.80	V
V_F	I_F=50mA	0.75	0.88	V
V_F	I_F=100mA	0.79	0.92	V
V_F	I_F=200mA	0.83	1.00	V

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
C_T	V_R=0, f=1.0MHz		8.0	pF
t_{rr}	V_R=3.5V, I_f=10mA, R_L=1.0kΩ		3.0	µs

All dimensions in inches (mm).



DATA SHEET

CLL4150

HIGH SPEED SWITCHING DIODE

SOD-80 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CLL4150 type is an ultra-high speed silicon switching diode manufactured by the epitaxial planar process, in a hermetically sealed glass surface mount package, designed for high speed switching applications.
Marking Code: Cathode Band.

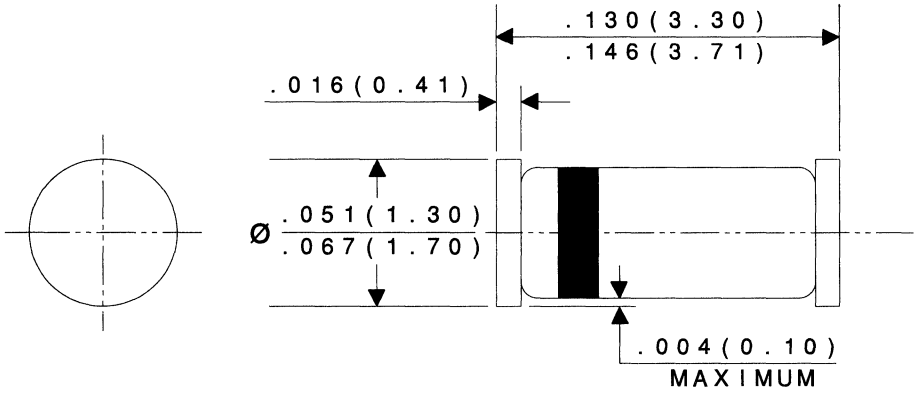
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Continuous Reverse Voltage	V_R	50	V
Peak Repetitive Reverse Voltage	V_{RRM}	50	V
Continuous Forward Current	I_F	300	mA
Peak Repetitive Forward Current	I_{FRM}	600	mA
Forward Surge Current, tp=1 μsec.	I_{FSM}	4000	mA
Forward Surge Current, tp=1 sec.	I_{FSM}	1000	mA
Power Dissipation	P_D	500	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +200	°C
Thermal Resistance	Θ_{JA}	350	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
BV_R	I_R=5.0μA	75		V
I_R	V_R=50V		100	nA
V_F	I_F=1.0mA	0.54	0.62	V
V_F	I_F=10mA	0.66	0.74	V
V_F	I_F=50mA	0.76	0.86	V
V_F	I_F=100mA	0.82	0.92	V
V_F	I_F=200mA	0.87	1.0	V
C_T	V_R=0, f=1 MHz		4.0	pF
t_{rr}	I_R=I_F=10mA, R_L=100Ω, Rec. to 1.0mA		4.0	ns

All dimensions in inches (mm).



DATA SHEET

R1

CLL4448

HIGH SPEED SWITCHING DIODE

SOD-80 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CLL4448 type is a ultra-high speed silicon switching diode manufactured by the epitaxial planar process, in a hermetically sealed glass surface mount package, designed for high speed switching applications.

Marking Code: Cathode Band.

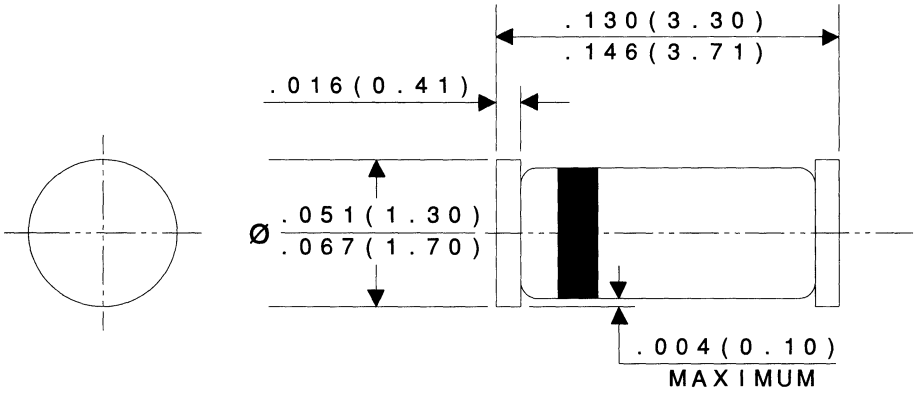
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Continuous Reverse Voltage	V_R	75	V
Peak Repetitive Reverse Voltage	V_{RRM}	100	V
Continuous Forward Current	I_F	250	mA
Peak Repetitive Forward Current	I_{FRM}	250	mA
Forward Surge Current, tp=1 μsec.	I_{FSM}	4000	mA
Forward Surge Current, tp=1 sec.	I_{FSM}	1000	mA
Power Dissipation	P_D	500	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +200	°C
Thermal Resistance	Θ_{JA}	350	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
V_{BR}	I_R=5.0μA	75		V
V_{BR}	I_R=100μA	100		V
I_R	V_R=20V		25	nA
V_F	I_F=5.0mA	0.62	0.72	V
V_F	I_F=100mA		1.0	V
C_T	V_R=0, f=1 MHz		4.0	pF
t_{rr}	I_R=I_F=10mA, R_L=100Ω, Rec. to 1.0mA		4.0	ns

All dimensions in inches (mm).



DATA SHEET

R1

CLL4625
THRU
CLL4627

500mW LOW NOISE ZENER DIODE
5% TOLERANCE

SOD-80 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CLL4625 Series Silicon Zener Diode is a high quality voltage regulator designed for low leakage, low current and low noise applications.
Marking Code: Cathode Band

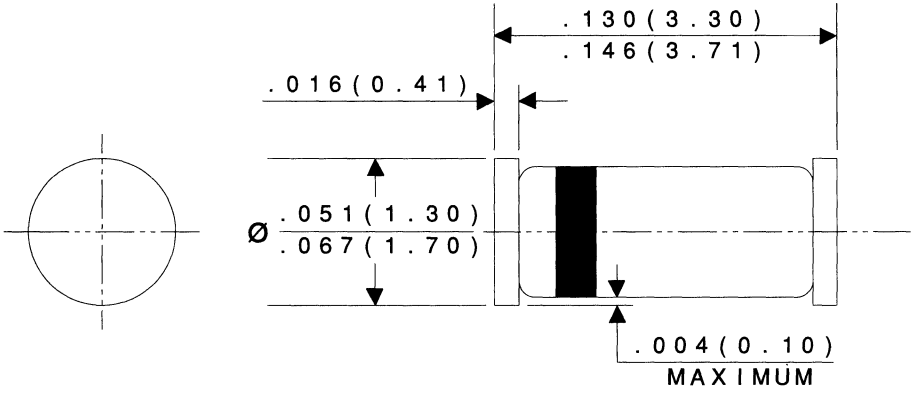
ABSOLUTE MAXIMUM RATINGS	**SYMBOL**		**UNITS**
Power Dissipation (@ T_A=25°C)	P_D	500	mW
Operating and Storage Temperature	T_J,T_{stg}	-65 to +200	°C

ELECTRICAL CHARACTERISTICS

(T_A=25°C) V_F=1.0V MAX @ I_F = 200mA FOR ALL TYPES.

TYPE	Zener Voltage V_Z @ I_{ZT}	Test Current I_{ZT}	Maximum Zener Impedance Z_{ZT} @ I_{ZT}	Maximum Reverse Leakage Current I_R @ V_R		Maximum Zener Current I_{ZM}	Maximum Noise Density N_D @ I_{ZT}=250μA
	Volts	μA	Ω	μA	Volts	mA	μV/√Hz
CLL4625	5.1	250	1500	10	3.0	55	2.0
CLL4626	5.6	250	1400	10	4.0	50	4.0
CLL4627	6.2	250	1200	10	5.0	45	5.0

All dimensions in inches (mm).



R1

CLL4689
THRU
CLL4714

500mW LOW LEVEL ZENER DIODE
5% TOLERANCE

SOD-80 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CLL4689 Series Silicon Zener Diode is a high quality voltage regulator designed for applications requiring an extremely low operating current and low leakage.
Marking Code: Cathode Band

ABSOLUTE MAXIMUM RATINGS

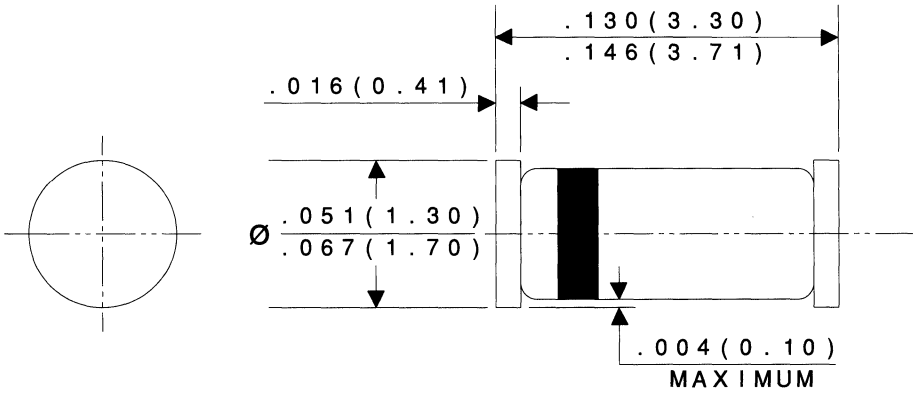
	SYMBOL		UNITS
Power Dissipation (@ T_A = 50°C)	P_D	500	mW
Operating and Storage Temperature	T_J, T_{STG}	-65 to +200	°C

ELECTRICAL CHARACTERISTICS
(T_A=25°C) V_F=1.5V MAX @ I_F=100mA FOR ALL TYPES

Type No.	Nominal Zener Voltage V_Z @ I_{ZT}	Test Current I_{ZT}	Maximum Reverse Leakage Current I_R @ V_R		Maximum Voltage Change* ΔV_Z	Maximum Zener Current I_{ZM}
	Volts	µA	µA	Volts	Volts	mA
CLL4689	5.1	50	10	3.0	0.97	55
CLL4690	5.6	50	10	4.0	0.96	50
CLL4691	6.2	50	10	5.0	0.95	45
CLL4692	6.8	50	10	5.1	0.90	35
CLL4693	7.5	50	10	5.7	0.75	31.8
CLL4694	8.2	50	1.0	6.2	0.50	29
CLL4695	8.7	50	1.0	6.6	0.10	27.6
CLL4696	9.1	50	1.0	6.9	0.08	26.2
CLL4697	10	50	1.0	7.6	0.10	24.8
CLL4698	11	50	0.05	8.4	0.11	21.6
CLL4699	12	50	0.05	9.1	0.12	20.4
CLL4700	13	50	0.05	9.8	0.13	19
CLL4701	14	50	0.05	10.6	0.14	17.5
CLL4702	15	50	0.05	11.4	0.15	16.3
CLL4703	16	50	0.05	12.1	0.16	15.4
CLL4704	17	50	0.05	12.9	0.17	14.5
CLL4705	18	50	0.05	13.6	0.18	13.2
CLL4706	19	50	0.05	14.4	0.19	12.5
CLL4707	20	50	0.01	15.2	0.20	11.9
CLL4708	22	50	0.01	16.7	0.22	10.8
CLL4709	24	50	0.01	18.2	0.24	9.9
CLL4710	25	50	0.01	19.0	0.25	9.5
CLL4711	27	50	0.01	20.4	0.27	8.8
CLL4712	28	50	0.01	21.2	0.28	8.5
CLL4713	30	50	0.01	22.8	0.30	7.9
CLL4714	33	50	0.01	25.0	0.33	7.2

* $\Delta V_Z = V_Z$@100µA MINUS V_Z @ 10µA.

All dimensions in inches (mm).



DATA SHEET

R1

CLL4729A THRU CLL4764A

1.0W ZENER DIODE 5% TOLERANCE

MELF CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CLL4729A Series Silicon Zener Diode is a high quality voltage regulator for use in surface mount industrial, commercial, entertainment and computer applications.

Marking Code: Cathode Band

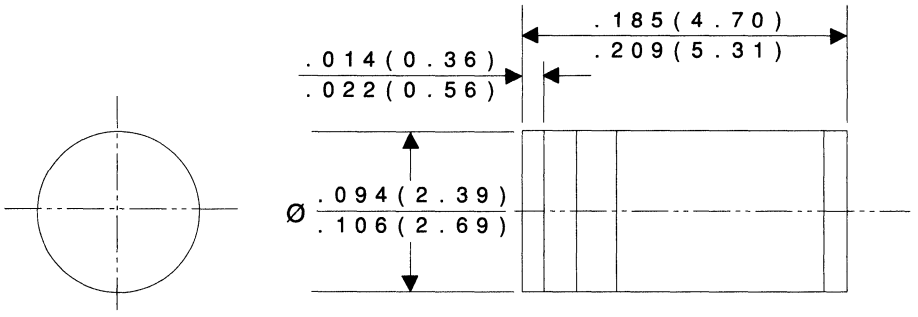
ABSOLUTE MAXIMUM RATINGS	**SYMBOL**		**UNITS**
Power Dissipation	P_D	1.0	W
Operating and Storage Temperature	T_J, T_{stg}	-65 to +200	°C

ELECTRICAL CHARACTERISTICS (T_A=25°C), V_F=1.2MAX @ I_F = 200mA FOR ALL TYPES.

TYPE NO.	ZENER VOLTAGE V_Z @ I_{Z1}	TEST CURRENT I_{Z1}	MAXIMUM ZENER IMPEDANCE Z_{Z1} @ I_{Z1}	Z_{Z2} @ I_{Z2}		MAXIMUM REVERSE CURRENT I_R @ V_R		MAXIMUM DC CURRENT I_{ZM}
	VOLTS	mA	Ω	Ω	mA	μA	VOLTS	mA
CLL4729A	3.6	69	10	400	1.0	100	1.0	1260
CLL4730A	3.9	64	9.0	400	1.0	50	1.0	1190
CLL4731A	4.3	58	9.0	400	1.0	10	1.0	1070
CLL4732A	4.7	53	8.0	500	1.0	10	1.0	970
CLL4733A	5.1	49	7.0	550	1.0	10	1.0	890
CLL4734A	5.6	45	5.0	600	1.0	10	2.0	810
CLL4735A	6.2	41	2.0	700	1.0	10	3.0	730
CLL4736A	6.8	37	3.5	700	1.0	10	4.0	660
CLL4737A	7.5	34	4.0	700	0.5	10	5.0	605
CLL4738A	8.2	31	4.5	700	0.5	10	6.0	550
CLL4739A	9.1	28	5.0	700	0.5	10	7.0	500
CLL4740A	10	25	7.0	700	0.25	10	7.6	454
CLL4741A	11	23	8.0	700	0.25	5.0	8.4	414
CLL4742A	12	21	9.0	700	0.25	5.0	9.1	380
CLL4743A	13	19	10	700	0.25	5.0	9.9	344
CLL4744A	15	17	14	700	0.25	5.0	11.4	304
CLL4745A	16	15.5	16	700	0.25	5.0	12.2	285
CLL4746A	18	14	20	750	0.25	5.0	13.7	250
CLL4747A	20	12.5	22	750	0.25	5.0	15.2	225
CLL4748A	22	11.5	23	750	0.25	5.0	16.7	205
CLL4749A	24	10.5	25	750	0.25	5.0	18.2	190
CLL4750A	27	9.5	35	750	0.25	5.0	20.6	170
CLL4751A	30	8.5	40	1000	0.25	5.0	22.8	150
CLL4752A	33	7.5	45	1000	0.25	5.0	25.1	135
CLL4753A*	36	7.0	50	1000	0.25	5.0	27.4	125
CLL4754A*	39	6.5	60	1000	0.25	5.0	29.7	115
CLL4755A*	43	6.0	70	1500	0.25	5.0	32.7	110
CLL4756A*	47	5.5	80	1500	0.25	5.0	35.8	95
CLL4757A*	51	5.0	95	1500	0.25	5.0	38.8	90
CLL4758A*	56	4.5	110	2000	0.25	5.0	42.6	80
CLL4759A*	62	4.0	125	2000	0.25	5.0	47.1	70
CLL4760A*	68	3.7	150	2000	0.25	5.0	51.7	65
CLL4761A*	75	3.3	175	2000	0.25	5.0	56	60
CLL4762A*	82	3.0	200	3000	0.25	5.0	62.2	55
CLL4763A*	91	2.8	250	3000	0.25	5.0	69.2	50
CLL4764A*	100	2.5	350	3000	0.25	5.0	76	45

* Available on special order only, please consult factory.

All dimensions in inches (mm).



DATA SHEET

R1

CLL5226B THRU CLL5257B

500 mW ZENER DIODE
5% TOLERANCE

SOD-80 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

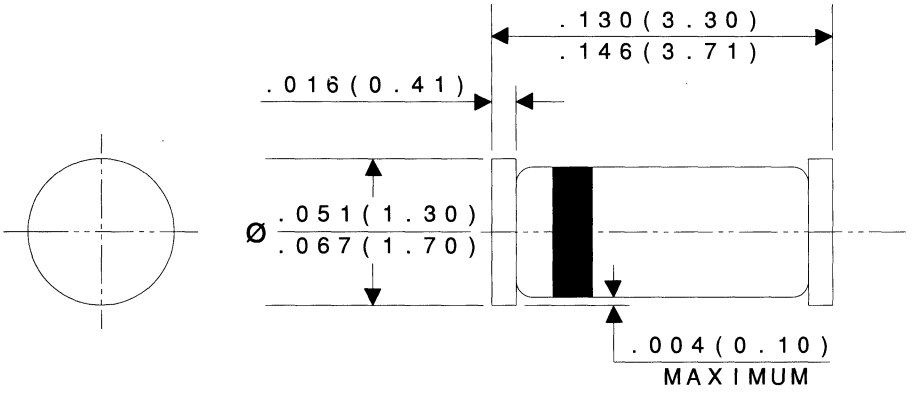
The CENTRAL SEMICONDUCTOR CLL5226B Series Silicon Zener Diode is a high quality voltage regulator for use in industrial, commercial, entertainment and computer applications. Higher voltage devices are available on special order.
Marking Code: Cathode Band

ABSOLUTE MAXIMUM RATINGS	**SYMBOL**		**UNITS**
Power Dissipation (@ T_A = 50°C)	P_D	500	mW
Operating and Storage Temperature	T_J, T_{stg}	-65 to +200	°C

ELECTRICAL CHARACTERISTICS (T_A=25°C), V_F=1.1V MAX @ I_F=200mA FOR ALL TYPES.

TYPE NO.	ZENER VOLTAGE V_Z @ I_{ZT}	TEST CURRENT I_{ZT}	Maximum Zener Impedance Z_{ZT} @ I_{ZT}		Z_{ZK} @ I_{ZK}	Maximum Reverse Current I_R @ V_R		MAXIMUM ZENER VOLTAGE TEMPERATURE COEFFICIENT θV_Z
	VOLTS	mA	Ω	Ω	mA	μA	VOLTS	%/°C
CLL5226B	3.3	20	28	1600	0.25	25	1.0	-0.070
CLL5227B	3.6	20	24	1700	0.25	15	1.0	-0.065
CLL5228B	3.9	20	23	1900	0.25	10	1.0	-0.060
CLL5229B	4.3	20	22	2000	0.25	5.0	1.0	±0.055
CLL5230B	4.7	20	19	1900	0.25	5.0	2.0	±0.030
CLL5231B	5.1	20	17	1600	0.25	5.0	2.0	±0.030
CLL5232B	5.6	20	11	1600	0.25	5.0	3.0	+0.038
CLL5233B	6.0	20	7.0	1600	0.25	5.0	3.5	+0.038
CLL5234B	6.2	20	7.0	1000	0.25	5.0	4.0	+0.045
CLL5235B	6.8	20	5.0	750	0.25	3.0	5.0	+0.050
CLL5236B	7.5	20	6.0	500	0.25	3.0	6.0	+0.058
CLL5237B	8.2	20	8.0	500	0.25	3.0	6.5	+0.062
CLL5238B	8.7	20	8.0	600	0.25	3.0	6.5	+0.065
CLL5239B	9.1	20	10	600	0.25	3.0	7.0	+0.068
CLL5240B	10	20	17	600	0.25	3.0	8.0	+0.075
CLL5241B	11	20	22	600	0.25	2.0	8.4	+0.076
CLL5242B	12	20	30	600	0.25	1.0	9.1	+0.077
CLL5243B	13	9.5	13	600	0.25	0.5	9.9	+0.079
CLL5244B	14	9.0	15	600	0.25	0.1	10	+0.082
CLL5245B	15	8.5	16	600	0.25	0.1	11	+0.082
CLL5246B	16	7.8	17	600	0.25	0.1	12	+0.083
CLL5247B	17	7.4	19	600	0.25	0.1	13	+0.084
CLL5248B	18	7.0	21	600	0.25	0.1	14	+0.085
CLL5249B	19	6.6	23	600	0.25	0.1	14	+0.086
CLL5250B	20	6.2	25	600	0.25	0.1	15	+0.086
CLL5251B	22	5.6	29	600	0.25	0.1	17	+0.087
CLL5252B	24	5.2	33	600	0.25	0.1	18	+0.088
CLL5253B	25	5.0	35	600	0.25	0.1	19	+0.089
CLL5254B	27	4.6	41	600	0.25	0.1	21	+0.090
CLL5255B	28	4.5	44	600	0.25	0.1	21	+0.091
CLL5256B	30	4.2	49	600	0.25	0.1	23	+0.091
CLL5257B	33	3.8	58	700	0.25	0.1	25	+0.092

All dimensions in inches (mm).



DATA SHEET

R1

CLLR1 SERIES

GENERAL PURPOSE RECTIFIER
1.0 AMP, 200 THRU 1,000 VOLTS

MELF CASE

Central™
Semiconductor Corp.

FEATURES:

- LOW COST
- HIGH RELIABILITY
- SPECIAL SELECTIONS AVAILABLE
- SUPERIOR LOT TO LOT CONSISTENCY
- GLASS PASSIVATED INTERNAL CONSTRUCTION

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 1.0 amp leadless epoxy silicon rectifier is a high quality, well constructed, highly reliable component designed for use in all types of commercial, industrial, entertainment, computer, and automotive applications. Higher voltage devices, special selections, fast recovery, ultra fast recovery, and Schottky devices are also available.

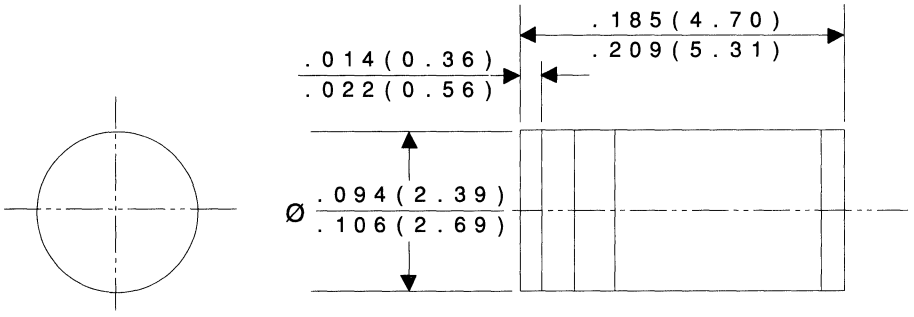
MAXIMUM RATINGS: (T_A=25°C unless otherwise noted)

	SYMBOL	CLLR1 -02	CLLR1 -04	CLLR1 -06	CLLR1 -10	UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	200	400	600	1000	V
DC Blocking Voltage	V_R	200	400	600	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	140	280	420	700	V
Average Forward Current (T_L=80°C)	I_O		1.0			A
Peak Forward Surge Current (8.3ms)	I_{FSM}		30			A
Operating and Storage Junction Temperature	T_J,T_{stg}		-65 to +175			°C

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
V_F	I_F=Rated I_O		1.1	V
I_R	V_R=Rated V_{RRM}		10	μA
I_R	V_R=Rated V_{RRM}, T_A=125°C		50	μA

All dimensions in inches (mm).



Marking Codes:

CENTRAL TYPE NO.	BAND 1*	BAND 2
CLLR1-02	WHITE	ORANGE
CLLR1-04	WHITE	YELLOW
CLLR1-06	WHITE	GREEN
CLLR1-10	WHITE	VIOLET

* Cathode Band

CLLR1F SERIES

FAST RECOVERY RECTIFIER
1.0AMP, 200 THRU 1,000 VOLTS

MELF CASE

Central™
Semiconductor Corp.

FEATURES:

- LOW COST
- HIGH RELIABILITY
- GLASS PASSIVATED INTERNAL CONSTRUCTION
- SPECIAL SELECTION AVAILABLE
- SUPERIOR LOT TO LOT CONSISTENCY
- SWITCHING SPEED AS LOW AS 150ns

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 1.0 amp leadless epoxy fast recovery silicon rectifier is a high quality, well constructed, high reliable component designed for use in all types of commercial, industrial, entertainment, computer, and automotive applications. Higher voltage devices, special selections, general purpose, and ultra fast recovery and Schottky devices are available upon request.

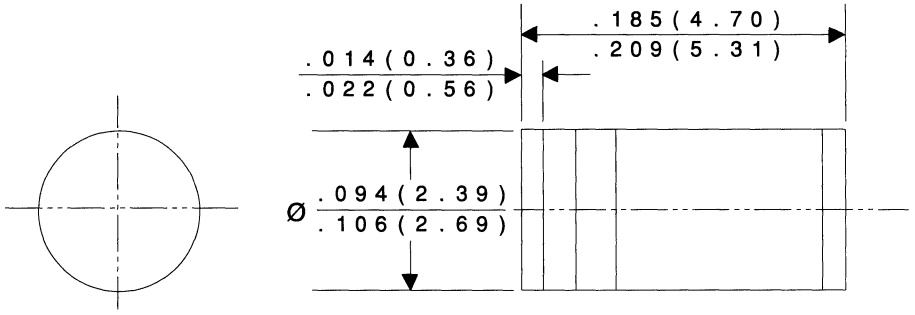
MAXIMUM RATINGS: (T_A = 25°C unless otherwise noted)

	SYMBOL	CLLR1F-02	CLLR1F-06	CLLR1F-10	UNITS
Peak Repeatitive Reverse Voltage	V_{RRM}	200	600	1000	V
DC Blocking Voltage	V_R	200	600	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	140	420	700	V
Average Forward Current (T_L=80°C)	I_O		1.0		A
Peak Forward Surge Current (8.3ms)	I_{FSM}		30		A
Operating and Storage Junction Temperature	T_J,T_{stg}		-65 to +175		°C

ELECTRICAL CHARACTERISTCS (T_A = 25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
V_F	I_F=Rated I_O		1.3	V
I_R	V_R=Rated V_{RRM}		5.0	μA
I_R	V_R=Rated V_{RRM}, T_A=125°C		100	μA
t_{rr}	I_F=0.5A, I_R=1.0A, Recover to 0.25A (CLLR1F-02)		150	ns
t_{rr}	I_F=0.5A, I_R=1.0A, Recover to 0.25A (CLLR1F-06)		250	ns
t_{rr}	I_F=0.5A, I_R=1.0A Recover to 0.25A (CLLR1F-10)		500	ns

All dimensions in inches (mm).



Marking Codes:

CENTRAL TYPE NO.	BAND 1*	BAND 2
CLLR1F-02	RED	ORANGE
CLLR1F-06	RED	GREEN
CLLR1F-10	RED	VIOLET

* Cathode Band

CLLR1U SERIES

ULTRA FAST RECTIFIER
1.0 AMP, 100 THRU 400 VOLTS

MELF CASE

Central™
Semiconductor Corp.

FEATURES

- LOW COST
- HIGH RELIABILITY
- GLASS PASSIVATED INTERNAL CONSTRUCTION
- SPECIAL SELECTIONS AVAILABLE
- SUPERIOR LOT TO LOT CONSISTENCY
- SWITCHING SPEED: 50 ns MAX

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 1.0 amp leadless epoxy ultra fast recovery rectifier is a high quality, well constructed, highly reliable component designed for use in all types of commercial, industrial, entertainment, computer, and automotive applications. Higher voltage devices, special selections, general purpose, fast recovery and Schottky devices are available upon request.

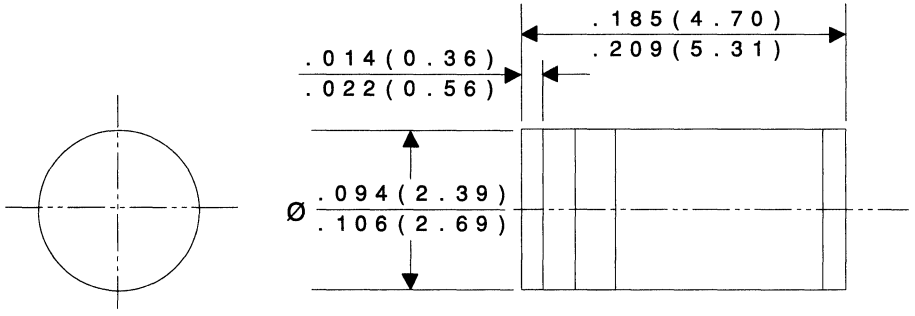
MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

	SYMBOL	CLLR1U-01	CLLR1U-02	CLLR1U-04	UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	100	200	400	V
DC Blocking Voltage	V_R	100	200	400	V
RMS Reverse Voltage	$V_{R(RMS)}$	70	140	280	V
Average Forward Current (T_L=80°C)	I_O		1.0		A
Peak Forward Surge Current (8.3ms)	I_{FSM}		30		A
Operating and Storage Junction Temperature	T_J,T_{stg}		-65 to +175		°C

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
V_F	I_F=Rated I_O (CLLR1U-01, CLLR1U-02)		1.0	V
V_F	I_F=Rated I_O (CLLR1U-04)		1.25	V
I_R	V_R=Rated V_{RRM}		5.0	μA
I_R	V_R=Rated V_{RRM}, T_A=125°C		100	μA
t_{rr}	I_F=0.5A, I_R=1.0A, Recover to 0.25A (All types)		50	ns

All dimensions in inches (mm).



Marking Codes:

CENTRAL TYPE NO.	BAND 1*	BAND 2
CLLR1U-01	GREEN	RED
CLLR1U-02	GREEN	ORANGE
CLLR1U-04	GREEN	YELLOW

* Cathode Band

CLLSH1 SERIES

SCHOTTKY RECTIFIER
1.0 AMP, 20 THRU 60 VOLTS

MELF CASE

Central™
Semiconductor Corp.

FEATURES

- LOW COST
- HIGH RELIABILITY
- EXTREMELY LOW FORWARD VOLTAGE DROP
- SPECIAL SELECTIONS AVAILABLE
- SUPERIOR LOT TO LOT CONSISTENCY

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 1.0 amp leadless epoxy Schottky rectifier is a high quality, well constructed, highly reliable component designed for use in all types of commercial, industrial, entertainment, computer and automotive applications. Higher voltage devices, special selections, general purpose, fast recovery and ultra fast recovery devices are available upon request.

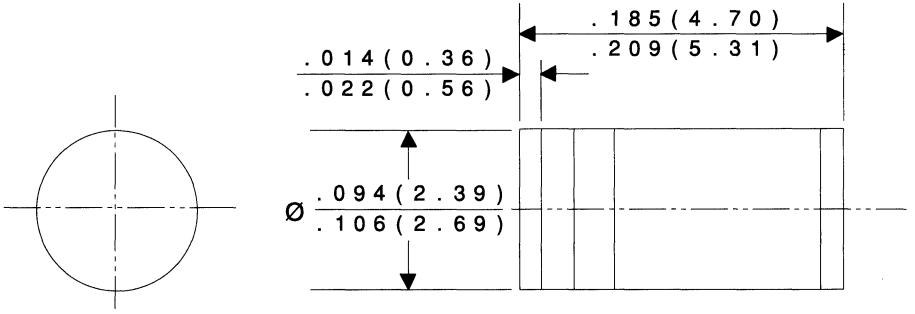
MAXIMUM RATINGS (T_A=25°C unless otherwise noted)

	SYMBOL	CLLSH1-20	CLLSH1-40	CLLSH1-60	UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	20	40	60	V
DC Blocking Voltage	V_R	20	40	60	V
RMS Reverse Voltage	$V_{R(RMS)}$	14	28	42	V
Average Forward Current (T_L=80°C)	I_O		1.0		A
Peak Forward Surge Current (8.3ms)	I_{FSM}		30		A
Operating and Storage Junction Temperature	T_J,T_{stg}		-65 to +150		°C

ELECTRICAL CHARACTERISTICS (T_A=25°C) unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
V_F	I_F=Rated I_O (CLLSH1-20, CLLSH1-40)		0.50	V
V_F	I_F=Rated I_O (CLLSH1-60)		0.70	V
I_R	V_R=Rated V_{RRM}		500	μA
I_R	V_R=Rated V_{RRM}, T_A=100°C		10	mA

All dimensions in inches (mm).



Marking Codes:

CENTRAL TYPE NO.	BAND 1*	BAND 2
CLLSH1-20	ORANGE	GRAY
CLLSH1-40	ORANGE	ORANGE
CLLSH1-60	ORANGE	GREEN

* Cathode Band

NEW

CMDSH-3

SUPER-MINI
SCHOTTKY DIODE

SUPER™ mini

SOD-323 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMDSH-3 type is a Silicon Schottky Diode, manufactured in a super-mini surface mount package, designed for fast switching applications requiring a low forward voltage drop.

Marking Code is AB.

MAXIMUM RATINGS: (T_A=25°C)

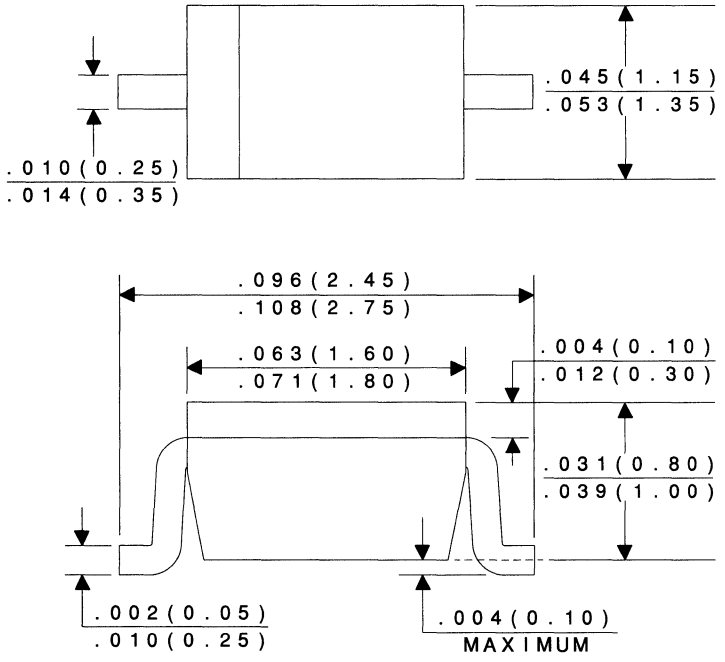
	SYMBOL		UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	30	V
Average Forward Current	I_O	100	mA
Forward Surge Current, tp=10 ms	I_{FSM}	1.0	A
Power Dissipation	P_D	250	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	500	°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
BV_R	I_F=100μA	30			V
V_F	I_F=2.0mA		0.30		V
V_F	I_F=15mA		0.36		V
V_F	I_F=100mA			0.55	V
I_R	V_R=25V			15	μA
C_T	V_R=10V, f=1.0 MHz		7.0		pF

All dimensions in inches (mm).

TOP VIEW



NEW

CMDZ2V4 THRU CMDZ47

SUPER-MINI ZENER DIODE
2.4 VOLTS THRU 47 VOLTS
250mW, 5% TOLERANCE

SUPER mini™

SOD-323 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMDZ2V4 Series Silicon Zener Diode is a high quality voltage regulator, manufactured in a super-mini surface mount package, designed for use in industrial, commercial, entertainment and computer applications.

ABSOLUTE MAXIMUM RATINGS:	**SYMBOL**		**UNIT**
Power Dissipation (@T_A=25°C)	P_D	250	mW
Operating and Storage Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	500	°C/W

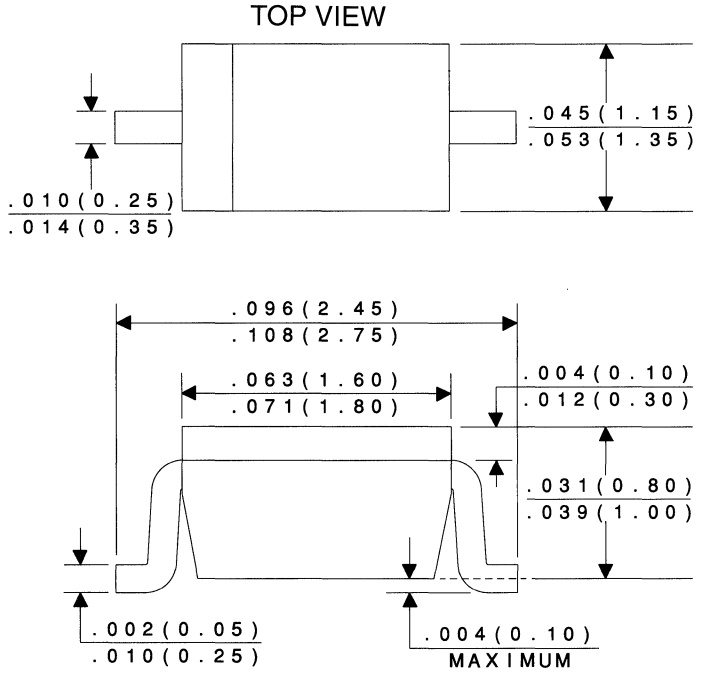
ELECTRICAL CHARACTERISTICS: (T_A=25°C), V_F=0.9V MAX @ I_F=10mA FOR ALL TYPES.

TYPE	ZENER VOLTAGE V_Z @ I_{ZT}			TEST CURRENT	MAXIMUM ZENER IMPEDENCE			MAXIMUM REVERSE CURRENT		MAXIMUM ZENER VOLTAGE TEMPERATURE COEFFICIENT
	MIN	NOM	MAX	I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}		I_R @ V_R		
	VOLTS	VOLTS	VOLTS	mA	Ω	Ω	mA	μA	VOLTS	%/°C
CMDZ2V4	2.280	2.4	2.520	5.0	100	600	1.0	50	1.0	-0.085
CMDZ2V7	2.565	2.7	2.835	5.0	100	600	1.0	20	1.0	-0.080
CMDZ3V0	2.850	3.0	3.150	5.0	95	600	1.0	10	1.0	-0.075
CMDZ3V3	3.135	3.3	3.465	5.0	95	600	1.0	5.0	1.0	-0.070
CMDZ3V6	3.420	3.6	3.780	5.0	90	600	1.0	5.0	1.0	-0.065
CMDZ3V9	3.705	3.9	4.095	5.0	90	600	1.0	3.0	1.0	-0.060
CMDZ4V3	4.085	4.3	4.515	5.0	90	600	1.0	3.0	1.0	±0.055
CMDZ4V7	4.465	4.7	4.935	5.0	80	500	1.0	3.0	2.0	±0.030
CMDZ5V1	4.845	5.1	5.355	5.0	60	480	1.0	2.0	2.0	±0.030
CMDZ5V6	5.320	5.6	5.880	5.0	40	400	1.0	1.0	2.0	+0.038
CMDZ6V2	5.890	6.2	6.510	5.0	10	150	1.0	3.0	4.0	+0.045
CMDZ6V8	6.460	6.8	7.140	5.0	15	80	1.0	2.0	4.0	+0.050
CMDZ7V5	7.125	7.5	7.875	5.0	15	80	1.0	1.0	5.0	+0.058
CMDZ8V2	7.790	8.2	8.610	5.0	15	80	1.0	0.7	5.0	+0.062
CMDZ9V1	8.645	9.1	9.555	5.0	15	100	1.0	0.5	6.0	+0.068
CMDZ10	9.500	10	10.50	5.0	20	150	1.0	0.2	7.0	+0.075
CMDZ11	10.45	11	11.55	5.0	20	150	1.0	0.1	8.0	+0.076
CMDZ12	11.40	12	12.60	5.0	25	150	1.0	0.1	8.0	+0.077

ELECTRICAL CHARACTERISTICS: (T_A=25°C), V_F=0.9V MAX @ I_F=10mA FOR ALL TYPES.

TYPE	ZENER VOLTAGE V_Z @ I_{ZT}			TEST CURRENT	MAXIMUM ZENER IMPEDENCE			MAXIMUM REVERSE CURRENT		MAXIMUM ZENER VOLTAGE TEMPERATURE COEFFICIENT
	MIN	NOM	MAX	I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}		I_R @ V_R		
	VOLTS	VOLTS	VOLTS	mA	Ω	Ω	mA	μA	VOLTS	%/°C
CMDZ13	12.35	13	13.65	5.0	30	170	1.0	0.1	8.0	+0.079
CMDZ15	14.25	15	15.75	5.0	30	200	1.0	0.05	10.5	+0.082
CMDZ16	15.20	16	16.80	5.0	40	200	1.0	0.05	11.2	+0.083
CMDZ18	17.10	18	18.90	5.0	45	225	1.0	0.05	12.6	+0.085
CMDZ20	19.00	20	21.00	5.0	55	225	1.0	0.05	14.0	+0.086
CMDZ22	20.90	22	23.10	5.0	55	250	1.0	0.05	15.4	+0.087
CMDZ24	22.80	24	25.20	5.0	70	250	1.0	0.05	16.8	+0.088
CMDZ27	25.65	27	28.35	2.0	80	300	0.5	0.05	18.9	+0.090
CMDZ30	28.50	30	31.50	2.0	80	300	0.5	0.05	21.0	+0.091
CMDZ33	31.35	33	34.65	2.0	80	325	0.5	0.05	23.1	+0.092
CMDZ36	34.20	36	37.80	2.0	90	350	0.5	0.05	25.2	+0.093
CMDZ39	37.05	39	40.95	2.0	130	350	0.5	0.05	27.3	+0.094
CMDZ43	40.85	43	45.15	2.0	150	375	0.5	0.05	30.1	+0.095
CMDZ47	44.65	47	49.35	2.0	170	375	0.5	0.05	32.9	+0.095

All dimensions in inches (mm).



CMDZ4678
THRU
CMDZ4714

SUPER-MINI
LOW LEVEL ZENER DIODE
1.8 VOLTS THRU 33 VOLTS
250mW, 5% TOLERANCE

SUPER™ mini

SOD-323 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMDZ4678 Series Silicon Low Level Zener Diode is a high quality voltage regulator, manufactured in a super-mini surface mount package, designed for applications requiring an extremely low operating current and low leakage.

ABSOLUTE MAXIMUM RATINGS:	**SYMBOL**		**UNIT**
Power Dissipation (@T_A=25°C)	P_D	250	mW
Operating and Storage Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	500	°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C), V_F=1.5V MAX @ I_F=100mA FOR ALL TYPES.

TYPE	ZENER VOLTAGE V_Z @ I_{ZT}			TEST CURRENT	MAXIMUM REVERSE LEAKAGE CURRENT		MAXIMUM VOLTAGE CHANGE**	MAXIMUM ZENER CURRENT
	MIN	NOM	MAX	I_{ZT}	I_R @ V_R		ΔV_Z	I_{ZM}
	VOLTS	VOLTS	VOLTS	μA	μA	VOLTS	VOLTS	mA
CMDZ4678*	1.710	1.8	1.890	50	7.5	1.0	0.70	120
CMDZ4679*	1.900	2.0	2.100	50	5.0	1.0	0.70	110
CMDZ4680*	2.090	2.2	2.310	50	4.0	1.0	0.75	100
CMDZ4681*	2.280	2.4	2.520	50	2.0	1.0	0.80	95.0
CMDZ4682*	2.565	2.7	2.835	50	1.0	1.0	0.85	90.0
CMDZ4683*	2.850	3.0	3.150	50	0.8	1.0	0.90	85.0
CMDZ4684*	3.135	3.3	3.465	50	7.5	1.5	0.95	80.0
CMDZ4685*	3.420	3.6	3.780	50	7.5	2.0	0.95	75.0
CMDZ4686*	3.705	3.9	4.095	50	5.0	2.0	0.97	70.0
CMDZ4687*	4.085	4.3	4.515	50	4.0	2.0	0.99	65.0
CMDZ4688*	4.465	4.7	4.935	50	10	3.0	0.99	60.0
CMDZ4689*	4.845	5.1	5.355	50	10	3.0	0.97	55.0
CMDZ4690*	5.320	5.6	5.880	50	10	4.0	0.96	50.0
CMDZ4691*	5.890	6.2	6.510	50	10	5.0	0.95	45.0
CMDZ4692*	6.460	6.8	7.140	50	10	5.1	0.90	35.0
CMDZ4693*	7.125	7.5	7.875	50	10	5.7	0.75	31.8
CMDZ4694*	7.790	8.2	8.610	50	1.0	6.2	0.50	29.0
CMDZ4695*	8.265	8.7	9.135	50	1.0	6.6	0.10	27.4
CMDZ4696*	8.645	9.1	9.555	50	1.0	6.9	0.08	26.2
CMDZ4697*	9.500	10	10.50	50	1.0	7.6	0.10	24.8

* Available on special order only, please consult factory.

** ΔV_Z=V_Z @ 100μA MINUS V_Z @ 10μA

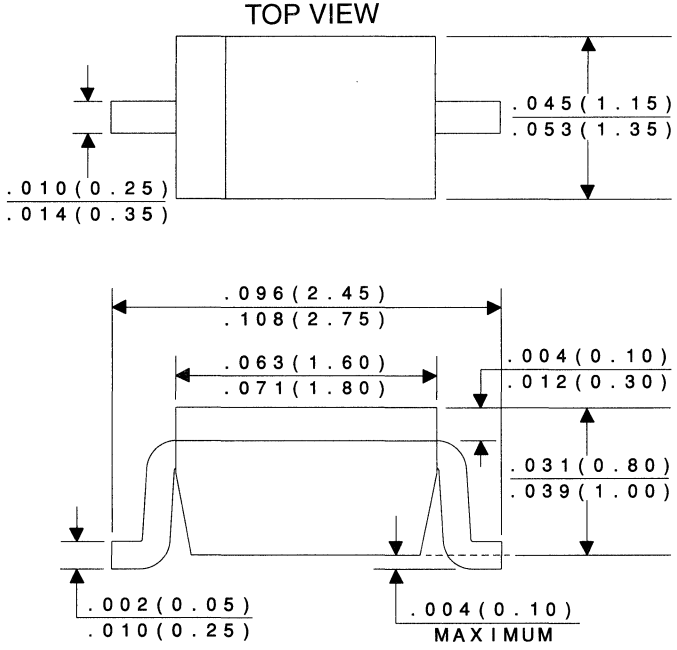
ELECTRICAL CHARACTERISTICS: (T_A=25°C), V_F=1.5V MAX @ I_F=100mA FOR ALL TYPES.

TYPE	ZENER VOLTAGE V_Z @ I_{ZT}			TEST CURRENT	MAXIMUM REVERSE LEAKAGE CURRENT		MAXIMUM VOLTAGE CHANGE**	MAXIMUM ZENER CURRENT
	MIN	NOM	MAX	I_{ZT}	I_R @ V_R		ΔV_Z	I_{ZM}
	VOLTS	VOLTS	VOLTS	µA	µA	VOLTS	VOLTS	mA
CMDZ4698*	10.45	11	11.55	50	0.05	8.4	0.11	21.6
CMDZ4699*	11.40	12	12.60	50	0.05	9.1	0.12	20.4
CMDZ4700*	12.35	13	13.65	50	0.05	9.8	0.13	19.0
CMDZ4701*	13.30	14	14.70	50	0.05	10.6	0.14	17.5
CMDZ4702*	14.25	15	15.75	50	0.05	11.4	0.15	16.3
CMDZ4703*	15.20	16	16.80	50	0.05	12.1	0.16	15.4
CMDZ4704*	16.15	17	17.85	50	0.05	12.9	0.17	14.5
CMDZ4705*	17.10	18	18.90	50	0.05	13.6	0.18	13.2
CMDZ4706*	18.05	19	19.95	50	0.05	14.4	0.19	12.5
CMDZ4707*	19.00	20	21.00	50	0.01	15.2	0.20	11.9
CMDZ4708*	20.90	22	23.10	50	0.01	16.7	0.22	10.8
CMDZ4709*	22.80	24	25.20	50	0.01	18.2	0.24	9.9
CMDZ4710*	23.75	25	26.25	50	0.01	19.0	0.25	9.5
CMDZ4711*	25.65	27	28.35	50	0.01	20.4	0.27	8.8
CMDZ4712*	26.60	28	29.40	50	0.01	21.2	0.28	8.5
CMDZ4713*	28.50	30	31.50	50	0.01	22.8	0.30	7.9
CMDZ4714*	31.35	33	34.65	50	0.01	25.0	0.33	7.2

* Available on special order only, please consult factory.

** ΔV_Z=V_Z @ 100µA MINUS V_Z @ 10µA

All dimensions in inches (mm).



CMDZ5221B THRU CMDZ5261B

SUPER-MINI ZENER DIODE
2.4 VOLTS THRU 47 VOLTS
250mW, 5% TOLERANCE

Central™ Semiconductor Corp.

SUPER™ mini

SOD-323 CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMDZ5221B Series Silicon Zener Diode is a high quality voltage regulator, manufactured in a super-mini surface mount package, designed for use in industrial, commercial, entertainment and computer applications.

ABSOLUTE MAXIMUM RATINGS:

	SYMBOL		UNIT
Power Dissipation (@T_A=25°C)	P_D	250	mW
Operating and Storage Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	500	°C/W

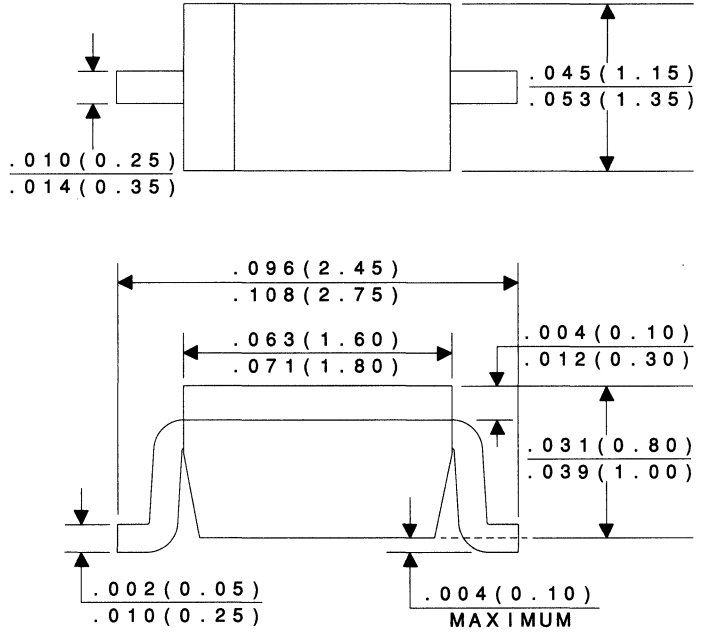
ELECTRICAL CHARACTERISTICS: (T_A=25°C), V_F=0.9V MAX @ I_F=10mA FOR ALL TYPES.

TYPE	ZENER VOLTAGE V_Z @ I_{ZT}			TEST CURRENT	MAXIMUM ZENER IMPEDENCE			MAXIMUM REVERSE CURRENT		MAXIMUM ZENER VOLTAGE TEMPERATURE COEFFICIENT
	MIN	NOM	MAX	I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}		I_R @ V_R		
	VOLTS	VOLTS	VOLTS	mA	Ω	Ω	mA	μA	VOLTS	%/°C
CMDZ5221B	2.280	2.4	2.520	20	30	1200	0.25	100	1.0	-0.085
CMDZ5222B	2.375	2.5	2.625	20	30	1250	0.25	100	1.0	-0.085
CMDZ5223B	2.565	2.7	2.835	20	30	1300	0.25	75	1.0	-0.080
CMDZ5224B	2.660	2.8	2.940	20	30	1400	0.25	75	1.0	-0.080
CMDZ5225B	2.850	3.0	3.150	20	29	1600	0.25	50	1.0	-0.075
CMDZ5226B	3.135	3.3	3.465	20	28	1600	0.25	25	1.0	-0.070
CMDZ5227B	3.420	3.6	3.780	20	24	1700	0.25	15	1.0	-0.065
CMDZ5228B	3.705	3.9	4.095	20	23	1900	0.25	10	1.0	-0.060
CMDZ5229B	4.085	4.3	4.515	20	22	2000	0.25	5.0	1.0	±0.055
CMDZ5230B	4.465	4.7	4.935	20	19	1900	0.25	5.0	2.0	±0.030
CMDZ5231B	4.845	5.1	5.355	20	17	1600	0.25	5.0	2.0	±0.030
CMDZ5232B	5.320	5.6	5.880	20	11	1600	0.25	5.0	3.0	+0.038
CMDZ5233B	5.700	6.0	6.300	20	7.0	1600	0.25	5.0	3.5	+0.038
CMDZ5234B	5.890	6.2	6.510	20	7.0	1000	0.25	5.0	4.0	+0.045
CMDZ5235B	6.460	6.8	7.140	20	5.0	750	0.25	3.0	5.0	+0.050
CMDZ5236B	7.125	7.5	7.875	20	6.0	500	0.25	3.0	6.0	+0.058
CMDZ5237B	7.790	8.2	8.610	20	8.0	500	0.25	3.0	6.5	+0.062
CMDZ5238B	8.265	8.7	9.135	20	8.0	600	0.25	3.0	6.5	+0.065
CMDZ5239B	8.645	9.1	9.555	20	10	600	0.25	3.0	7.0	+0.068
CMDZ5240B	9.500	10	10.50	20	17	600	0.25	3.0	8.0	+0.075
CMDZ5241B	10.45	11	11.55	20	22	600	0.25	2.0	8.4	+0.076
CMDZ5242B	11.40	12	12.60	20	30	600	0.25	1.0	9.1	+0.077

ELECTRICAL CHARACTERISTICS: (T_A=25°C), V_F=0.9V MAX @ I_F=10mA FOR ALL TYPES.

TYPE	ZENER VOLTAGE V_Z @ I_{ZT}			TEST CURRENT	MAXIMUM ZENER IMPEDENCE			MAXIMUM REVERSE CURRENT		MAXIMUM ZENER VOLTAGE TEMPERATURE COEFFICIENT
	MIN	NOM	MAX	I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}		I_R @ V_R		
	VOLTS	VOLTS	VOLTS	mA	Ω	Ω	mA	µA	VOLTS	%/°C
CMDZ5243B	12.35	13	13.65	9.5	13	600	0.25	0.5	9.9	+0.079
CMDZ5244B	13.30	14	14.70	9.0	15	600	0.25	0.1	10	+0.082
CMDZ5245B	14.25	15	15.75	8.5	16	600	0.25	0.1	11	+0.082
CMDZ5246B	15.20	16	16.80	7.8	17	600	0.25	0.1	12	+0.083
CMDZ5247B	16.15	17	17.85	7.4	19	600	0.25	0.1	13	+0.084
CMDZ5248B	17.10	18	18.90	7.0	21	600	0.25	0.1	14	+0.085
CMDZ5249B	18.05	19	19.95	6.6	23	600	0.25	0.1	14	+0.086
CMDZ5250B	19.00	20	21.00	6.2	25	600	0.25	0.1	15	+0.086
CMDZ5251B	20.90	22	23.10	5.6	29	600	0.25	0.1	17	+0.087
CMDZ5252B	22.80	24	25.20	5.2	33	600	0.25	0.1	18	+0.088
CMDZ5253B	23.75	25	26.25	5.0	35	600	0.25	0.1	19	+0.089
CMDZ5254B	25.65	27	28.35	4.6	41	600	0.25	0.1	21	+0.090
CMDZ5255B	26.60	28	29.40	4.5	44	600	0.25	0.1	21	+0.091
CMDZ5256B	28.50	30	31.50	4.2	49	600	0.25	0.1	23	+0.091
CMDZ5257B	31.35	33	34.65	3.8	58	700	0.25	0.1	25	+0.092
CMDZ5258B	34.20	36	37.80	3.4	70	700	0.25	0.1	27	+0.093
CMDZ5259B	37.05	39	40.95	3.2	80	800	0.25	0.1	30	+0.094
CMDZ5260B	40.85	43	45.15	3.0	93	900	0.25	0.1	33	+0.095
CMDZ5261B	44.65	47	49.35	2.7	105	1000	0.25	0.1	36	+0.095

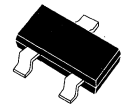
All dimensions in inches (mm). TOP VIEW



DATA SHEET

CMPD914

HIGH SPEED SWITCHING DIODE



SOT-23 CASE

Central™ Semiconductor Corp.

DESCRIPTION

The CENTRAL SEMICONDUCTOR CMPD914 type is a ultra-high speed silicon switching diode manufactured by the epitaxial planar process, in an epoxy molded surface mount package, designed for high speed switching applications.
Marking code is C5D.

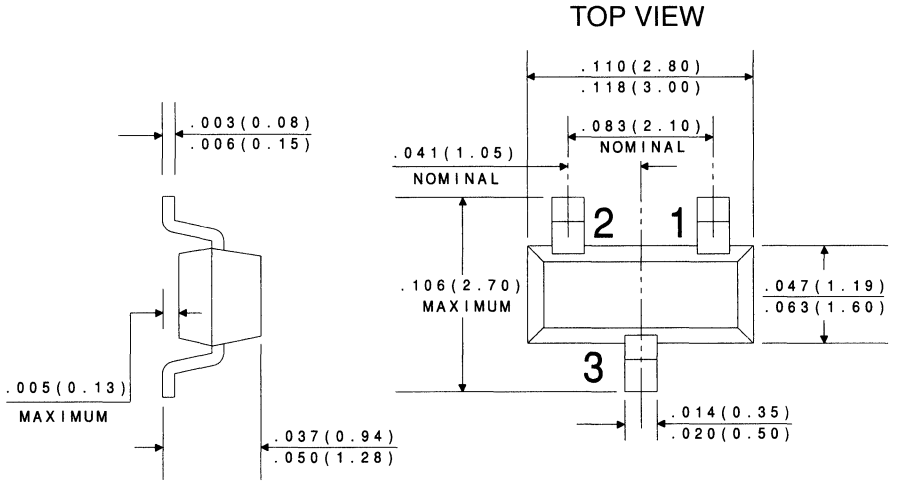
MAXIMUM RATINGS (T_A=25°C)

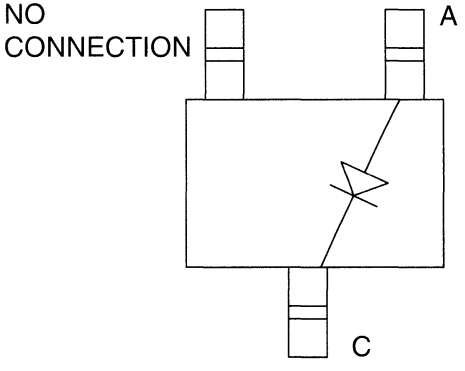
	SYMBOL		UNITS
Continuous Reverse Voltage	V_R	75	V
Peak Repetitive Reverse Voltage	V_{RRM}	100	V
Continuous Forward Current	I_F	250	mA
Peak Repetitive Forward Current	I_{FRM}	250	mA
Forward Surge Current, tp=1 μsec.	I_{FSM}	4000	mA
Forward Surge Current, tp=1 msec.	I_{FSM}	2000	mA
Forward Surge Current, tp=1 sec.	I_{FSM}	1000	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
V_{BR}	I_R=100μA	100		V
I_R	V_R=20V		25	nA
I_R	V_R=75V		5.0	μA
V_F	I_F=10mA		1.0	V
C_T	V_R=0, f=1 MHz		4.0	pF
t_{rr}	I_R=I_F=10mA, R_L=100Ω, Rec. to 1.0mA		4.0	ns

All dimensions in inches (mm).



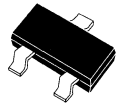


DATA SHEET

R1

CMPD1001
CMPD1001A
CMPD1001S

HIGH CURRENT SWITCHING DIODE



SOT-23 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPD1001 series types are silicon switching diodes manufactured by the epitaxial planar process, designed for applications requiring high current capability.

The following configurations are available:

CMPD1001	SINGLE	**MARKING CODE: L20**
CMPD1001S	DUAL, IN SERIES	**MARKING CODE: L21**
CMPD1001A	DUAL, COMMON ANODE	**MARKING CODE: L22**

MAXIMUM RATINGS (T_A=25°C)

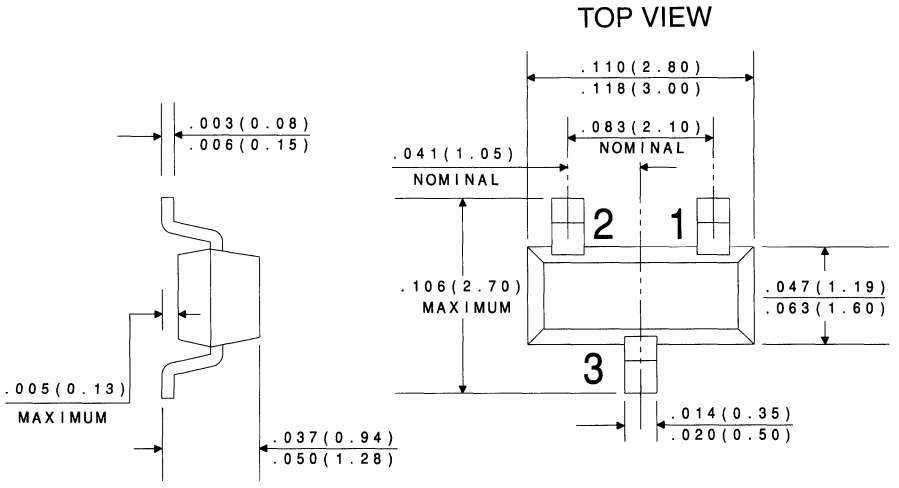
	SYMBOL		UNITS
Continuous Reverse Voltage	V_R	90	V
Continuous Forward Current	I_F	250	mA
Peak Repetitive Forward Current	I_{FRM}	600	mA
Peak Repetitive Reverse Current	I_{RRM}	600	mA
Forward Surge Current, tp=1 μs	I_{FSM}	6000	mA
Forward Surge Current, tp=1 s	I_{FSM}	1000	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

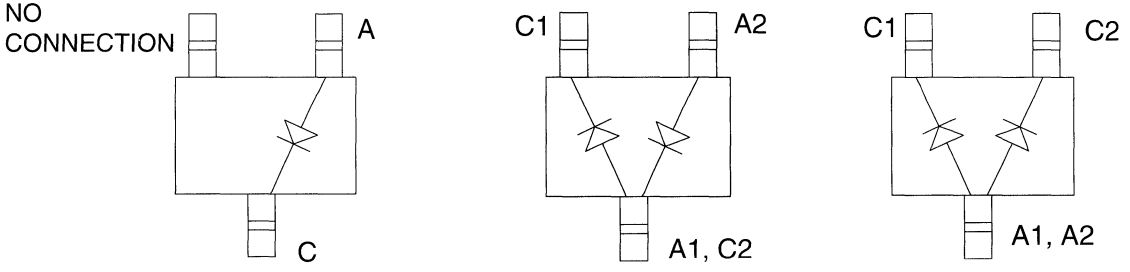
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNIT
B_{VR}	I_R=100 μA	90		V
I_R	V_R=90V		100	nA
I_R	V_R=90V, T_A=150°C		100	μA
V_F	I_F=10mA		0.75	V

SYMBOL	TEST CONDITIONS	MIN	MAX	UNIT
V_F	I_F=50mA		0.84	V
V_F	I_F=100mA		0.90	V
V_F	I_F=200mA		1.00	V
V_F	I_F=400mA		1.25	V
C_T	V_R=0, f=1 MHz		35	pF
t_{rr}	I_F=I_R=30mA, RECOV. TO 3.0mA, R_L=100Ω		50	ns

All dimensions in inches (mm).





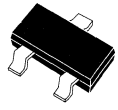
CMPD1001 **CMPD1001S** **CMPD1001A**

DATA SHEET

R1

CMPD2003
CMPD2004
CMPD2004S

HIGH VOLTAGE SWITCHING DIODE



SOT-23 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPD2003, CMPD2004, CMPD2004S types are silicon switching diodes manufactured by the epitaxial planar process, designed for applications requiring high voltage capability.

The following configurations are available:

CMPD2003	SINGLE	**MARKING CODE: A82**
CMPD2004	SINGLE	**MARKING CODE: D53**
CMPD2004S	DUAL, IN SERIES	**MARKING CODE: DB6**

MAXIMUM RATINGS (T_A=25°C)

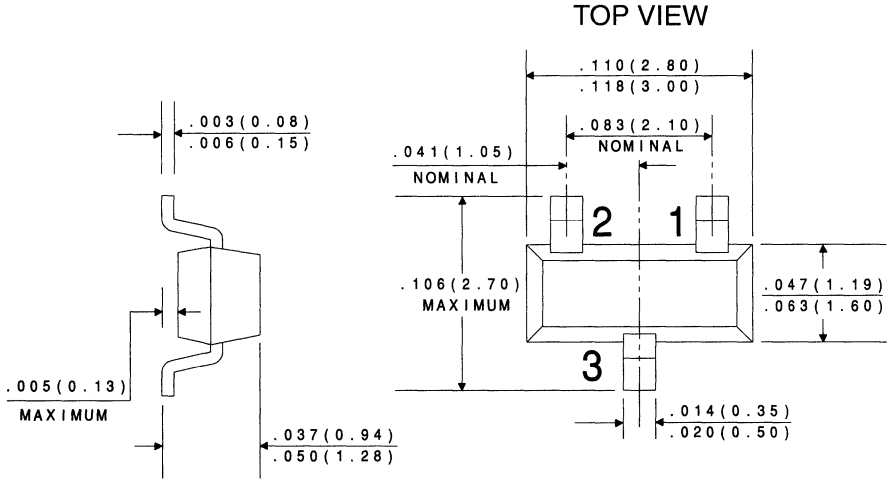
	SYMBOL	CMPD2003	CMPD2004 CMPD2004S	UNITS
Continuous Reverse Voltage	V_R	200	240	V
Peak Repetitive Reverse Voltage	V_{RRM}	250	300	V
Peak Repetitive Reverse Current	I_O	200	200	mA
Continuous Forward Current	I_F	250	225	mA
Peak Repetitive Forward Current	I_{FRM}	625	625	mA
Forward Surge Current, tp=1 μs	I_{FSM}	4000	4000	mA
Forward Surge Current, tp=1 s	I_{FSM}	1000	1000	mA
Power Dissipation	P_D	350		mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150		°C
Thermal Resistance	Θ_{JA}	357		°C/W

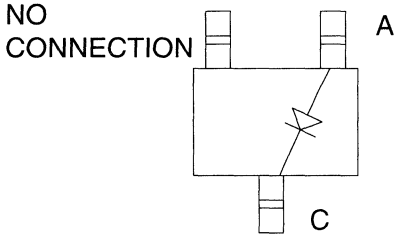
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

		CMPD2003		CMPD2004 CMPD2004S		
SYMBOL	**TEST CONDITIONS**	**MIN**	**MAX**	**MIN**	**MAX**	**UNIT**
B_{VR}	I_R=100 μA	250		300		V
I_R	V_R=200V		100		-	nA
I_R	V_R=200V, T_A=150°C		100		-	μA
I_R	V_R=240V		-		100	nA
I_R	V_R=240V, T_A=150°C		-		100	μA
V_F	I_F=100mA		1.0		1.0	V

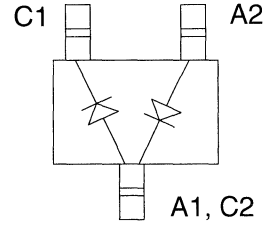
SYMBOL	TEST CONDITIONS	CMPD2003 MIN	CMPD2003 MAX	CMPD2004 CMPD2004S MIN	CMPD2004 CMPD2004S MAX	UNIT
V_F	I_F=200mA		1.25		-	V
C_T	V_R=0, f=1 MHz		5.0		5.0	pF
t_{rr}	I_F=I_R=30mA, RECOV. TO 3.0mA, R_L=100Ω		50		50	ns

All dimensions in inches (mm).





CMPD2003
CMPD2004



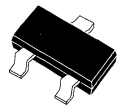
CMPD2004S

DATA SHEET

R1

CMPD2836
CMPD2838

DUAL SILICON SWITCHING DIODE



SOT-23 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPD2836, CMPD2838 types are ultra-high speed silicon switching diodes manufactured by the epitaxial planar process, in an epoxy molded surface mount package, designed for high speed switching applications.

The following configurations are available:

CMPD2836	DUAL, COMMON ANODE	**MARKING CODE: CA2**
CMPD2838	DUAL, COMMON CATHODE	**MARKING CODE: CA6**

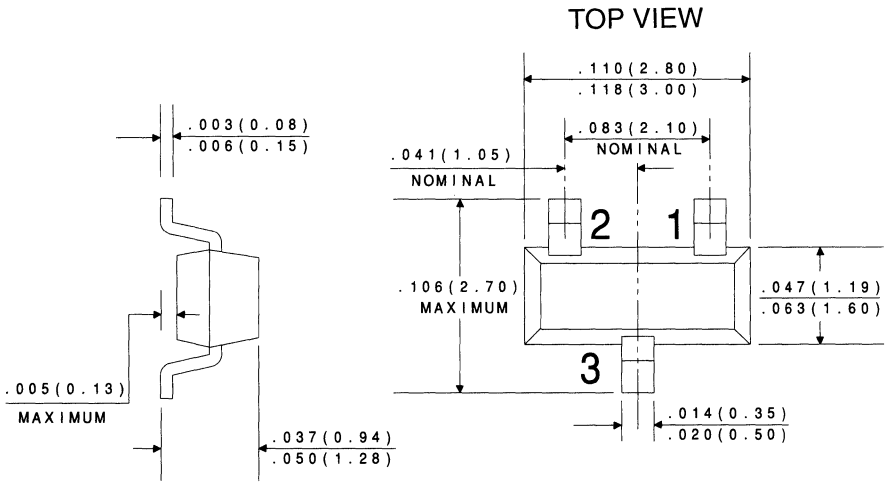
MAXIMUM RATINGS (T_A=25°C)

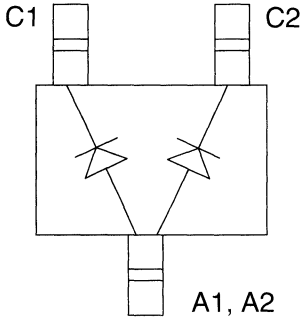
	SYMBOL		UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	75	V
Average Forward Current	I_O	200	mA
Peak Forward Current	I_{FM}	300	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

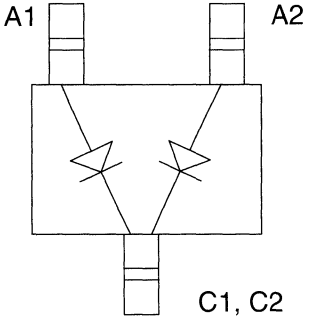
SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
BV_R	I_R=100μA	75			V
I_R	V_R=50V			100	nA
V_F	I_F=10mA			1.0	V
V_F	I_F=50mA			1.0	V
V_F	I_F=100mA			1.2	V
C_T	V_R=0, f=1 MHz		1.5	4.0	pF
t_{rr}	I_R=I_F=10mA, R_L=100Ω, Rec. to 1.0mA			4.0	ns

All dimension in inches (mm).





CMPD2836



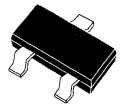
CMPD2838

DATA SHEET

R1

CMPD4150

HIGH CURRENT
HIGH SPEED
SWITCHING DIODE



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPD4150 type is an ultra-high speed silicon switching diode manufactured by the epitaxial planar process, in an epoxy molded surface mount package, designed for high speed switching applications.
Marking code is ABA.

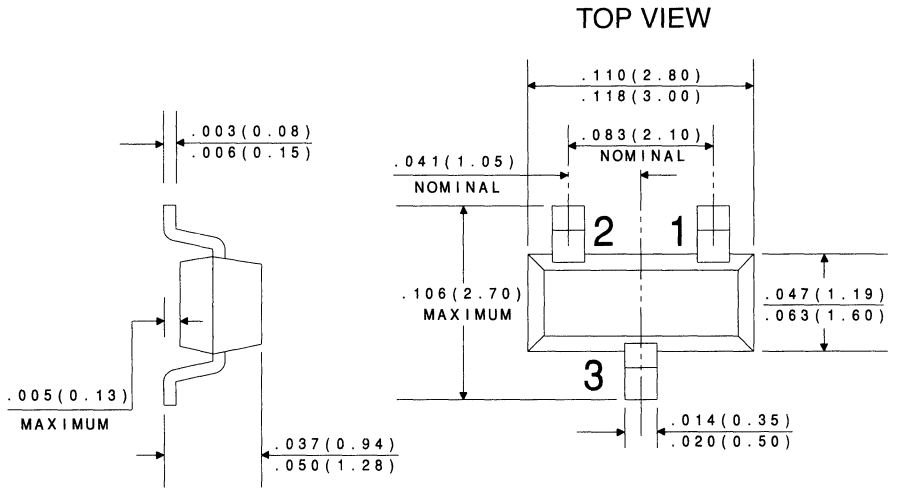
MAXIMUM RATINGS (T_A=25°C)

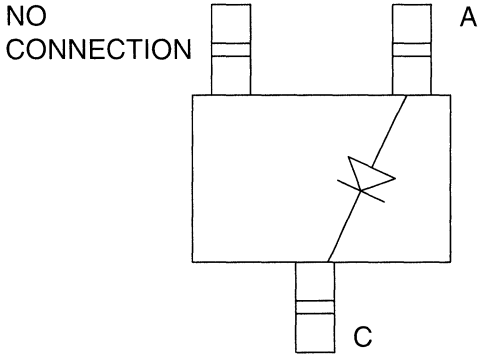
	SYMBOL		UNITS
Continuous Reverse Voltage	V_R	50	V
Peak Repetitive Reverse Voltage	V_{RRM}	50	V
Continuous Forward Current	I_F	250	mA
Peak Repetitive Forward Current	I_{FRM}	250	mA
Forward Surge Current, tp=1 μsec.	I_{FSM}	4000	mA
Forward Surge Current, tp=1 sec.	I_{FSM}	1000	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_R	V_R=50V		100	nA
V_F	I_F=1.0mA	0.54	0.62	V
V_F	I_F=10mA	0.66	0.74	V
V_F	I_F=50mA	0.76	0.86	V
V_F	I_F=100mA	0.82	0.92	V
V_F	I_F=200mA	0.87	1.0	V
C_T	V_R=0, f=1 MHz		4.0	pF
t_{rr}	I_R=I_F=10mA, R_L=100Ω, Rec. to 1.0mA		4.0	ns

All dimensions in inches (mm).

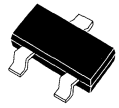




R1

CMPD4448

HIGH SPEED SWITCHING DIODE



SOT-23 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPD4448 type is a ultra-high speed silicon switching diode manufacturedby the epitaxial planar process, in an epoxy molded surface mount package, designed for high speed switching applications.
Marking code is AAD.

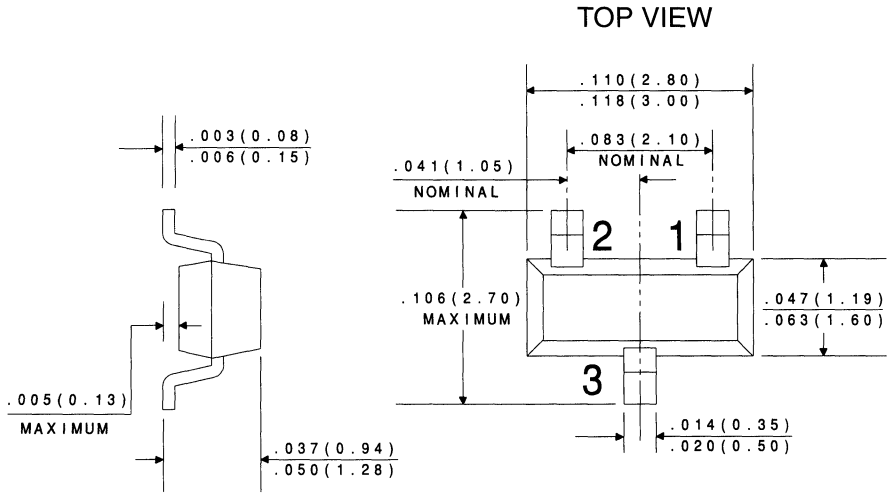
MAXIMUM RATINGS (T_A=25°C)

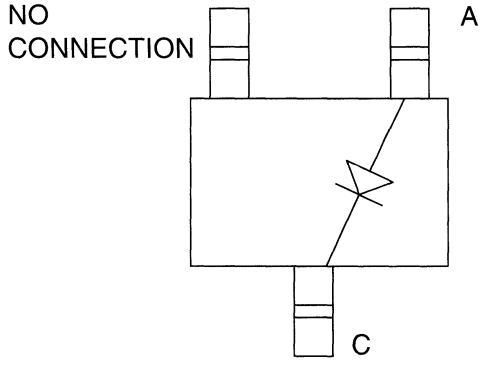
	SYMBOL		UNITS
Continuous Reverse Voltage	V_R	75	V
Peak Repetitive Reverse Voltage	V_{RRM}	100	V
Continuous Forward Current	I_F	250	mA
Peak Repetitive Forward Current	I_{FRM}	250	mA
Forward Surge Current, tp=1 μsec.	I_{FSM}	4000	mA
Forward Surge Current, tp=1 sec.	I_{FSM}	1000	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
V_{BR}	I_R=5.0μA	75		V
V_{BR}	I_R=100μA	100		V
I_R	V_R=20V		25	nA
V_F	I_F=5.0mA	0.62	0.72	V
V_F	I_F=100mA		1.0	V
C_T	V_R=0, f=1 MHz		4.0	pF
t_{rr}	I_R=I_F=10mA, R_L=100Ω, Rec. to 1.0mA		4.0	ns

All dimensions in inches (mm).



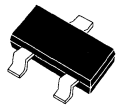


DATA SHEET

R1

CMPD5001
CMPD5001S

HIGH CURRENT
INDUCTIVE LOAD
SWITCHING DIODE



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPD5001 series types are silicon switching diodes manufactured by the epitaxial planar process, designed for switching inductive load applications requiring extremely high current capability.

The following configurations are available:

CMPD5001	SINGLE	**MARKING CODE: DA2**
CMPD5001S	DUAL, IN SERIES	**MARKING CODE: D49**

MAXIMUM RATINGS (T_A=25°C)

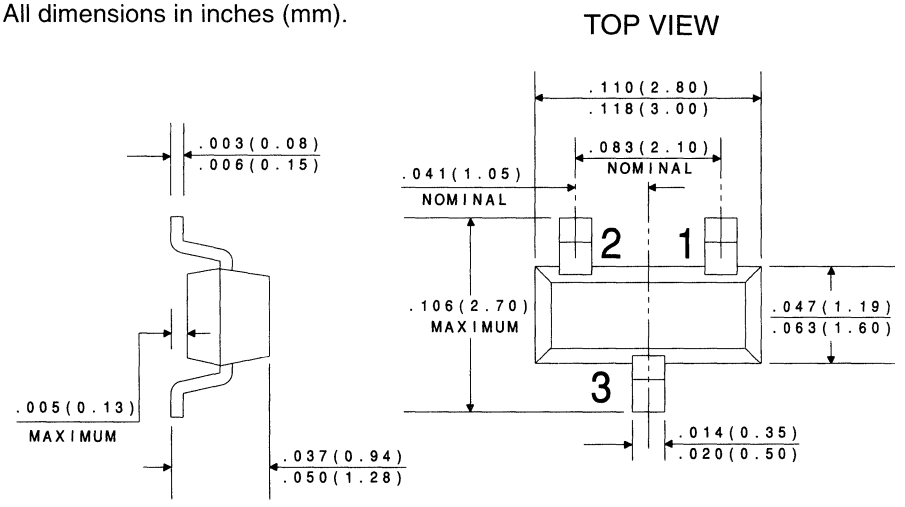
	SYMBOL		UNITS
Continuous Reverse Voltage	V_R	120	V
Continuous Forward Current	I_F	400	mA
Peak Repetitive Forward Current	I_{FRM}	800	mA
Peak Repetitive Reverse Current	I_{RRM}	600	mA
Forward Surge Current, tp=1 μs	I_{FSM}	6000	mA
Forward Surge Current, tp=1 s	I_{FSM}	1500	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

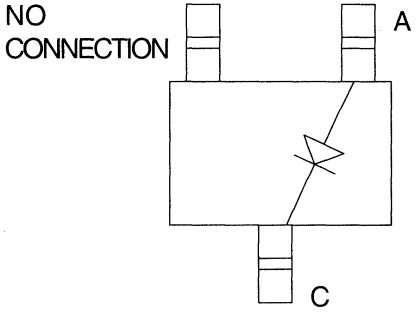
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
B_{VR}	I_R=1.0mA	120	175	V
I_R	V_R=90V		100	nA
I_R	V_R=90V, T_A=150°C		100	μA
V_F	I_F=10mA		0.75	V
V_F	I_F=50mA		0.84	V
V_F	I_F=100mA		0.90	V
V_F	I_F=200mA		1.00	V

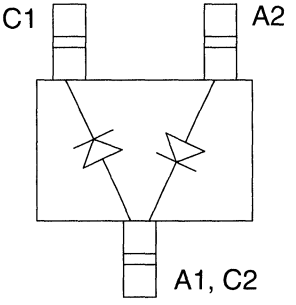
SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
V_F	I_F=400mA		1.25	V
C_T	V_R=0, f=1 MHz		35	pF
t_{rr}	I_F=I_R=30mA, RECOV. TO 1.0mA, R_L=100Ω		60	ns
t_{rr}	I_F=I_R=10mA, RECOV. TO 1.0mA, R_L=100Ω		50	ns

All dimensions in inches (mm).





CMPD5001



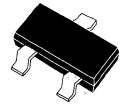
CMPD5001S

DATA SHEET

R1

CMPD6263
CMPD6263A
CMPD6263C
CMPD6263S

SCHOTTKY DIODES



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPD6263 Series types are Silicon Schottky diodes designed for low current surface mount fast switching applications requiring a low forward voltage drop.

The following configurations are available:

CMPD6263	SINGLE	**MARKING CODE: D76**
CMPD6263A	DUAL, COMMON ANODE	**MARKING CODE: D98**
CMPD6263C	DUAL, COMMON CATHODE	**MARKING CODE: D97**
CMPD6263S	DUAL, IN SERIES	**MARKING CODE: D96**

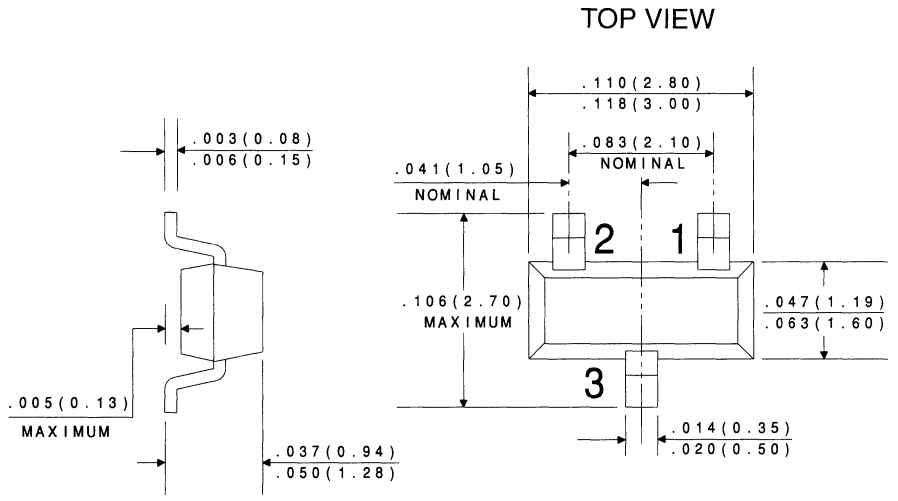
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	70	V
Continuous Forward Current	I_F	15	mA
Forward Surge Current, tp=1.0 s	I_{FSM}	50	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

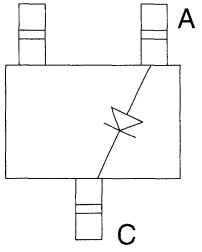
ELECTRICAL CHARACTERISTICS (T_A=25°C)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
B_{VR}	I_R=10μA	70			V
V_F	I_F=1.0mA		395	410	mV
I_R	V_R=50V		98	200	nA
C_T	V_R=0V, f=1.0MHz			2.0	pF

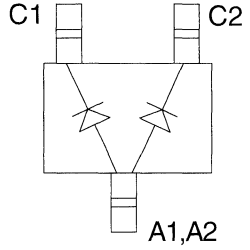
All dimensions in inches (mm).



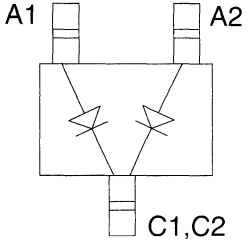
No Connection



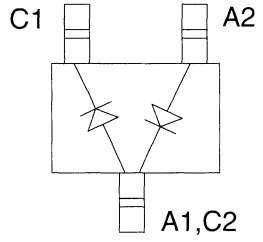
CMPD6263



CMPD6263A



CMPD6263C



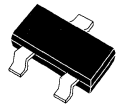
CMPD6263S

DATA SHEET

R1

CMPD7000

DUAL SILICON SWITCHING DIODE SERIES CONNECTION



SOT-23 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPD7000 type is an ultra-high speed silicon switching diodes manufactured by the epitaxial planar process, in an epoxy molded surface mount package, connected in a series configuration, designed for high speed switching applications.
Marking Code is C5C.

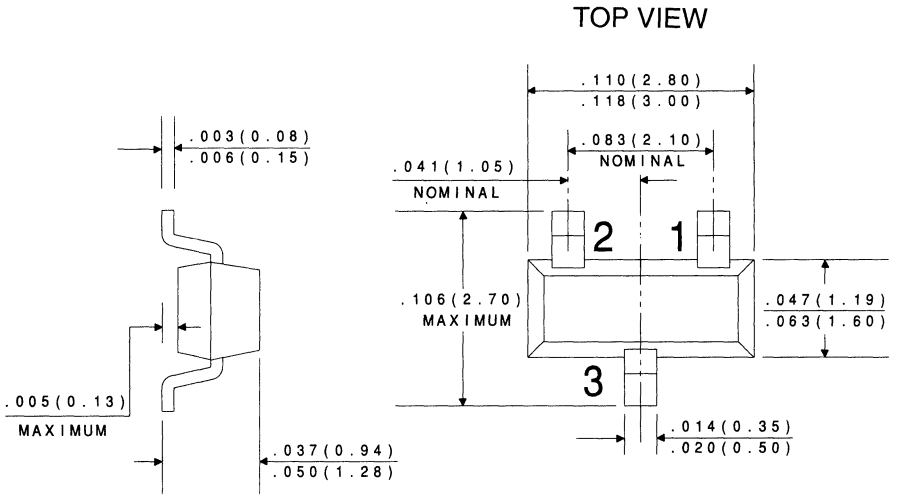
MAXIMUM RATINGS (T_A=25°C)

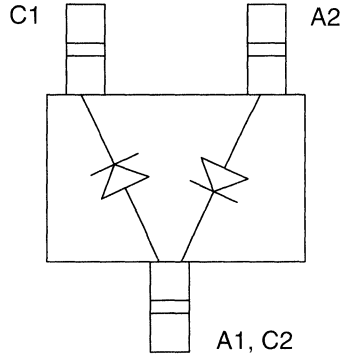
	SYMBOL		UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	100	V
Average Forward Current	I_O	200	mA
Peak Forward Current	I_{FM}	500	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
BV_R	I_R=100μA	100			V
I_R	V_R=50V			300	nA
I_R	V_R=50V, T_A=125°C			100	μA
I_R	VR=100V			500	nA
V_F	I_F=1.0mA	0.55		0.70	V
V_F	I_F=10mA	0.67		0.82	V
V_F	I_F=100mA	0.75		1.10	V
C_T	V_R=0, f=1 MHz			1.5	pF
t_{rr}	I_R=IF=10mA, R_L=100Ω, Rec. to 1.0mA		2.0	4.0	ns

All dimensions in inches (mm).



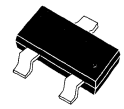


DATA SHEET

R1

CMPF4391
CMPF4392
CMPF4393

N-CHANNEL JFET



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPF4391 series types are N-Channel Silicon Field Effect Transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for switching applications.
Marking Codes are 6J, 6K, and 6G Respectively.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Drain-Gate Voltage	V_{GD}	40	V
Gate-Source Voltage	V_{GS}	40	V
Drain-Source Voltage	V_{DS}	40	V
Gate Current	I_G	50	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

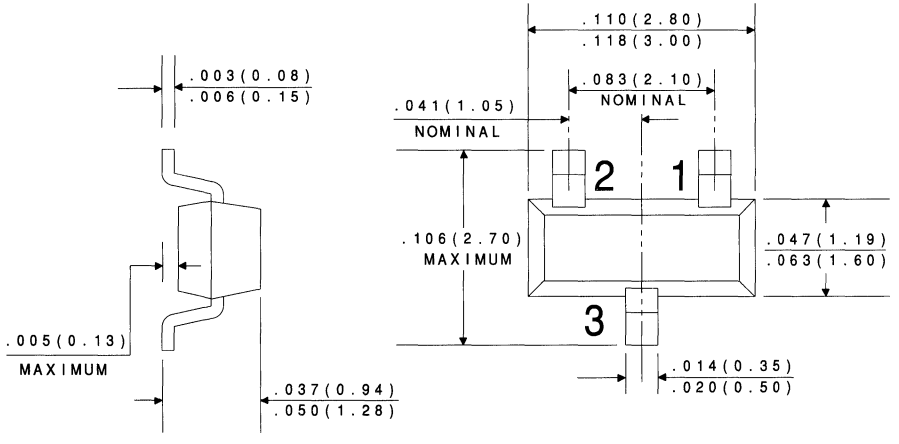
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

		CMPF4391		CMPF4392		CMPF4393		
SYMBOL	TEST CONDITIONS	MIN	MAX	MIN	MAX	MIN	MAX	UNITS
I_{GSS}	V_{GS}=20V		0.1		0.1		0.1	nA
I_{GSS}	V_{GS}=20V, T_A=100°C		0.2		0.2		0.2	μA
I_{DSS}	V_{DS}=20V	50	150	25	75	5.0	30	mA
$I_{D(OFF)}$	V_{DS}=20V, V_{GS}=12V		0.1		-		-	nA
$I_{D(OFF)}$	V_{DS}=20V, V_{GS}=7.0V		-		0.1		-	nA
$I_{D(OFF)}$	V_{DS}=20V, V_{GS}=5.0V		-		-		0.1	nA
$I_{D(OFF)}$	V_{DS}=20V, V_{GS}=12V,T_A=100°C		0.2		-		-	μA
$I_{D(OFF)}$	V_{DS}=20V, V_{GS}=7.0V, T_A=100°C		-		0.2		-	μA
$I_{D(OFF)}$	V_{DS}=20V, V_{GS}=5.0V, T_A=100°C		-		-		0.2	μA
BV_{GSS}	I_G=1.0μA	40		40		40		V
$V_{GS(OFF)}$	V_{DS}=20V, I_D=1.0nA	4.0	10	2.0	5.0	0.5	3.0	V
$V_{GS(f)}$	I_G=1.0mA		1.0		1.0		1.0	V
$V_{DS(ON)}$	I_D=12mA		0.4		-		-	V
$V_{DS(ON)}$	I_D=6.0mA		-		0.4		-	V
$V_{DS(ON)}$	I_D=3.0mA		-		-		0.4	V

SYMBOL	TEST CONDITIONS	CMPF4391 MIN	CMPF4391 MAX	CMPF4392 MIN	CMPF4392 MAX	CMPF4393 MIN	CMPF4393 MAX	UNITS
$r_{DS(ON)}$	I_D=1.0mA, V_{GS}=0		30		60		100	Ω
$r_{ds(ON)}$	V_{GS}=0, I_D=0, f=1.0kHz		30		60		100	Ω
C_{iss}	V_{DS}=20V, V_{GS}=0, f=1.0MHz		14		14		14	pF
C_{rss}	V_{GS}=12V, V_{DS}=0, f=1.0MHz		3.5		-		-	pF
C_{rss}	V_{GS}=7.0V, V_{DS}=0, f=1.0MHz		-		3.5		-	pF
C_{rss}	V_{GS}=5.0V, V_{DS}=0, f=1.0MHz		-		-		3.5	pF
t_{ON}	$I_{D(ON)}$=12mA		15		-		-	ns
t_{ON}	$I_{D(ON)}$=6.0mA		-		15		-	ns
t_{ON}	$I_{D(ON)}$=3.0mA		-		-		15	ns
t_{OFF}	$V_{GS(OFF)}$=12V		20		-		-	ns
t_{OFF}	$V_{GS(OFF)}$=7.0V		-		35		-	ns
t_{OFF}	$V_{GS(OFF)}$=5.0V		-		-		50	ns

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

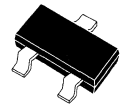
1) DRAIN
2) SOURCE
3) GATE

DATA SHEET

R1

CMPF4416A

SILICON N-CHANNEL JFET



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPF4416A type is an epoxy molded N-Channel Silicon Junction Field Effect Transistor manufactured in an SOT-23 case, designed for VHF amplifier and mixer applications.
Marking code is 6BG.

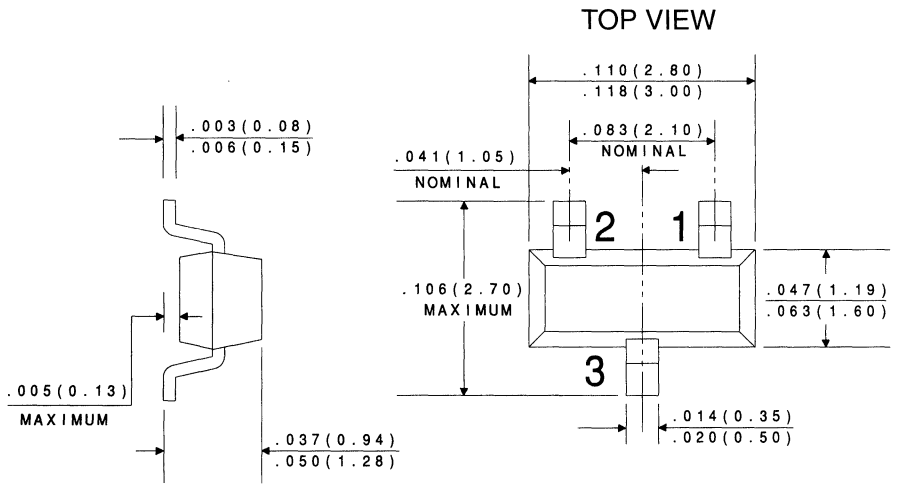
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Drain-Source Voltage	V_{DS}	35	V
Gate-Source Voltage	V_{GS}	35	V
Gate Current	I_G	10	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{GSS}	V_{GS}=20V		1.0	nA
I_{DSS}	V_{DS}=15V, V_{GS}=0	5.0	15	mA
BV_{GSS}	I_G=1.0μA	35		V
$V_{GS(off)}$	V_{DS}=15V, ID=1.0nA	2.5	6.0	V
g_{fs}	V_{DS}=15V, V_{GS}=0, f=1.0kHz	4.5	7.5	mmhos
C_{iss}	V_{DS}=15V, V_{GS}=0, f=1.0MHz		4.5	pF
C_{rss}	V_{DS}=15V, V_{GS}=0, f=1.0MHz		1.2	pF
N_F	V_{DS}=15V, V_{GS}=0, f=1.0kHz, R_G=1.0MΩ		2.5	dB

All dimensions in inches (mm).

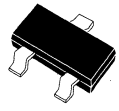


LEAD CODE:

1) DRAIN
2) SOURCE
3) GATE

CMPS5064

SILICON CONTROLLED RECTIFIER



SOT-23 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPS5064 type is an epoxy molded PNPN Silicon Controlled Rectifier manufactured in an SOT-23 case, designed for control systems and sensing circuit applications.
Marking code is O2D.

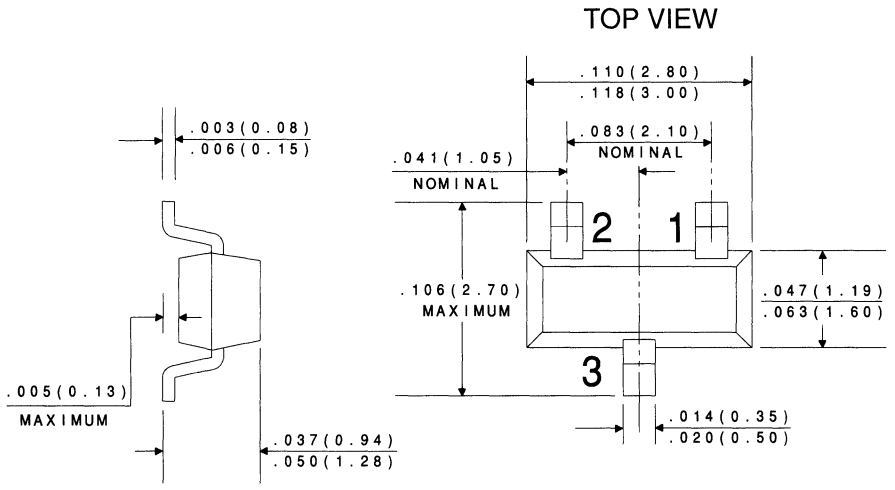
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Peak Repetitive Off-State Voltage	V_{DRM}	400	V
Peak Repetitive Reverse Voltage	V_{RRM}	400	V
RMS On-State Current	$I_{T(RMS)}$	0.8	A
Average On-State Current (T_C=67°C)	$I_{T(AV)}$	0.51	A
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{DRM}	V_D=400V, R_{GK}=1KΩ, T_C=125°C		50	μA
I_{RRM}	V_D=400V, R_{GK}=1KΩ, T_C=125°C		50	μA
V_T	I_T=1.2A		1.7	V
I_{GT}	V_D=7.0V, R_L=100Ω, R_{GK}=1KΩ		200	μA
V_{GT}	V_D=7.0V, R_L=100Ω, R_{GK}=1KΩ		0.8	V
V_{GD}	V_D=400V, R_L=100Ω, T_C=125°C	0.1		V
I_H	V_D=7.0, R_{GK}=1KΩ		5.0	mA
t_{ON}	V_D=400V, I_{GT}=1.0mA, R_{GK}=1.0Ω, di/dt=6.0A/μs	2.8 TYP		μs

All dimensions in inches (mm).

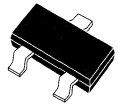


LEAD CODE:

1) CATHODE
2) GATE
3) ANODE

CMPSH-3
CMPSH-3A
CMPSH-3C
CMPSH-3S

SCHOTTKY DIODES



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPSH-3 Series types are Silicon Schottky diodes designed for surface mount fast switching applications requiring a low forward voltage drop.

The following configurations are available:

CMPSH-3	SINGLE	**MARKING CODE: D95**
CMPSH-3A	DUAL, COMMON ANODE	**MARKING CODE: DB1**
CMPSH-3C	DUAL, COMMON CATHODE	**MARKING CODE: DB2**
CMPSH-3S	DUAL, IN SERIES	**MARKING CODE: DA5**

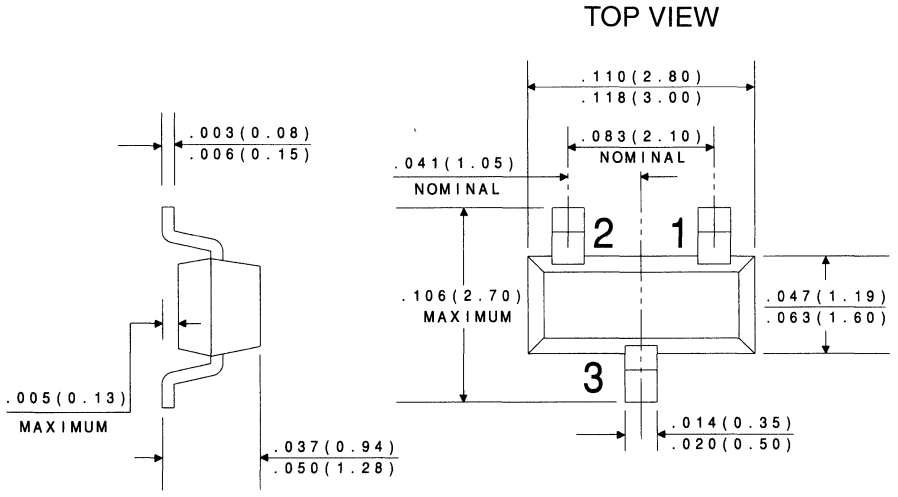
MAXIMUM RATINGS (T_A=25°C)

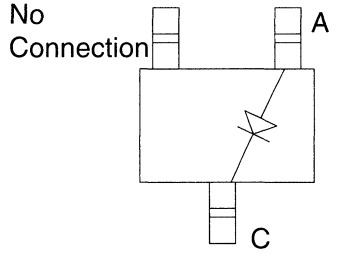
	SYMBOL		UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	30	V
Continuous Forward Current	I_F	100	mA
Peak Repetitive Forward Current	I_{FRM}	350	mA
Forward Surge Current, tp=10 ms	I_{FSM}	750	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

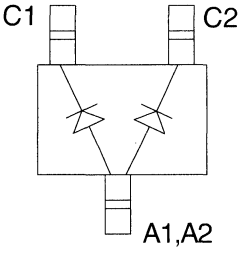
SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
B_{VR}	I_R=100μA	30			V
V_F	I_F=2.0mA		0.29	0.33	V
V_F	I_F=15mA		0.40	0.45	V
V_F	I_F=100mA		0.74	1.00	V
I_R	V_R=25V		90	500	nA
I_R	V_R=25V, T_A=100°C		25	100	μA
C_T	V_R=1.0V, f=1 MHz		7.0		pF
t_{rr}	I_F=I_R=10mA, I_{rr}=1.0mA, R_L=100Ω			5.0	ns

All dimensions in inches (mm).

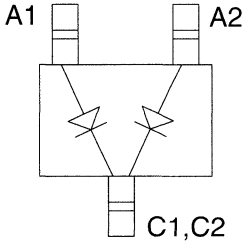




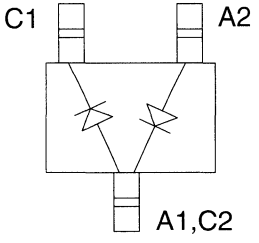
CMPSH-3



CMPSH-3A



CMPSH-3C



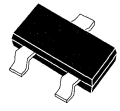
CMPSH-3S

DATA SHEET

R1

CMPT918

NPN SILICON RF TRANSISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT918 type is an NPN silicon RF transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for high frequency (VHF/UHF) amplifier and oscillator applications.
Marking code is C3B.

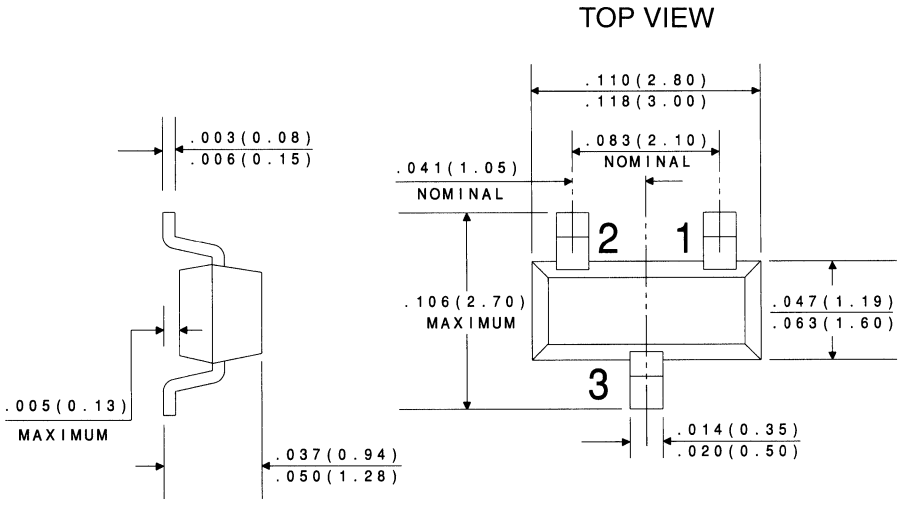
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	30	V
Collector-Emitter Voltage	V_{CEO}	15	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current	I_C	50	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=15V		10	nA
BV_{CBO}	I_C=1.0μA	30		V
BV_{CEO}	I_C=3.0mA	15		V
BV_{EBO}	I_E=10μA	3.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.4	V
$V_{BE(SAT)}$	I_C=10mA, IB=1.0mA		1.0	V
h_{FE}	V_{CE}=1.0V, I_C=3.0mA	20		
f_T	V_{CE}=10V, I_C=4.0mA, f=100MHz	600		MHz
C_{ob}	V_{CB}=0V, I_E=0, f=1.0MHz		3.0	pF
C_{ob}	V_{CB}=10V, IE=0, f=1.0MHz		1.7	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		2.0	pF
P_{out}	V_{CB}=15V, I_C=8.0mA, f=500MHz	30		mW
G_{pe}	V_{CB}=12V, I_C=6.0mA, f=200MHz	11		dB
NF	V_{CE}=6.0V, I_C=1.0mA, R_S=50Ω, f=60MHz		6.0	dB

All dimensions in inches (mm).



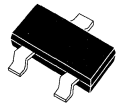
LEAD CODE:

1) BASE
2) EMITTER
3) COLLECTOR

R1

CMPT930

NPN SILICON TRANSISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION

The CENTRAL SEMICONDUCTOR CMPT930 type is an NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for small signal general purpose amplifier applications.
Marking Code is C1X.

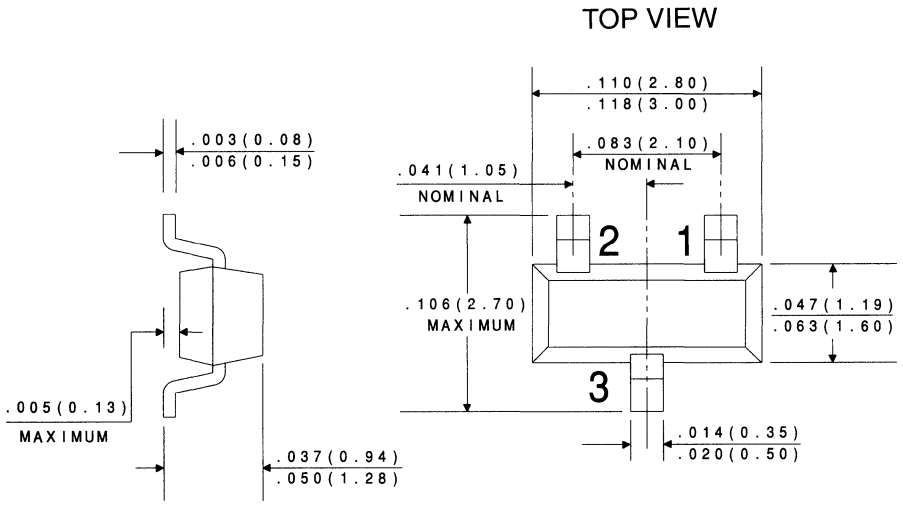
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	45	V
Collector-Emitter Voltage	V_{CEO}	45	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	30	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=45V		10	nA
I_{CEO}	V_{CE}=5.0V		10	nA
I_{CES}	V_{CE}=45V		10	nA
I_{EBO}	V_{EB}=5.0V		10	nA
BV_{CBO}	I_C=10μA	45		V
BV_{CEO}	I_C=10mA	45		V
BV_{EBO}	I_E=10μA	5.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=0.5mA		1.0	V
$V_{BE(SAT)}$	I_C=10mA, I_B=0.5mA	0.6	1.0	V
h_{FE}	V_{CE}=5.0V, I_C=10μA	100	300	
h_{FE}	V_{CE}=5.0V, I_C=500μA	150		
h_{FE}	V_{CE}=5.0V, I_C=10mA		600	
f_T	V_{CE}=5.0V, I_C=500mA, f=30MHz	30		MHz
C_{ob}	V_{CB}=5.0V, I_E=0, f=1.0MHz		8.0	pF
NF	V_{CE}=5.0V, I_C=10mA, R_S=10kΩ, f=10Hz to 15.7kHz		3.0	dB

All dimensions in inches (mm).



LEAD CODE:

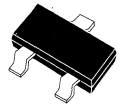
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R1

CMPT2222A

NPN SILICON TRANSISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT2222A type is an NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for small signal general purpose and switching applications.
Marking Code is C1P.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	75	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	600	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

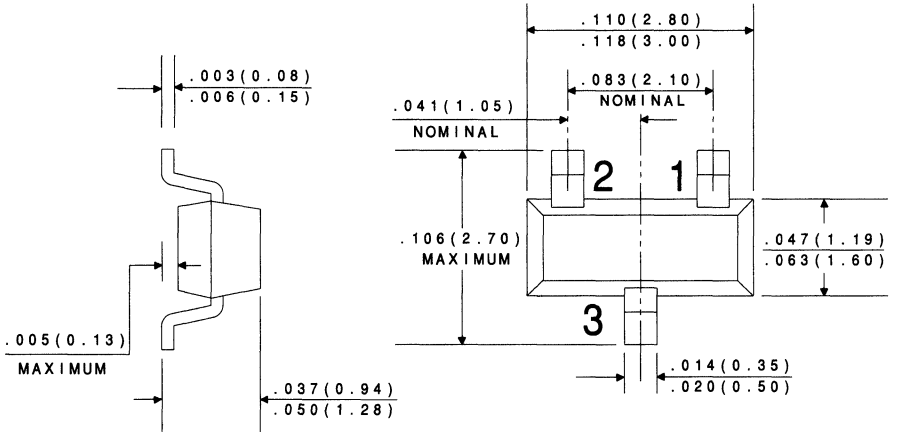
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=60V		10	nA
I_{CBO}	V_{CB}=60V, T_A=125°C		10	μA
I_{CEV}	V_{CE}=60V, V_{EB}=3.0V		10	nA
I_{EBO}	V_{EB}=3.0V		10	nA
BV_{CBO}	I_C=10μA	75		V
BV_{CEO}	I_C=10mA	40		V
BV_{EBO}	I_E=10μA	6.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.3	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		1.0	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA	0.6	1.2	V
$V_{BE(SAT)}$	I_C=500mA, I_B=50mA		2.0	V
h_{FE}	V_{CE}=10V, I_C=0.1mA	35		
h_{FE}	V_{CE}=10V, I_C=1.0mA	50		
h_{FE}	V_{CE}=10V, I_C=10mA	75		
h_{FE}	V_{CE}=1.0V, I_C=150mA	50		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=10V, I_C=150mA	100	300	
h_{FE}	V_{CE}=10V, I_C=500mA	40		
f_T	V_{CE}=20V, I_C=20mA, f=100MHz	300		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		8.0	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		25	pF
h_{ie}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	2.0	8.0	kΩ
h_{ie}	V_{CE}=10V, I_C=10mA, f=1.0kHz	0.25	1.25	kΩ
h_{re}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz		8.0	$x10^{-4}$
h_{re}	V_{CE}=10V, I_C=10mA, f=1.0kHz		4.0	$x10^{-4}$
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	50	300	
h_{fe}	V_{CE}=10V, I_C=10mA, f=1.0kHz	75	375	
h_{oe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	5.0	35	μmhos
h_{oe}	V_{CE}=10V, I_C=10mA, f=1.0kHz	25	200	μmhos
$rb'C_c$	V_{CB}=10V, I_E=20mA, f=31.8MHz		150	ps
NF	V_{CE}=10V, I_C=100μA, R_S=1.0kΩ, f=1.0kHz		4.0	dB
t_d	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		10	ns
t_r	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		25	ns
t_s	V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA		225	ns
t_f	V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA		60	ns

All dimensions in inches (mm).

TOP VIEW

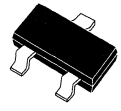


LEAD CODE:
1) BASE
2) EMITTER
3) COLLECTOR

R1

CMPT2369

NPN SILICON TRANSISTOR



SOT-23 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT2369 type is an NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for ultra high speed switching applications.

Marking Code is C1J.

MAXIMUM RATINGS (T_A=25°C)

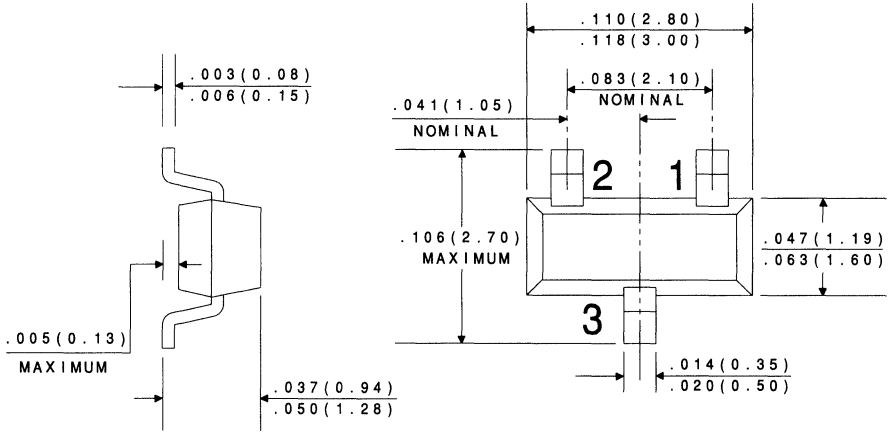
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	40	V
Collector-Emitter Voltage	V_{CES}	40	V
Collector-Emitter Voltage	V_{CEO}	15	V
Emitter-Base Voltage	V_{EBO}	4.5	V
Collector Current	I_C	500	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=20V		0.4	μA
I_{CBO}	V_{CB}=20V, T_A=125°C		30	μA
BV_{CBO}	I_C=10μA	40		V
BV_{CES}	I_C=10μA	40		V
BV_{CEO}	I_C=10mA	15		V
BV_{EBO}	I_E=10μA	4.5		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.25	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA	0.7	0.85	V
h_{FE}	V_{CE}=1.0V, I_C=10mA	40	120	
h_{FE}	V_{CE}=2.0V, I_C=100mA	20		
C_{ob}	V_{CB}=5.0V, I_E=0, f=1.0MHz		4.0	pF
f_T	V_{CE}=10V, I_C=10mA, f=100MHz	500		MHz
t_s	V_{CC}=3.0V, I_C=I_{B1}=I_{B2}=10mA		13	ns
t_{on}	V_{CC}=3.0V, I_C=10mA, I_{B1}=3.0mA		12	ns
t_{off}	V_{CC}=3.0V, I_C=10mA, I_{B1}=3.0mA, I_{B2}=1.5mA		18	ns

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

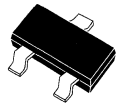
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R1

CMPT2484

NPN SILICON
LOW NOISE TRANSISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT2484 type is an NPN silicon low noise transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for low noise amplifier applications.
Marking Code is C1U.

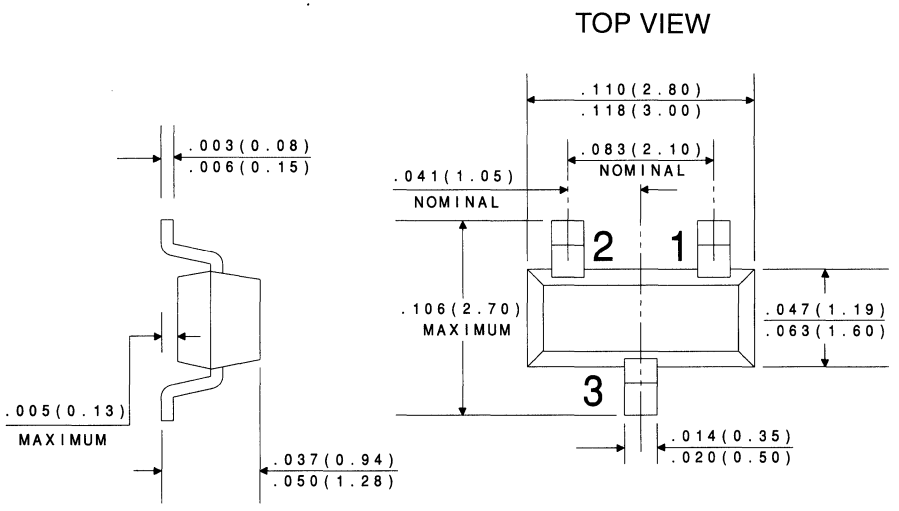
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	50	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=45V		10	nA
I_{CBO}	V_{CB}=45V, T_A=150°C		10	μA
I_{EBO}	V_{EB}=5.0V		10	nA
BV_{CBO}	I_C=10μA	60		V
BV_{CEO}	I_C=10mA	60		V
BV_{EBO}	I_E=10μA	5.0		V
$V_{CE(SAT)}$	I_C=1.0mA, I_B=100μA		0.35	V
$V_{BE(ON)}$	V_{CE}=5.0V, I_C=1.0mA		0.95	V
h_{FE}	V_{CE}=5.0V, I_C=1.0mA	250	---	
h_{FE}	V_{CE}=5.0V, I_C=10mA	---	800	
C_{ob}	V_{CB}=5.0V, I_E=0, f=1.0MHz		6.0	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		6.0	pF
NF	V_{CE}=5.0V, I_C=10μA, RS=10kΩ f=1.0kHz, BW=200Hz		3.0	dB

All dimensions in inches (mm).



LEAD CODE:

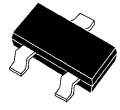
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R1

CMPT2907A

PNP SILICON TRANSISTOR



SOT-23 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT2907A type is an PNP silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for small signal general purpose and switching applications.
Marking Code is C2F.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	600	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

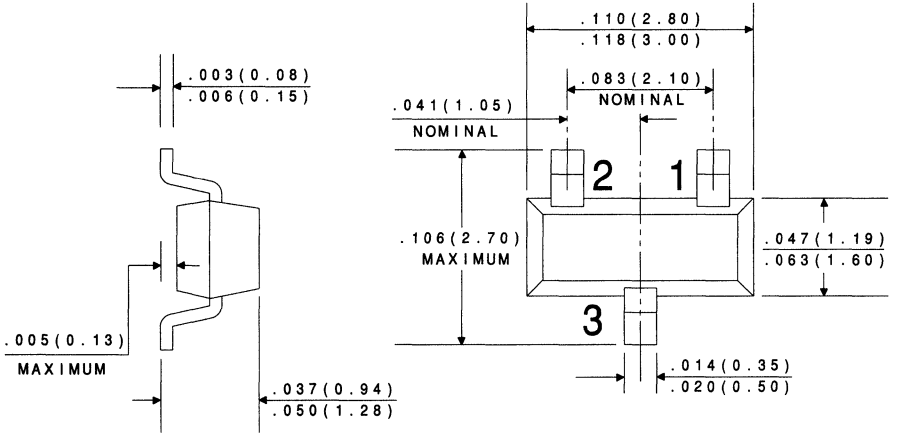
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=50V		10	nA
I_{CBO}	V_{CB}=50V, T_A=125°C		10	μA
I_{CEV}	V_{CE}=30V, V_{BE}=0.5V		50	nA
BV_{CBO}	I_C=10μA	60		V
BV_{CEO}	I_C=10mA	60		V
BV_{EBO}	I_E=10μA	5.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.4	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		1.6	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA		1.3	V
$V_{BE(SAT)}$	I_C=500mA, I_B=50mA		2.6	V
h_{FE}	V_{CE}=10V, I_C=0.1mA	75		
h_{FE}	V_{CE}=10V, I_C=1.0mA	100		
h_{FE}	V_{CE}=10V, I_C=10mA	100		
h_{FE}	V_{CE}=10V, I_C=150mA	100	300	

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=10V, I_C=500mA	50		
f_T	V_{CE}=20V, I_C=50mA, f=100MHz	200		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		8.0	pF
C_{ib}	V_{BE}=2.0V, I_C=0, f=1.0MHz		30	pF
t_{on}	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		45	ns
t_d	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		10	ns
t_r	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		40	ns
t_{off}	V_{CC}=6.0V, I_C=150mA, I_{B1}=I_{B2}=15mA		100	ns
t_s	V_{CC}=6.0V, I_C=150mA, I_{B1}=I_{B2}=15mA		80	ns
t_f	V_{CC}=6.0V, I_C=150mA, I_{B1}=I_{B2}=15mA		30	ns

All dimensions in inches (mm).

TOP VIEW



DATA SHEET

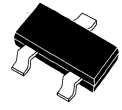
LEAD CODE:

1) BASE
2) EMITTER
3) COLLECTOR

R1

CMPT3019

NPN SILICON TRANSISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION

The CENTRAL SEMICONDUCTOR CMPT3019 type is an NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for very high current, general purpose amplifier applications.
Marking Code is C3A.

MAXIMUM RATINGS (T_A=25°C)

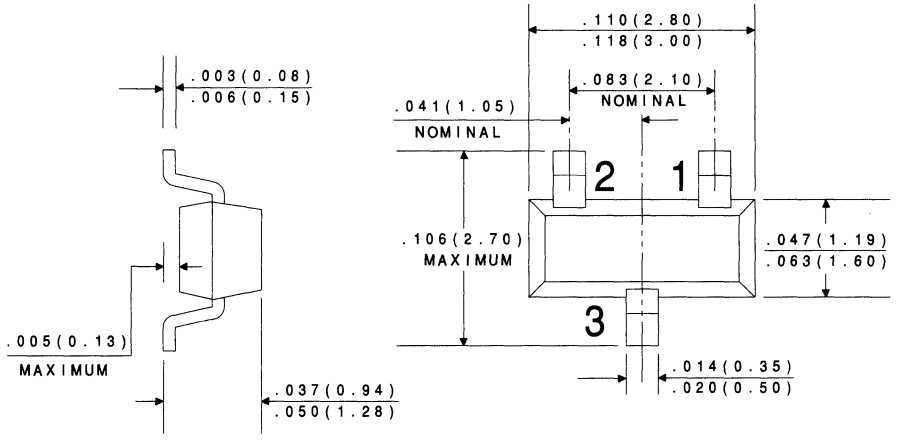
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	120	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	7.0	V
Collector Current	I_C	500	mA
Collector Current (Peak)	I_{CM}	1.0	A
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=90V		10	nA
I_{EBO}	V_{EB}=5.0V		10	nA
BV_{CBO}	I_C=100μA	120		V
BV_{CEO}	I_C=30mA	80		V
BV_{EBO}	I_E=100μA	7.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.2	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		0.5	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA		1.1	V
h_{FE}	V_{CE}=10V, I_C=0.1mA	50		
h_{FE}	V_{CE}=10V, I_C=10mA	90		
h_{FE}	V_{CE}=10V, I_C=150mA	100	300	
h_{FE}	V_{CE}=10V, I_C=500mA	50		
f_T	V_{CE}=10V, I_C=50mA, f=1.0MHz	100		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		12	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		60	pF
NF	V_{CE}=10V, I_C=100mA, R_S=1kΩ, f=1.0kHz		4.0	dB

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

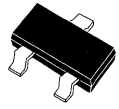
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R1

CMPT3640

PNP SILICON TRANSISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT3640 type is an PNP silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for saturated switching applications.
Marking code is C2J.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	12	V
Collector-Emitter Voltage	V_{CEO}	12	V
Emitter-Base Voltage	V_{EBO}	4.0	V
Collector Current	I_C	80	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

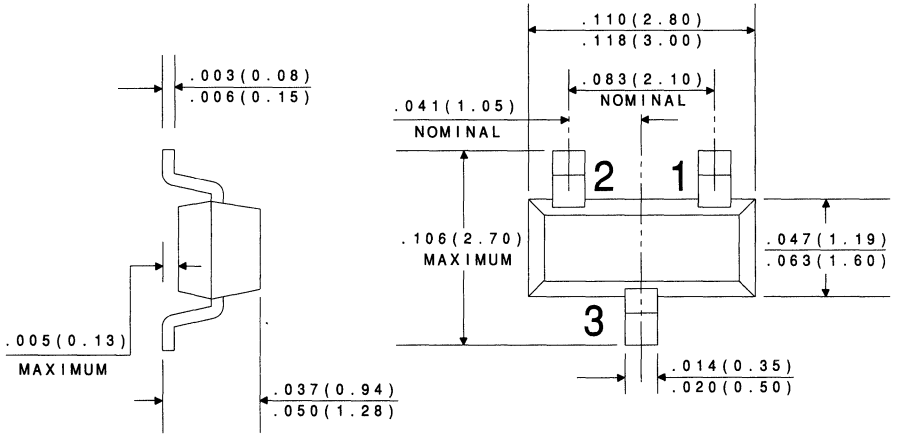
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CES}	V_{CE}=6.0V		10	nA
I_{CES}	V_{CE}=6.0V, T_A=65°C		10	μA
I_B	V_{CE}=6.0V, V_{EB}=0		10	nA
BV_{CBO}	I_C=100μA	12		V
BV_{CEO}	I_C=10mA	12		V
BV_{EBO}	I_E=100μA	4.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.20	V
$V_{CE(SAT)}$	I_C=50mA, I_B=5.0mA		0.60	V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA, T_A=65°C		0.25	V
$V_{BE(SAT)}$	I_C=10mA, I_B=0.5mA	0.75	0.95	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA	0.80	1.00	V
$V_{BE(SAT)}$	I_C=50mA, I_B=5.0mA		1.50	V
h_{FE}	V_{CE}=0.3V, I_C=10mA	30	120	

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=1.0V, I_C=50mA	20		
f_T	V_{CE}=5.0V, I_C=10mA, f=100MHz	500		MHz
C_{ob}	V_{CB}=5.0V, I_E=0, f=1.0MHz		3.5	pF
C_{ib}	V_{BE}=0.5V, I_C=0, f=1.0MHz		3.5	pF
t_d	V_{CC}=6.0V, V_{BE}=1.9, I_C=50mA, I_{B1}=5.0mA		10	ns
t_r	V_{CC}=6.0V, V_{BE}=1.9, I_C=50mA, I_{B1}=5.0mA		30	ns
t_s	V_{CC}=6.0V, I_C=50mA, I_{B1}=I_{B2}=5.0mA		20	ns
t_f	V_{CC}=6.0V, I_C=50mA, I_{B1}=I_{B2}=5.0mA		12	ns
t_{on}	V_{CC}=6.0V, V_{BE}=1.9, I_C=50mA, I_{B1}=5.0mA		25	ns
t_{on}	V_{CC}=1.5V, I_C=10mA, I_{B1}=0.5mA		60	ns
t_{off}	V_{CC}=6.0V, V_{BE}=1.9, I_C=50mA, I_{B1}=5.0mA		35	ns
t_{off}	V_{CC}=1.5V, I_C=10mA, I_{B1}=I_{B2}=0.5mA		75	ns

All dimensions in inches (mm).

TOP VIEW



DATA SHEET

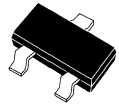
LEAD CODE:

1) BASE
2) EMITTER
3) COLLECTOR

R1

CMPT3646

NPN SILICON TRANSISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT3646 type is an NPN Silicon Transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for high current, ultra high speed switching applications.
Marking code is C2R.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	40	V
Collector-Emitter Voltage	V_{CES}	40	V
Collector-Emitter Voltage	V_{CEO}	15	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	200	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

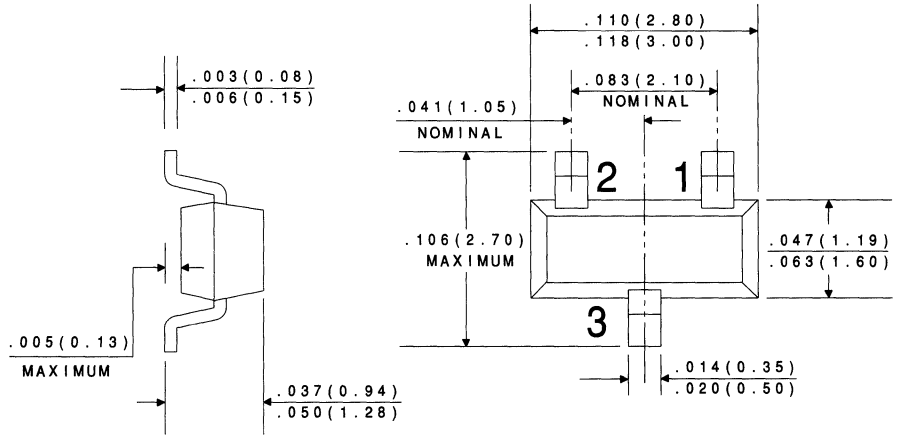
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN		MAX	UNITS
I_{CES}	V_{CE}=20V			0.5	μA
I_{CES}	V_{CE}=20V, T_A=65°C			3.0	μA
BV_{CBO}	I_C=100μA	40			V
BV_{CES}	I_C=10μA	40			V
BV_{CEO}	I_C=10mA	15			V
BV_{EBO}	I_E=100μA	5.0			V
$V_{CE(SAT)}$	I_C=30mA, I_B=3.0mA			0.20	V
$V_{CE(SAT)}$	I_C=30mA, I_B=3.0mA, T_A=65°C			0.30	V
$V_{CE(SAT)}$	I_C=100mA, I_B=10mA			0.28	V
$V_{CE(SAT)}$	I_C=300mA, I_B=30mA			0.50	V
$V_{BE(SAT)}$	I_C=30mA, I_B=3.0mA	0.75		0.95	V
$V_{BE(SAT)}$	I_C=100mA, I_B=10mA			1.20	V
$V_{BE(SAT)}$	I_C=300mA, I_B=30mA			1.70	V
h_{FE}	V_{CE}=0.4V, I_C=30mA	30		120	
h_{FE}	V_{CE}=0.5V, I_C=100mA	25	25		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=1.0V, I_C=300mA	15		
f_T	V_{CE}=10V, I_C=30mA, f=100MHz	350		MHz
C_{ob}	V_{CB}=5.0V, I_E=0, f=1.0MHz		5.0	pF
C_{ib}	V_{BE}=0.5V, I_C=0, f=1.0MHz		8.0	pF
t_{on}	V_{CC}=10V, I_C=300mA, I_{B1}=30mA		18	ns
t_{off}	V_{CC}=10V, I_C=300mA, I_{B1}=I_{B2}=30mA		28	ns
t_S	V_{CC}=10V, I_C=I_{B1}=I_{B2}=10mA		18	ns

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

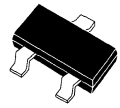
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R1

CMPT3904 NPN
CMPT3906 PNP

COMPLEMENTARY SILICON TRANSISTORS



SOT-23 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT3904, CMPT3906 types are complementary silicon transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for small signal general purpose amplifier and switching applications.
Marking Codes are C1A, C2A Respectively.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL	CMPT3904	CMPT3906	UNITS
Collector-Base Voltage	V_{CBO}	60	40	V
Collector-Emitter Voltage	V_{CEO}	40	40	V
Emitter-Base Voltage	V_{EBO}	6.0	5.0	V
Collector Current	I_C	200		mA
Power Dissipation	P_D	350		mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150		°C
Thermal Resistance	Θ_{JA}	357		°C/W

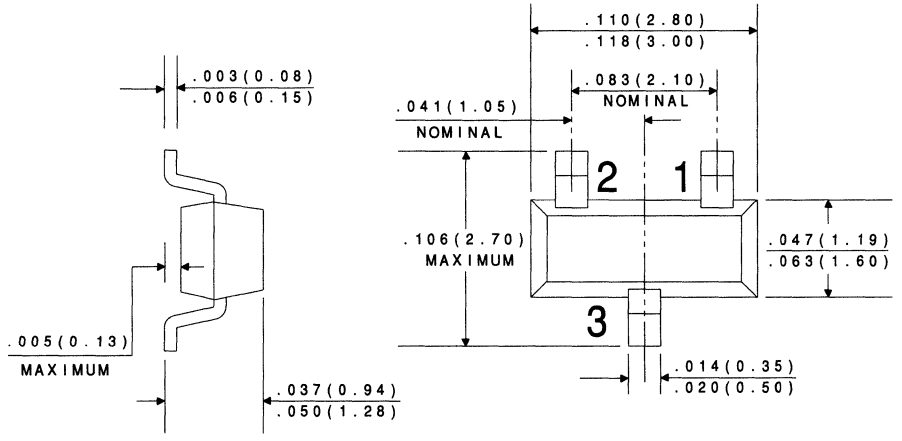
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

		CMPT3904		CMPT3906		
SYMBOL	**TEST CONDITIONS**	**MIN**	**MAX**	**MIN**	**MAX**	**UNITS**
I_{CEV}	V_{CE}=30V, V_{EB}=3.0V		50		50	nA
I_{BL}	V_{CE}=30V, V_{EB}=3.0V		50			nA
BV_{CBO}	I_C=10μA	60		40		V
BV_{CEO}	I_C=1.0mA	40		40		V
BV_{EBO}	I_E=10μA	6.0		5.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.20		0.25	V
$V_{CE(SAT)}$	I_C=50mA, I_B=5.0mA		0.30		0.40	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA	0.65	0.85	0.65	0.85	V
$V_{BE(SAT)}$	I_C=50mA, I_B=5.0mA		0.95		0.95	V
h_{FE}	V_{CE}=1.0V, I_C=0.1mA	40		60		
h_{FE}	V_{CE}=1.0V, I_C=1.0mA	70		80		
h_{FE}	V_{CE}=1.0V, I_C=10mA	100	300	100	300	
h_{FE}	V_{CE}=1.0V, I_C=50mA	60		60		
h_{FE}	V_{CE}=1.0V, I_C=100mA	30		30		

SYMBOL	TEST CONDITIONS	CMPT3904 MIN	CMPT3904 MAX	CMPT3906 MIN	CMPT3906 MAX	UNITS
f_T	V_{CE}=20V, I_C=10mA, f=100MHz	300		250		MHz
C_{ob}	V_{CB}=5.0V, I_E=0, f=1.0MHz		4.0		4.5	pF
C_{ib}	V_{BE}=0.5V, I_C=0, f=1.0MHz		8.0		10	pF
h_{ie}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	1.0	10	2.0	12	kΩ
h_{re}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	0.5	8.0	0.1	10	$x10^{-4}$
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	100	400	100	400	
h_{oe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	1.0	40	3.0	60	μmhos
NF	V_{CE}=5.0V, I_C=100mA, R_S=1.0kΩ f=10Hz to 15.7kHz		5.0		4.0	dB
t_d	V_{CC}=3.0V, V_{BE}=0.5, I_C=10mA, I_{B1}=1.0mA		35		35	ns
t_r	V_{CC}=3.0V, V_{BE}=0.5, I_C=10mA, I_{B1}=1.0mA		35		35	ns
t_s	V_{CC}=3.0V, I_C=10mA, I_{B1}=I_{B2}=1.0mA		200		225	ns
t_f	V_{CC}=3.0V, I_C=10mA, I_{B1}=I_{B2}=1.0mA		50		75	ns

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

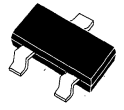
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R1

CMPT4033

PNP SILICON TRANSISTOR



SOT-23 CASE

Central™ Semiconductor Corp.

DESCRIPTION

The CENTRAL SEMICONDUCTOR CMPT4033 type is an PNP silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for very high current, general purpose amplifier applications.

Marking Code is C4A.

MAXIMUM RATINGS (T_A=25°C)

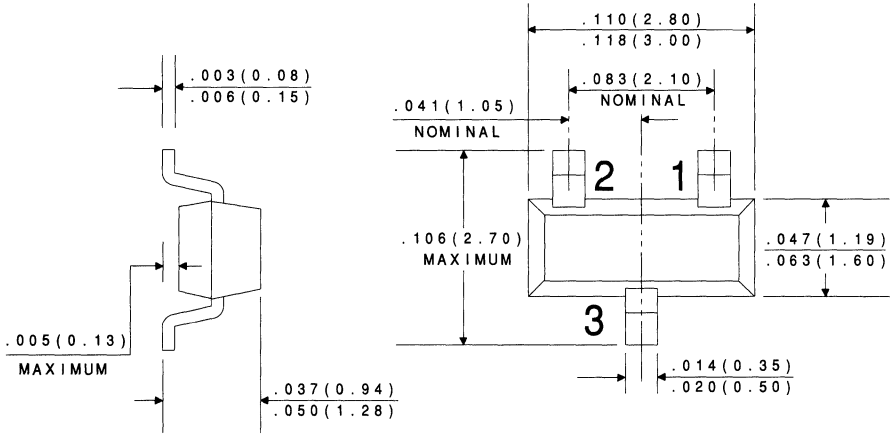
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	500	mA
Collector Current (Peak)	I_{CM}	1.0	A
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=60V		50	nA
I_{EBO}	V_{EB}=5.0V		10	nA
BV_{CBO}	I_C=10μA	80		V
BV_{CEO}	I_C=10mA	80		V
BV_{EBO}	I_E=10μA	5.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.15	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		0.50	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA		0.90	V
$V_{BE(SAT)}$	I_C=500mA, I_B=50mA		1.10	V
h_{FE}	V_{CE}=5.0V, I_C=0.1mA	75		
h_{FE}	V_{CE}=5.0V, I_C=100mA	100	300	
h_{FE}	V_{CE}=5.0V, I_C=500mA	70		
f_T	V_{CE}=10V, I_C=50mA, f=1.0MHz	100		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		20	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		110	pF

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

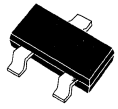
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R1

CMPT4401 NPN
CMPT4403 PNP

COMPLEMENTARY SILICON TRANSISTORS



SOT-23 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT4401, CMPT4403 types are complementary silicon transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for small signal general purpose amplifier and switching applications.
Marking Codes are C2X, C2T Respectively.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL	CMPT4401	CMPT4403	UNITS
Collector-Base Voltage	V_{CBO}	60	40	V
Collector-Emitter Voltage	V_{CEO}	40	40	V
Emitter-Base Voltage	V_{EBO}	6.0	5.0	V
Collector Current	I_C	600		mA
Power Dissipation	P_D	350		mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150		°C
Thermal Resistance	Θ_{JA}	357		°C/W

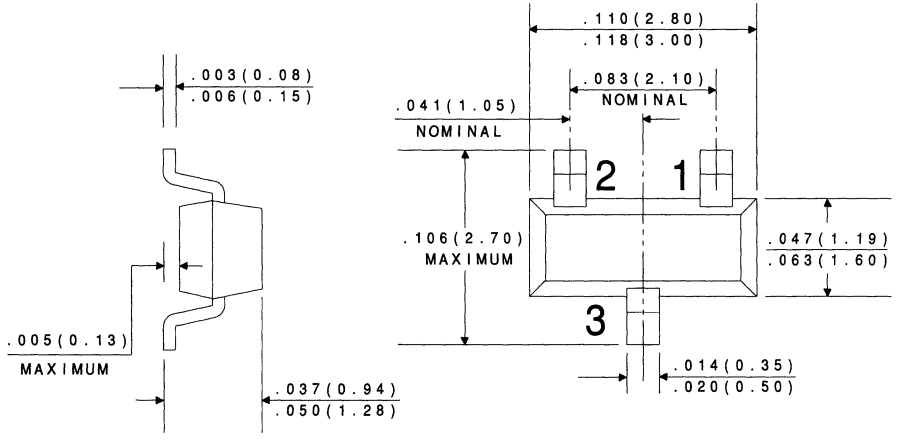
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

		CMPT4401		CMPT4403		
SYMBOL	TEST CONDITIONS	MIN	MAX	MIN	MAX	UNITS
I_{CEV}	V_{CE}=35V, V_{EB}=0.4V		0.1		0.1	μA
I_{BEV}	V_{CE}=35V, V_{EB}=0.4V		0.1		0.1	μA
BV_{CBO}	I_C=100μA	60		40		V
BV_{CEO}	I_C=1.0mA	40		40		V
BV_{EBO}	I_E=100μA	6.0		5.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.40		0.40	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		0.75		0.75	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA	0.75	0.95	0.75	0.95	V
$V_{BE(SAT)}$	I_C=500mA, I_B=50mA		1.2		1.3	V
h_{FE}	V_{CE}=1.0V, I_C=0.1mA	20		30		
h_{FE}	V_{CE}=1.0V, I_C=1.0mA	40		60		
h_{FE}	V_{CE}=1.0V, I_C=10mA	80		100		

SYMBOL	TEST CONDITIONS	CMPT4401 MIN	CMPT4401 MAX	CMPT4403 MIN	CMPT4403 MAX	UNITS
h_{FE}	V_{CE}=1.0V, I_C=150mA	100	300	-	-	
h_{FE}	V_{CE}=2.0V, I_C=150mA	-	-	100	300	
h_{FE}	V_{CE}=2.0V, I_C=500mA	40		20		
f_T	V_{CE}=10V, I_C=20mA, f=100MHz	250		200		MHz
C_{ob}	V_{CB}=5.0V, I_E=0, f=1.0MHz		6.5		8.5	pF
C_{ib}	V_{BE}=0.5V, I_C=0, f=1.0MHz		30		30	pF
h_{ie}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	1.0	15	1.5	15	kΩ
h_{re}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	0.1	8.0	0.1	8.0	$x10^{-4}$
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	40	500	60	500	
h_{oe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	1.0	30	1.0	100	μmhos
t_d	V_{CC}=30V, V_{BE}=2.0, I_C=150mA, I_{B1}=15mA		15		15	ns
t_r	V_{CC}=30V, V_{BE}=2.0, I_C=150mA, I_{B1}=15mA		20		20	ns
t_s	V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA		225		225	ns
t_f	V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA		30		30	ns

All dimensions in inches (mm).

TOP VIEW



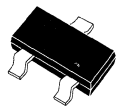
LEAD CODE:

1) BASE
2) EMITTER
3) COLLECTOR

R1

CMPT5086
CMPT5087

PNP SILICON TRANSISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT5086, CMPT5087 types are PNP silicon transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for applications requiring high gain and low noise.
Marking Codes are C2P and C2Q Respectively.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current	I_C	50	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

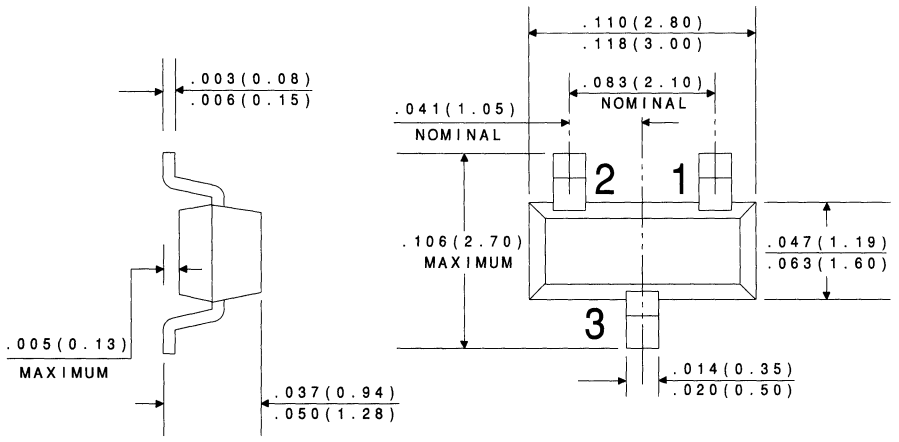
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

		CMPT5086		CMPT5087		
SYMBOL	**TEST CONDITIONS**	**MIN**	**MAX**	**MIN**	**MAX**	**UNITS**
I_{CBO}	V_{CB}=10V		10		10	nA
I_{CBO}	V_{CB}=35V		50		50	nA
BV_{CBO}	I_C=100μA	50		50		V
BV_{CEO}	I_C=1.0mA	50		50		V
BV_{EBO}	I_E=100μA	3.0		3.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.30		0.30	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA		0.85		0.85	V
h_{FE}	V_{CE}=5.0V, I_C=0.1mA	150	500	250	800	
h_{FE}	V_{CE}=5.0V, I_C=1.0mA	150		250		
h_{FE}	V_{CE}=5.0V, I_C=10mA	150		250		
f_T	V_{CE}=5.0V, I_C=500μA, f=20MHz	40		40		MHz
C_{ob}	V_{CB}=5.0V, I_E=0, f=1.0MHz		4.0		4.0	pF
h_{fe}	V_{CE}=5.0V, I_C=1.0mA, f=1.0kHz	150	600	250	900	

SYMBOL	TEST CONDITIONS	CMPT5086 MIN	CMPT5086 MAX	CMPT5087 MIN	CMPT5087 MAX	UNITS
NF	V_{CE}=5.0V, I_C=20mA, R_S=10kΩ f=10Hz to 15.7kHz		3.0		2.0	dB
NF	V_{CE}=5.0V, I_C=100μA, R_S=3.0kΩ, f=1.0kHz		3.0		2.0	dB

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

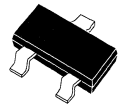
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R1

CMPT5088
CMPT5089

NPN SILICON TRANSISTORS



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT5088, CMPT5089 types are NPN silicon transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for applications requiring high gain and low noise.
Marking Codes are C1Q, C1R Respectively.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL	CMPT5088	CMPT5089	UNITS
Collector-Base Voltage	V_{CBO}	35	30	V
Collector-Emitter Voltage	V_{CEO}	30	25	V
Emitter-Base Voltage	V_{EBO}	4.5		V
Collector Current	I_C	50		mA
Power Dissipation	P_D	350		mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150		°C
Thermal Resistance	Θ_{JA}	357		°C/W

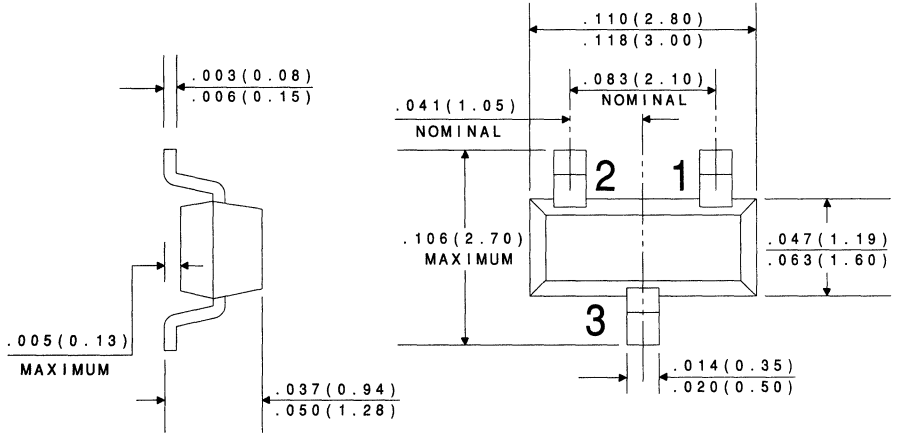
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

		CMPT5088		CMPT5089		
SYMBOL	TEST CONDITIONS	MIN	MAX	MIN	MAX	UNITS
I_{CBO}	V_{CB}=20V		50		-	nA
I_{CBO}	V_{CB}=15V		-		50	nA
I_{EBO}	V_{EB}=3.0V		50		-	nA
I_{EBO}	V_{EB}=4.5V		-		100	nA
BV_{CBO}	I_C=100μA	35		30		V
BV_{CEO}	I_C=1.0mA	30		25		V
BV_{EBO}	I_E=100μA	4.5		4.5		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.5		0.5	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA		0.8		0.8	V
h_{FE}	V_{CE}=5.0V, I_C=0.1mA	300	900	400	1200	
h_{FE}	V_{CE}=5.0V, I_C=1.0mA	350		450		
h_{FE}	V_{CE}=5.0V, I_C=10mA	300		400		
f_T	V_{CE}=5.0V, I_C=500μA, f=20MHz	50		50		MHz
C_{ob}	V_{CB}=5.0V, I_E=0, f=1.0MHz		4.0		4.0	pF

SYMBOL	TEST CONDITIONS	CMPT5088 MIN	CMPT5088 MAX	CMPT5089 MIN	CMPT5089 MAX	UNITS
C_{ib}	V_{BE}=0.5V, I_C=0, f=1.0MHz		10		10	pF
h_{fe}	V_{CE}=5.0V, I_C=1.0mA, f=1.0kHz	350	1400	450	1800	
NF	V_{CE}=5.0V, I_C=100μA, R_S=10kΩ f=10Hz to 15.7kHz		3.0		2.0	dB

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

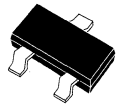
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R1

CMPT5179

NPN SILICON RF TRANSISTOR



SOT-23 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT5179 type is an NPN silicon RF transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for low noise, high frequency amplifier and high output oscillator applications.

Marking code is C7H.

MAXIMUM RATINGS (T_A=25°C)

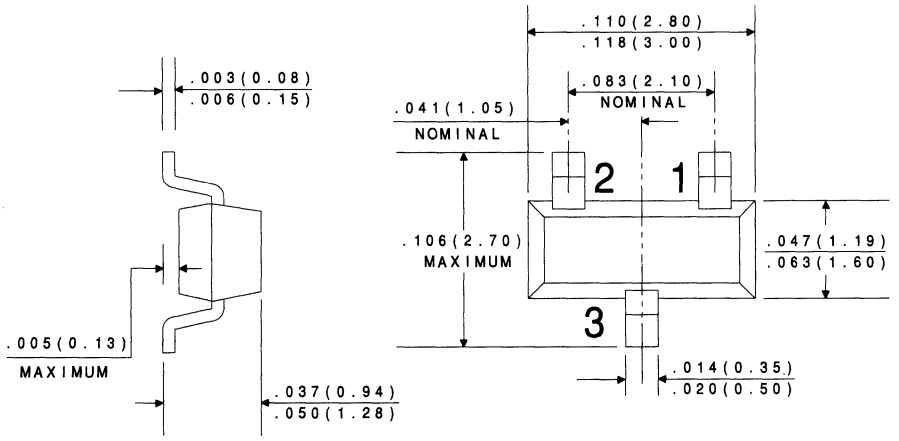
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	20	V
Collector-Emitter Voltage	V_{CEO}	12	V
Emitter-Base Voltage	V_{EBO}	2.5	V
Collector Current	I_C	50	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{CBO}	V_{CB}=15V			20	nA
BV_{CBO}	I_C=10μA	20			V
BV_{CEO}	I_C=3.0mA	12			V
BV_{EBO}	I_E=10μA	2.5			V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA			0.4	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA			1.0	V
h_{FE}	V_{CE}=1.0V, I_C=3.0mA	25			
f_T	V_{CE}=6.0V, I_C=5.0mA, f=100MHz	900	1450		MHz
C_{cb}	V_{CB}=10V, I_E=0, f=0.1 to 1.0MHz			1.0	pF
h_{fe}	V_{CE}=6.0V, I_C=2.0, f=1.0kHz	25			
G_{pe}	V_{CE}=6.0V, I_C=5.0mA, f=200MHz	15			dB
NF	V_{CE}=6.0V, I_C=1.5mA, R_S=50Ω, f=200MHz			4.5	dB

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

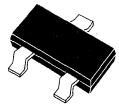
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R1

CMPT5401

PNP SILICON TRANSISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT5401 type is an PNP silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for high voltage amplifier applications.
Marking Code is C2L.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	160	V
Collector-Emitter Voltage	V_{CEO}	150	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	500	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

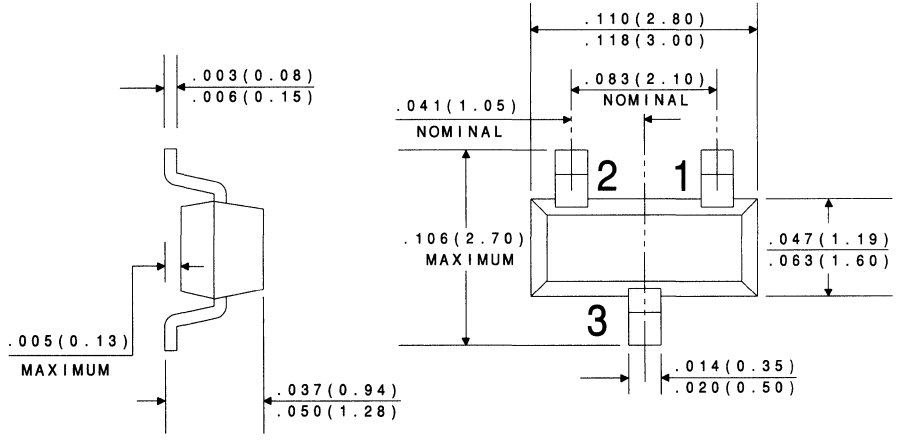
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=100V		50	nA
I_{CBO}	V_{CB}=100V, T_A=150°C		50	μA
BV_{CBO}	I_C=100μA	160		V
BV_{CEO}	I_C=1.0mA	150		V
BV_{EBO}	I_E=10μA	5.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.2	V
$V_{CE(SAT)}$	I_C=50mA, I_B=5.0mA		0.5	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA		1.0	V
$V_{BE(SAT)}$	I_C=50mA, I_B=5.0mA		1.0	V
h_{FE}	V_{CE}=5.0V, I_C=1.0mA	50		
h_{FE}	V_{CE}=5.0V, I_C=10mA	60	240	
h_{FE}	V_{CE}=5.0V, I_C=50mA	50		
f_T	V_{CE}=10V, I_C=10mA, f=100MHz	100	300	MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		6.0	pF

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	40	200	
NF	V_{CE}=5.0V, I_C=200μA, R_S=10Ω f=10Hz to 15.7kHz		8.0	dB

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

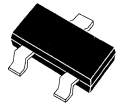
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R1

CMPT5551

NPN SILICON TRANSISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT5551 type is an NPN silicon transistor manufactured bythe epitaxial planar process, epoxy molded in a surface mount package, designed for high voltage amplifier applications.

Marking Code is 1FF.

MAXIMUM RATINGS (T_A=25°C)

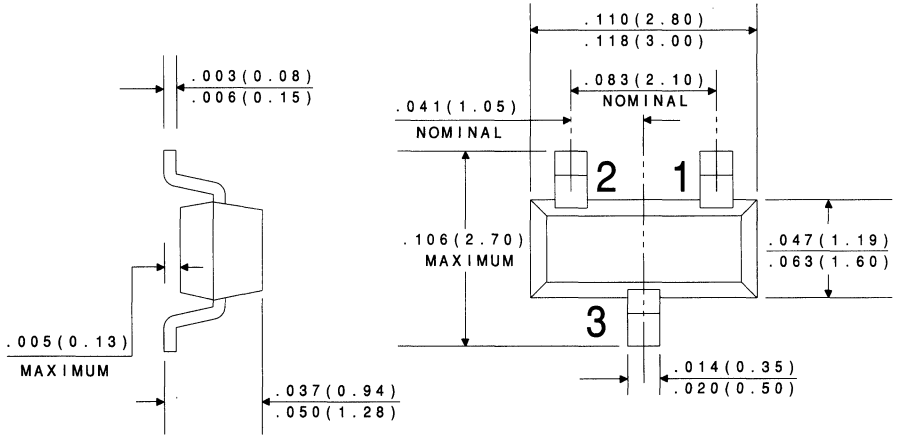
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	180	V
Collector-Emitter Voltage	V_{CEO}	160	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	600	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=120V		50	nA
I_{CBO}	V_{CB}=120V, T_A=100°C		50	μA
BV_{CBO}	I_C=100μA	180		V
BV_{CEO}	I_C=1.0mA	160		V
BV_{EBO}	I_E=10μA	6.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.15	V
$V_{CE(SAT)}$	I_C=50mA, I_B=5.0mA		0.20	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA		1.00	V
$V_{BE(SAT)}$	I_C=50mA, I_B=5.0mA		1.00	V
h_{FE}	V_{CE}=5.0V, I_C=1.0mA	80		
h_{FE}	V_{CE}=5.0V, IC=10mA	80	250	
h_{FE}	V_{CE}=5.0V, I_C=50mA	30		
f_T	V_{CE}=10V, I_C=10mA, f=100MHz	100	300	MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		6.0	pF

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	50	200	
N_F	VCE=5.0V, I_C=200μA, R_S=10Ω			
	f=10Hz to 15.7kHz		8.0	dB

All dimensions in inches (mm).



LEAD CODE:

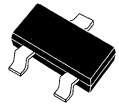
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R1

CMPT6427

NPN SILICON
DARLINGTON TRANSISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT6427 type is a NPN Silicon Darlington Transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for applications requiring extremely high gain.
Marking Code is C1V.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	40	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	12	V
Collector Current	I_C	500	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

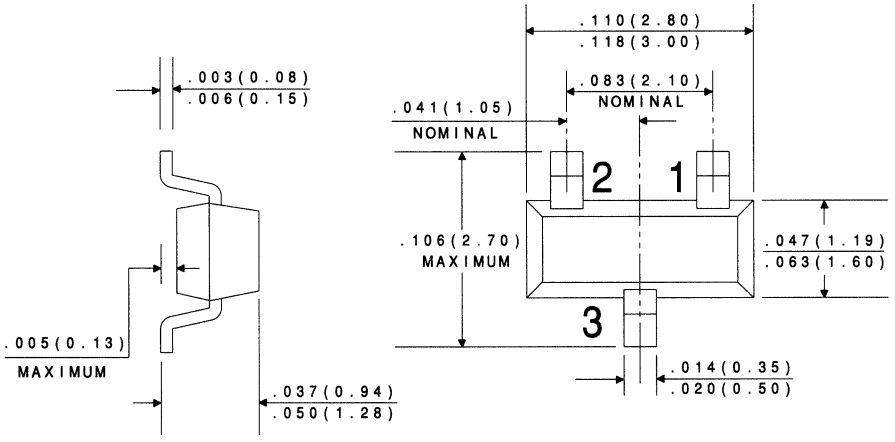
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=30V		50	nA
I_{CEO}	V_{CE}=25V		1.0	μA
I_{EBO}	V_{BE}=10V		50	nA
BV_{CBO}	I_C=100μA	40		V
BV_{CEO}	I_C=10mA	40		V
BV_{EBO}	I_E=10μA	12		V
$V_{CE(SAT)}$	I_C=50mA, I_B=0.5mA		1.20	V
$V_{CE(SAT)}$	I_C=500mA, I_B=0.5mA		1.50	V
$V_{BE(SAT)}$	I_C=500mA, I_B=0.5mA		2.00	V
$V_{BE(ON)}$	V_{CE}=5.0V, I_C=50mA		1.75	V
h_{FE}	V_{CE}=5.0V, I_C=10mA	10K	100K	
h_{FE}	V_{CE}=5.0V, I_C=100mA	20K	200K	
h_{FE}	V_{CE}=5.0V, I_C=500mA	14K	140K	
f_T	V_{CE}=5.0V, IC=10mA, f=100MHz	130		MHz

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		7.0	pF
C_{ib}	V_{BE}=0.5V, I_C=0, f=1.0MHz		15	pF
N_F	V_{CE}=5.0V, I_C=1.0mA, R_S=100kΩ, f=1.0kHz TO 15.7kHz		10	dB

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

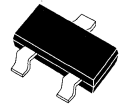
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R1

CMPT6428
CMPT6429

NPN SILICON TRANSISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT6428, CMPT6429 types are NPN Silicon Transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for high gain amplifier applications.
Marking Codes are C1K and C1L Respectively.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL	CMPT6428	CMPT6429	UNITS
Collector-Base Voltage	V_{CBO}	60	55	V
Collector-Emitter Voltage	V_{CEO}	50	45	V
Emitter-Base Voltage	V_{EBO}	6.0		V
Collector Current	I_C	200		mA
Power Dissipation	P_D	350		mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150		°C
Thermal Resistance	Θ_{JA}	357		°C/W

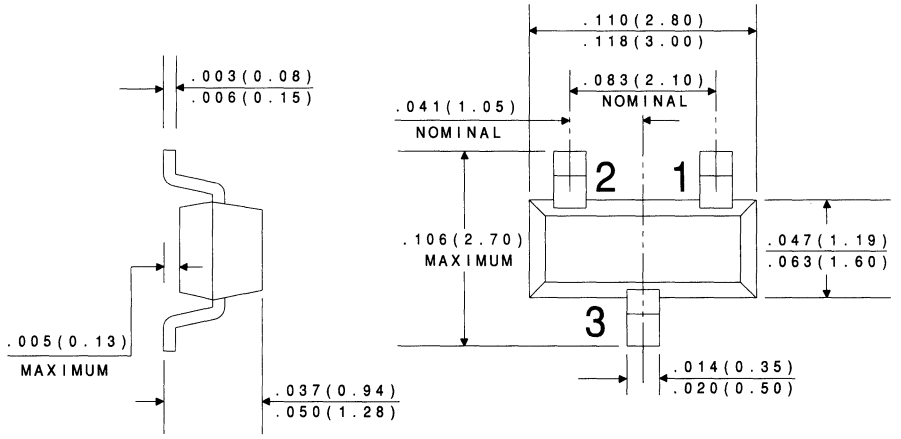
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

		CMPT6428		CMPT6429		
SYMBOL	TEST CONDITIONS	MIN	MAX	MIN	MAX	UNITS
I_{CBO}	V_{CB}=30V		10		10	nA
I_{CEO}	V_{CE}=30V		100		100	nA
I_{EBO}	V_{BE}=5.0V		10		10	nA
BV_{CBO}	I_C=100μA		60		55	V
BV_{CEO}	I_C=1.0mA		50		45	V
$V_{CE(SAT)}$	I_C=10mA, I_B=0.5mA		0.20		0.20	V
$V_{CE(SAT)}$	I_C=100mA, I_B=5.0mA		0.60		0.60	V
$V_{BE(ON)}$	V_{CE}=5.0V, I_C=1.0mA	0.56	0.66	0.56	0.66	V
h_{FE}	V_{CE}=5.0V, I_C=10μA	250		500		
h_{FE}	V_{CE}=5.0V, I_C=100μA	250	650	500	1250	
h_{FE}	V_{CE}=5.0V, I_C=1.0mA	250		500		
h_{FE}	V_{CE}=5.0V, I_C=10mA	250		500		
f_T	V_{CE}=5.0V, I_C=1.0mA, f=100MHz	100	700	100	700	MHz

SYMBOL	TEST CONDITIONS	CMPT6428 MIN	CMPT6428 MAX	CMPT6429 MIN	CMPT6429 MAX	UNITS
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		3.0		3.0	pF
C_{ib}	V_{BE}=0.5V, I_C=0, f=1.0MHz		8.0		8.0	pF

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

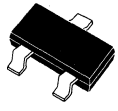
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R1

CMPT6517 NPN
CMPT6520 PNP

COMPLEMENTARY SILICON HIGH VOLTAGE TRANSISTORS



SOT-23 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT6517, CMPT6520 types are complementary silicon transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for high voltage driver and amplifier applications.

Marking Codes are C1Z and C2Z Respectively.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	350	V
Collector-Emitter Voltage	V_{CEO}	350	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	500	mA
Base Current	I_B	250	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

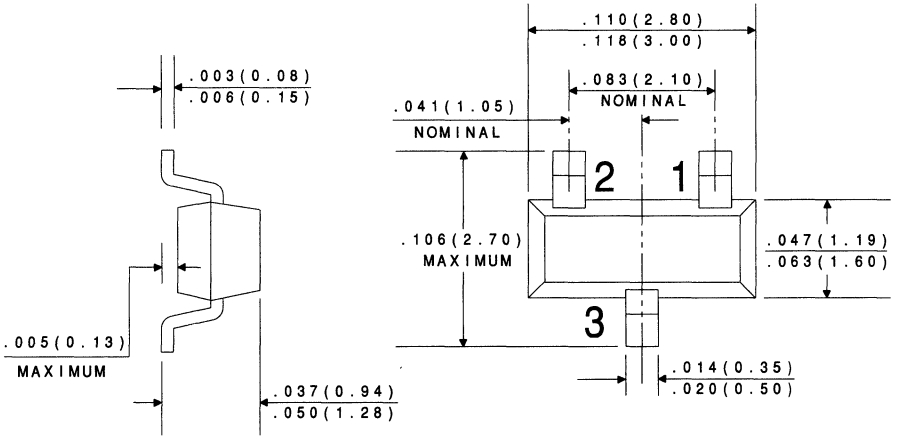
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=250V		50	nA
I_{EBO}	V_{EB}=5.0V (CMPT6517)		50	nA
I_{EBO}	V_{EB}=4.0V (CMPT6520)		50	nA
BV_{CBO}	I_C=100μA	350		V
BV_{CEO}	I_C=1.0mA	350		V
BV_{EBO}	I_E=10μA (CMPT6517)	6.0		V
BV_{EBO}	I_E=10μA (CMPT6520)	5.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.30	V
$V_{CE(SAT)}$	I_C=20mA, I_B=2.0mA		0.35	V
$V_{CE(SAT)}$	I_C=30mA, I_B=3.0mA		0.50	V
$V_{CE(SAT)}$	I_C=50mA, I_B=5.0mA		1.0	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA		0.75	V
$V_{BE(SAT)}$	I_C=20mA, I_B=2.0mA		0.85	V

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$V_{BE(SAT)}$	I_C=30mA, I_B=3.0mA		0.90	V
$V_{BE(ON)}$	V_{CE}=10V, I_C=100mA		2.0	V
h_{FE}	V_{CE}=10V, I_C=1.0mA	20		
h_{FE}	V_{CE}=10V, I_C=10mA	30		
h_{FE}	V_{CE}=10V, I_C=30mA	30	200	
h_{FE}	V_{CE}=10V, I_C=50mA	20	200	
h_{FE}	V_{CE}=10V, I_C=100mA	15		
f_T	V_{CE}=20V, I_C=10mA, f=20MHz	40	200	MHz
C_{cb}	V_{CB}=20V, I_C=0, f=1.0MHz		6.0	pF
C_{eb}	V_{EB}=0.5V, I_E=0, f=1.0MHz (CMPT6517)		80	pF
C_{eb}	V_{EB}=0.5V, I_E=0, f=1.0MHz (CMPT6520)		100	pF

All dimensions in inches (mm).

TOP VIEW



DATA SHEET

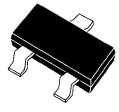
LEAD CODE:

1) BASE
2) EMITTER
3) COLLECTOR

R1

CMPT8099 NPN
CMPT8599 PNP

COMPLEMENTARY SILICON TRANSISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT8099, CMPT8599 types are Complementary Silicon Transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for general purpose audio amplifier applications.

Marking Codes are CKB and C2W Respectively.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL	CMPT8099	CMPT8599	UNITS
Collector-Base Voltage	V_{CBO}	80	80	V
Collector-Emitter Voltage	V_{CEO}	80	80	V
Emitter-Base Voltage	V_{EBO}	6.0	5.0	V
Collector Current	I_C	500		mA
Power Dissipation	P_D	350		mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150		°C
Thermal Resistance	Θ_{JA}	357		°C/W

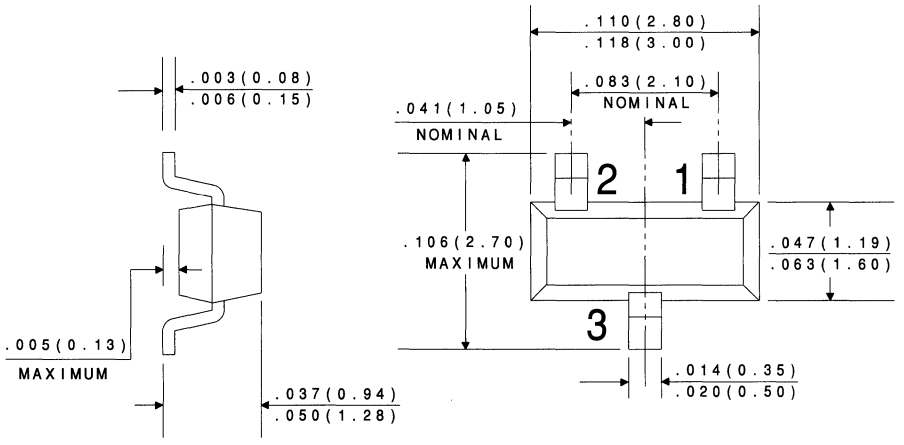
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

		CMPT8099		CMPT8599		
SYMBOL	**TEST CONDITIONS**	**MIN**	**MAX**	**MIN**	**MAX**	**UNITS**
I_{CBO}	V_{CB}=80V		0.1		0.1	μA
I_{EBO}	V_{BE}=6.0V		0.1		-	μA
I_{EBO}	V_{BE}=4.0V		-		0.1	μA
BV_{CBO}	I_C=100μA	80		80		V
BV_{CEO}	I_C=10mA	80		80		V
BV_{EBO}	I_E=10μA	6.0		5.0		V
$V_{CE(SAT)}$	I_C=100mA, I_B=5.0mA		0.4		0.4	V
$V_{CE(SAT)}$	I_C=100mA, I_B=10mA		0.3		0.3	V
$V_{BE(ON)}$	VCE=5.0V, I_C=10mA	0.6	0.8	0.6	0.8	V
h_{FE}	V_{CE}=5.0V, I_C=1.0mA	100	300	100	300	
h_{FE}	V_{CE}=5.0V, I_C=10mA	100		100		

SYMBOL	TEST CONDITIONS	CMPT8099 MIN	CMPT8099 MAX	CMPT8599 MIN	CMPT8599 MAX	UNITS
h_{FE}	V_{CE}=5.0V, I_C=100mA	75		75		
f_T	V_{CE}=5.0V, I_C=10mA, f=100MHz	150		150		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		6.0		4.5	pF
C_{ib}	V_{BE}=0.5V, I_C=0, f=1.0MHz		25		30	pF

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

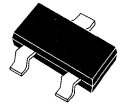
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R1

CMPTA06
CMPTA56

COMPLEMENTARY SILICON TRANSISTORS



SOT-23 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPTA06, CMPTA56 types are complementary silicon transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for small signal general purpose and switching applications.
Marking Codes are C1G, C2G Respectively.

MAXIMUM RATINGS (T_A=25°C)

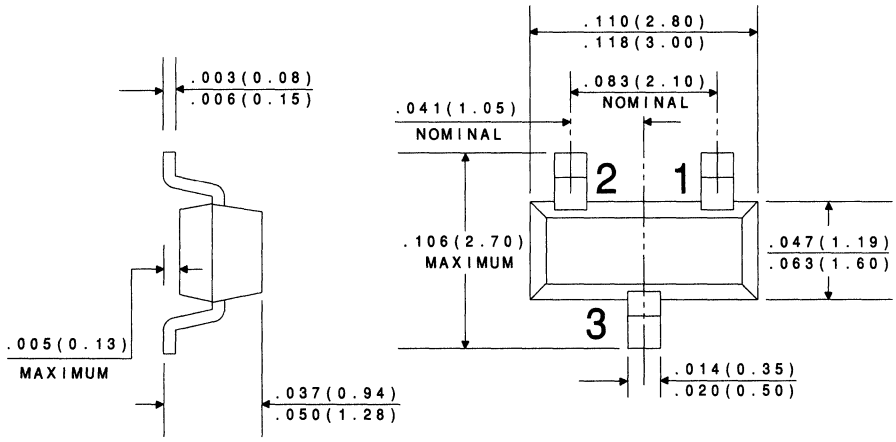
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	4.0	V
Collector Current	I_C	500	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=80V		100	nA
I_{CEO}	V_{CE}=60V		100	nA
BV_{CEO}	I_C=1.0mA	80		V
BV_{EBO}	I_E=100μA	4.0		V
$V_{CE(SAT)}$	I_C=100mA, I_B=10mA		0.25	V
$V_{BE(ON)}$	V_{CE}=1.0V, I_C=100mA		1.20	V
h_{FE}	V_{CE}=1.0V, I_C=10mA	50		
h_{FE}	V_{CE}=1.0V, I_C=100mA	50		
f_T	V_{CE}=2.0V, I_C=10mA, f=100MHz (CMPTA06)	100		MHz
f_T	V_{CE}=1.0V, I_C=100mA, f=100MHz(CMPTA56)	50		MHz

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

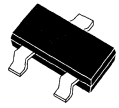
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R1

CMPTA13 CMPTA14 NPN
CMPTA63 CMPTA64 PNP

SILICON COMPLEMENTARY DARLINGTON TRANSISTORS



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPTA13, CMPTA63 series types are complementary silicon Darlington transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for applications requiring extremely high gain.

Marking Codes are C1M, C1N, C2U and C2V Respectively.

MAXIMUM RATINGS (T_A=25°C)

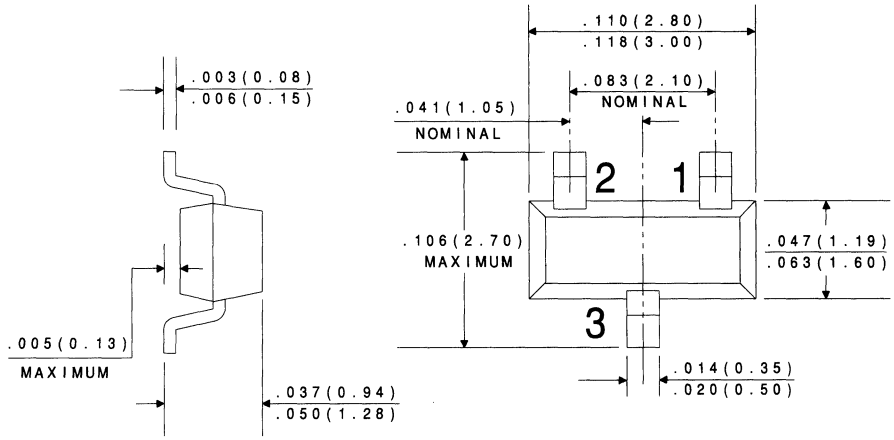
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	30	V
Collector-Emitter Voltage	V_{CES}	30	V
Emitter-Base Voltage	V_{EBO}	10	V
Collector Current	I_C	500	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=30V		100	nA
I_{EBO}	V_{BE}=10V		100	nA
BV_{CES}	I_C=100μA	30		V
$V_{CE(SAT)}$	I_C=100mA, I_B=0.1mA		1.5	V
$V_{BE(ON)}$	V_{CE}=5.0V, I_C=100mA		2.0	V
h_{FE}	V_{CE}=5.0V, I_C=10mA (CMPTA13, CMPTA63)	5,000		
h_{FE}	V_{CE}=5.0V, I_C=10mA (CMPTA14, CMPTA64)	10,000		
h_{FE}	V_{CE}=5.0V, I_C=100mA (CMPTA13, CMPTA63)	10,000		
h_{FE}	V_{CE}=5.0V, I_C=100mA (CMPTA14, CMPTA64)	20,000		
f_T	V_{CE}=5.0V, I_C=10mA, f=100MHz	125		MHz

All Dimensions in inches (mm).

TOP VIEW



LEAD CODE:

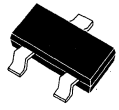
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R1

CMPTA27

SILICON DARLINGTON TRANSISTOR



SOT-23 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPTA27 type is a Silicon Darlington Transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for applications requiring extremely high gain.
Marking Code is FG.

MAXIMUM RATINGS (T_A=25°C)

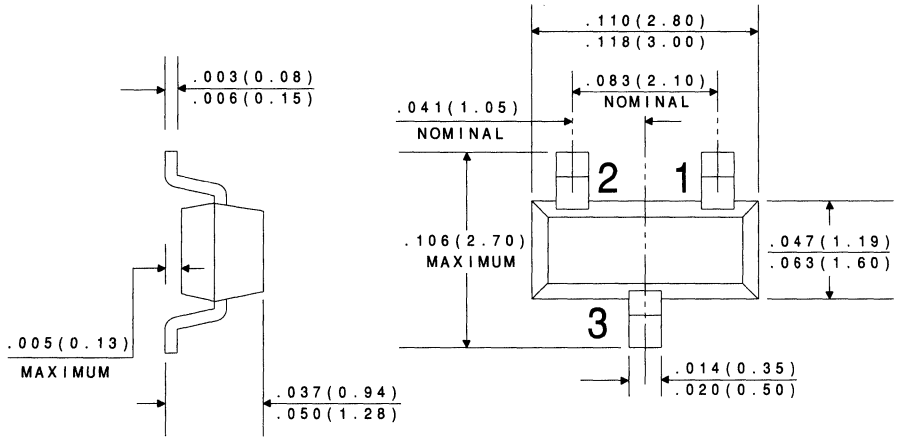
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CES}	60	V
Emitter-Base Voltage	V_{EBO}	10	V
Collector Current	I_C	500	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CES}	V_{CE}=50V		500	nA
I_{CBO}	V_{CB}=50V		100	nA
I_{EBO}	V_{BE}=10V		100	nA
BV_{CES}	I_C=100μA	60		V
BV_{CBO}	I_C=100μA	60		V
$V_{CE(SAT)}$	I_C=100mA, I_B=0.1mA		1.5	V
$V_{BE(ON)}$	V_{CE}=5.0V, I_C=100mA		2.0	V
h_{FE}	V_{CE}=5.0V, I_C=10mA	10,000		
h_{FE}	V_{CE}=5.0V, I_C=100mA	10,000		
f_T	V_{CE}=5.0V, I_C=10mA, f=100MHz	125		MHz

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

1) BASE
2) EMITTER
3) COLLECTOR

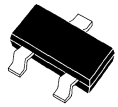
DATA SHEET

R1

NEW

CMPTA29

HIGH VOLTAGE NPN SILICON DARLINGTON TRANSISTOR



SOT-23 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPTA29 is a Silicon NPN Darlington Transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for applications requiring extremely high gain.
Marking Code is C29.

MAXIMUM RATINGS: (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CES}	100	V
Emitter-Base Voltage	V_{EBO}	12	V
Collector Current	I_C	500	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

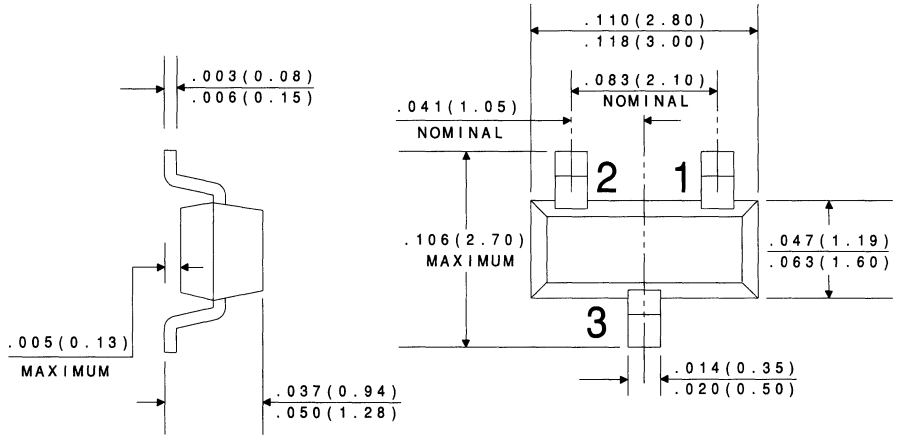
ELECTRICAL CHARACTERISTICS: (T_A=25°C)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CES}	V_{CE}=80V		500	nA
I_{CBO}	V_{CB}=80V		100	nA
I_{EBO}	V_{BE}=10V		100	nA
BV_{CES}	I_C=100μA	100		V
BV_{CBO}	I_C=100μA	100		V
BV_{EBO}	I_E=10μA	12		V
$V_{CE(SAT)}$	I_C=10mA, I_B=10μA		1.2	V
$V_{CE(SAT)}$	I_C=100mA, I_B=100mA		1.5	V
$V_{BE(ON)}$	V_{CE}=5.0V, I_C=100mA		2.0	V

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=5.0V, I_C=10mA	10,000		
h_{FE}	V_{CE}=5.0V, I_C=100mA	10,000		
f_T	V_{CE}=5.0V, I_C=10mA, f=100MHz	125		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		8.0	pF

All dimensions in inches (mm).

TOP VIEW



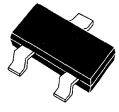
DATA SHEET

LEAD CODE:

1) BASE
2) EMITTER
3) COLLECTOR

CMPTA42 NPN
CMPTA92 PNP

SILICON COMPLEMENTARY HIGH VOLTAGE TRANSISTOR



SOT-23 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPTA42, CMPTA92 types are complementary surface mount epoxy molded silicon planar epitaxial transistors designed for high voltage applications.
Marking Codes are C1D, C2D Respectively.

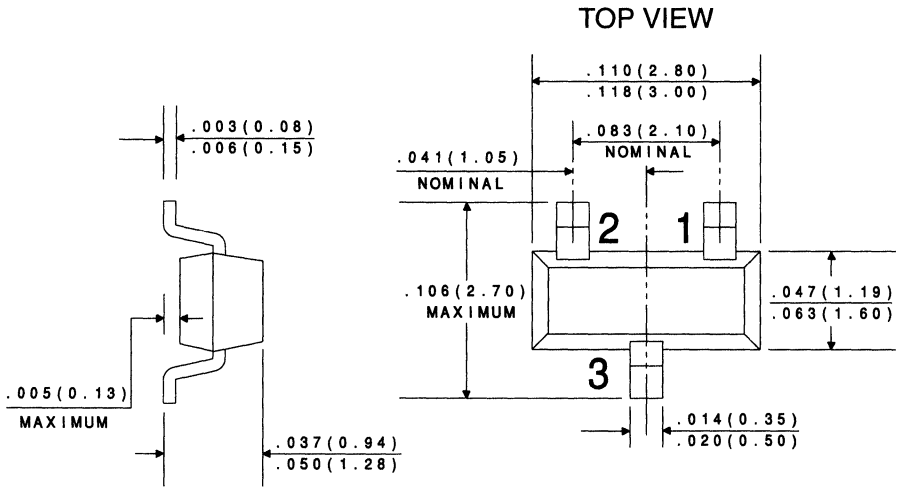
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL	CMPTA42	CMPTA92	UNITS
Collector-Base Voltage	V_{CBO}	300	300	V
Collector-Emitter Voltage	V_{CEO}	300	300	V
Emitter-Base Voltage	V_{EBO}	6.0	5.0	V
Collector Current	I_C	500		mA
Power Dissipation	P_D	350		mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150		°C
Thermal Resistance	Θ_{JA}	357		°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

		CMPTA42		CMPTA92		
SYMBOL	TEST CONDITIONS	MIN	MAX	MIN	MAX	UNITS
I_{CBO}	V_{CB}=200V		100		250	nA
I_{EBO}	V_{BE}=6.0V		100		-	nA
I_{EBO}	V_{BE}=3.0V		-		100	nA
BV_{CBO}	I_C=100μA	300		300		V
BV_{CEO}	I_C=1.0mA	300		300		V
BV_{EBO}	I_E=100μA	6.0		5.0		V
$V_{CE(SAT)}$	I_C=20mA, I_B=2.0mA		0.5		0.5	V
$V_{BE(SAT)}$	I_C=20mA, I_B=2.0mA		0.9		0.9	V
h_{FE}	V_{CE}=10V, I_C=1.0mA	25		25		
h_{FE}	V_{CE}=10V, I_C=10mA	40		40		
h_{FE}	V_{CE}=10V, I_C=30mA	40		25		
f_T	V_{CE}=20V, I_C=10mA, f=100MHz	50		50		MHz
C_{ob}	V_{CB}=20V, I_E=0, f=1.0MHz		3.0		6.0	pF

All dimensions in inches (mm).



LEAD CODE:

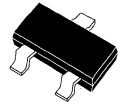
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R1

CMPTA44

NPN SILICON EXTREMELY HIGH VOLTAGE TRANSISTOR



SOT-23 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPTA44 type is a surface mount epoxy molded silicon planar epitaxial transistors designed for extremely high voltage applications.
Marking Code is C3Z.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	450	V
Collector-Emitter Voltage	V_{CEO}	400	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	300	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

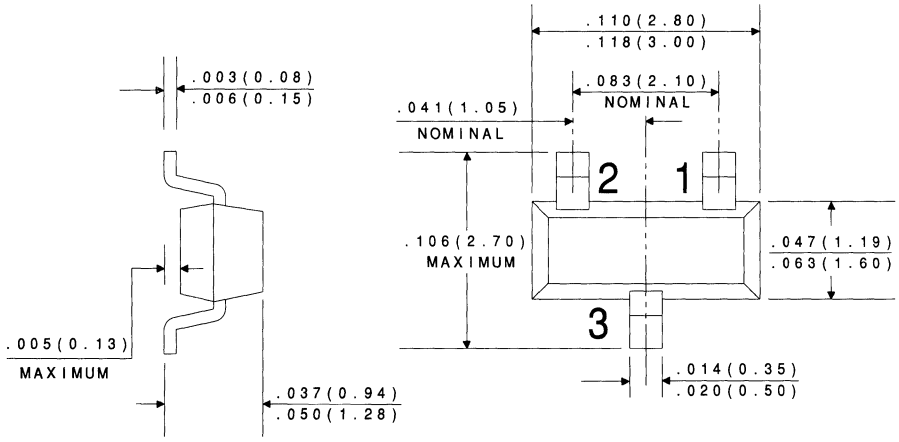
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=400V		100	nA
I_{CES}	V_{CE}=400V		500	nA
I_{EBO}	V_{BE}=4.0V		100	nA
BV_{CBO}	I_C=100μA	450		V
BV_{CES}	I_C=100μA	450		V
BV_{CEO}	I_C=1.0mA	400		V
BV_{EBO}	I_E=10μA	6.0		V
$V_{CE(SAT)}$	I_C=1.0mA, I_B=0.1mA		0.40	V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.50	V
$V_{CE(SAT)}$	I_C=50mA, I_B=5.0mA		0.75	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA		0.75	V
h_{FE}	V_{CE}=10V, I_C=1.0mA	40		
h_{FE}	V_{CE}=10V, I_C=10mA	50	200	

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=10V, I_C=50mA	45		
h_{FE}	V_{CE}=10V, I_C=100mA	20		
f_T	V_{CE}=10V, I_C=10mA, f=10MHz	20		MHz
C_{ob}	V_{CB}=20V, I_E=0, f=1.0MHz		7.0	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		130	pF

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

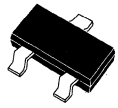
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R1

CMPTH10

NPN SILICON RF TRANSISTOR



SOT-23 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPTH10 type is an NPN silicon RF transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for low noise UHF/VHF amplifier and high output oscillator applications.

Marking code is C3E.

MAXIMUM RATINGS (T_A=25°C)

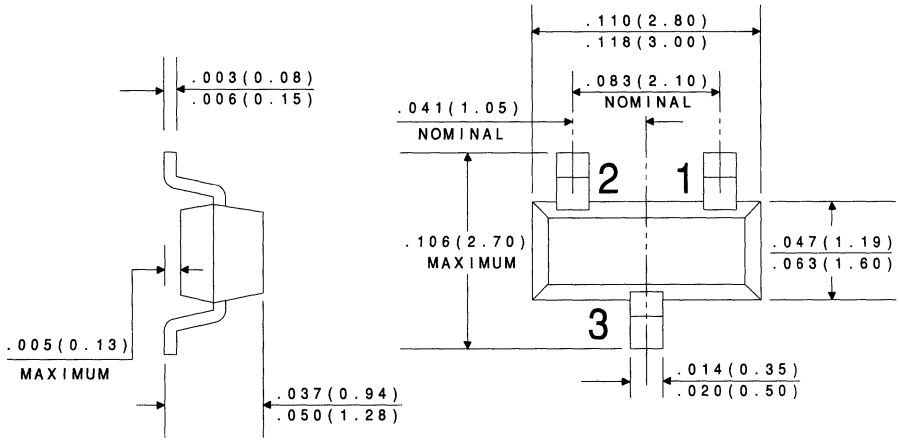
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	30	V
Collector-Emitter Voltage	V_{CEO}	25	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=25V		100	nA
I_{EBO}	V_{EB}=2.0V		100	nA
BV_{CBO}	I_C=100μA	30		V
BV_{CEO}	I_C=1.0mA	25		V
BV_{EBO}	I_E=10μA	3.0		V
$V_{CE(SAT)}$	I_C=4.0mA, I_B=0.4mA		0.50	V
$V_{BE(ON)}$	V_{CE}=10V, I_B=4.0mA		0.95	V
h_{FE}	V_{CE}=10V, I_C=4.0mA	60		
f_T	V_{CE}=10V, I_C=4.0mA, f=100MHz	650		MHz
C_{cb}	V_{CB}=10V, I_E=0, f=1.0MHz		0.70	pF
C_{rb}	V_{CB}=10V, I_E=0, f=1.0MHz		0.65	pF
$rb'C_c$	V_{CB}=10V, I_C=4.0mA, f=31.8MHz		9.0	ps

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

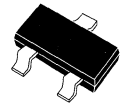
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R1

CMPZ4619
THRU
CMPZ4627

350mW LOW NOISE ZENER DIODE



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMIONDUCTOR CMPZ4619 Series Silicon Zener Diode is high quality voltage regulator designed for low leakage, low current and low noise applications.

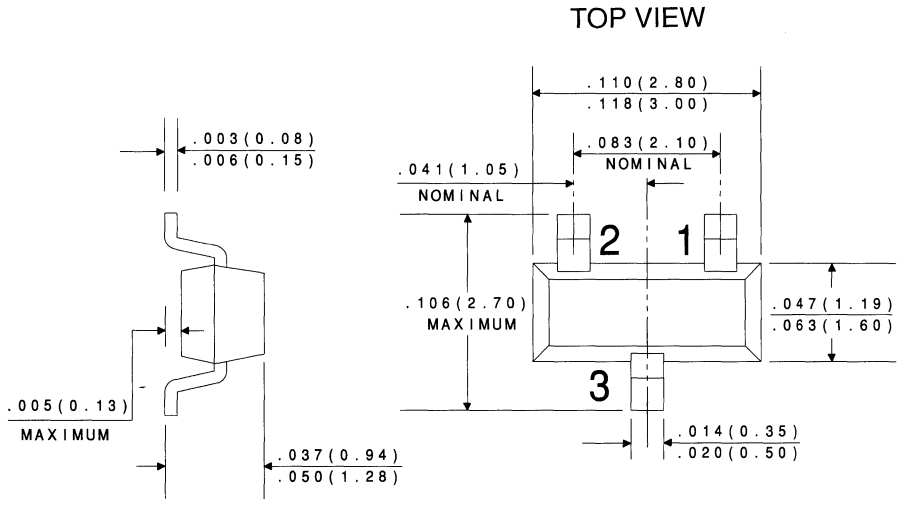
ELECTRICAL CHARACTERISTICS

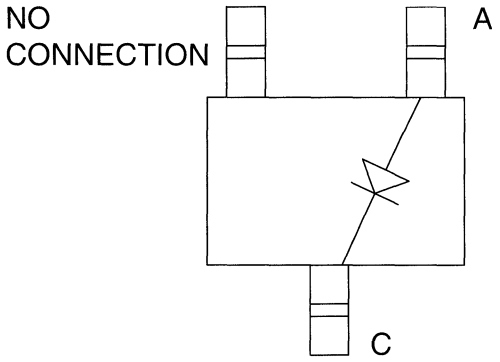
(T_A=25°C) V_F=1.0 MAX @ I_F=200mA FOR ALL TYPES.

TYPE NO.	Zener Voltage V_Z @ I_{ZT}	Test Current I_{ZT}	Maximum Zener Impedance Z_{ZT} @ I_{ZT}	Maximum Reverse Leakage Current I_R @ V_R		Maximum Zener Current I_{ZM}	Maximum Noise Density N_D @ I_{ZT}=250μA
	Volts	μA	Ω	μA	Volts	mA	μV/√Hz
CMPZ4619 *	3.0	250	1600	0.8	1.0	85	1.0
CMPZ4620 *	3.3	250	1650	7.5	1.5	80	1.0
CMPZ4621 *	3.6	250	1700	7.5	2.0	75	1.0
CMPZ4622 *	3.9	250	1650	5.0	2.0	70	1.0
CMPZ4623 *	4.3	250	1600	4.0	2.0	65	1.0
CMPZ4624 *	4.7	250	1550	10	3.0	60	1.0
CMPZ4625 *	5.1	250	1500	10	3.0	55	2.0
CMPZ4626 *	5.6	250	1400	10	4.0	50	4.0
CMPZ4627 *	6.2	250	1200	10	5.0	45	5.0

* Available on special order only, please consult factory.

All dimensions in inches (mm).

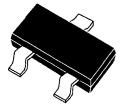




R1

CMPZ4683
THRU
CMPZ4714

350mW LOW LEVEL ZENER DIODE



SOT-23 Case

Central™
Semiconductor Corp.

DESCRIPTION:

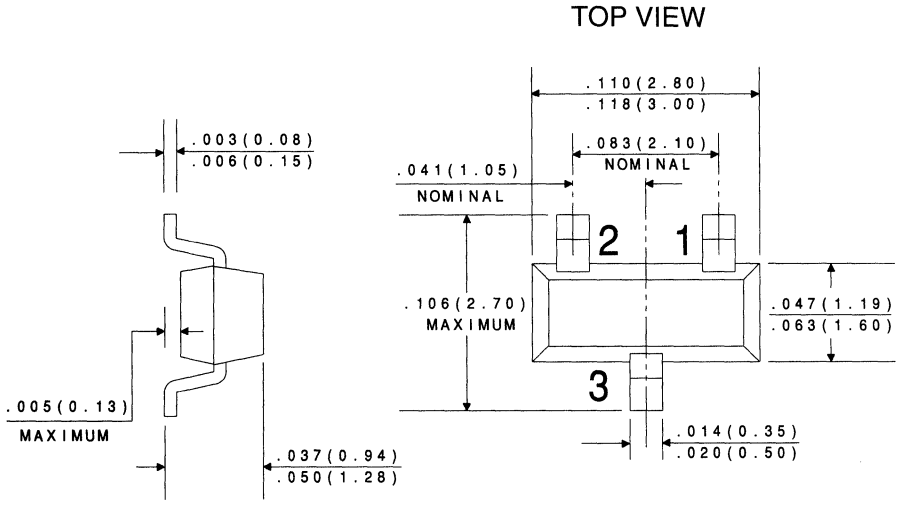
The CENTRAL SEMICONDUCTOR CMPZ4683 Series Silicon Zener Diode is a high quality voltage regulator designed for applications requiring an extremely low operating current and low leakage.

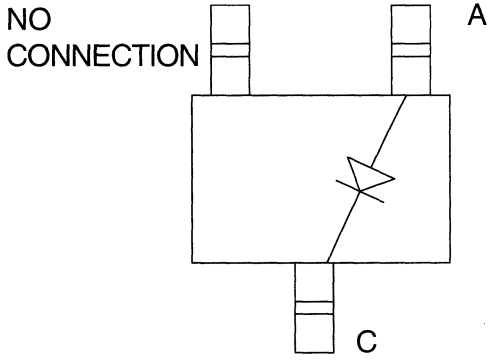
ELECTRICAL CHARACTERISTICS
(T_A=25°C) V_F=1.5V MAX @ I_F=100mA FOR ALL TYPES.

TYPE NO.	Nominal Zener Voltage V_Z @ I_{ZT}	Test Current I_{ZT}	Maximum Reverse Leakage Current I_R @ V_R		Maximum Voltage Change** ΔV_Z	Maximum Zener Current I_{ZM}
	VOLTS	µA	µA	VOLTS	VOLTS	mA
CMPZ4683 *	3.0	50	0.8	1.0	0.90	85
CMPZ4684 *	3.3	50	7.5	1.5	0.95	80
CMPZ4685 *	3.6	50	7.5	2.0	0.95	75
CMPZ4686 *	3.9	50	5.0	2.0	0.97	70
CMPZ4687 *	4.3	50	4.0	2.0	0.99	65
CMPZ4688 *	4.7	50	10	3.0	0.99	60
CMPZ4689 *	5.1	50	10	3.0	0.97	55
CMPZ4690 *	5.6	50	10	4.0	0.96	50
CMPZ4691 *	6.2	50	10	5.0	0.95	45
CMPZ4692 *	6.8	50	10	5.1	0.90	35
CMPZ4693 *	7.5	50	10	5.7	0.75	31.8
CMPZ4694 *	8.2	50	1.0	6.2	0.50	29
CMPZ4695 *	8.7	50	1.0	6.6	0.10	27.6
CMPZ4696 *	9.1	50	1.0	6.9	0.08	26.2
CMPZ4697 *	10	50	1.0	7.6	0.10	24.8
CMPZ4698 *	11	50	0.05	8.4	0.11	21.6
CMPZ4699 *	12	50	0.05	9.1	0.12	20.4
CMPZ4700 *	13	50	0.05	9.8	0.13	19
CMPZ4701 *	14	50	0.05	10.6	0.14	17.5
CMPZ4702 *	15	50	0.05	11.4	0.15	16.3
CMPZ4703 *	16	50	0.05	12.1	0.16	15.4
CMPZ4704 *	17	50	0.05	12.9	0.17	14.5
CMPZ4705 *	18	50	0.05	13.6	0.18	13.2
CMPZ4706 *	19	50	0.05	14.4	0.19	12.5
CMPZ4707 *	20	50	0.01	15.2	0.20	11.9
CMPZ4708 *	22	50	0.01	16.7	0.22	10.8
CMPZ4709 *	24	50	0.01	18.2	0.24	9.9
CMPZ4710 *	25	50	0.01	19.0	0.25	9.5
CMPZ4711 *	27	50	0.01	20.4	0.27	8.8
CMPZ4712 *	28	50	0.01	21.2	0.28	8.5
CMPZ4713 *	30	50	0.01	22.8	0.30	7.9
CMPZ4714 *	33	50	0.01	25.0	0.33	7.2

* Available on special order only, please consult factory.
** ΔV_Z=V_Z@100µA MINUS V_Z @ 10µA.

All dimensions in inches (mm).



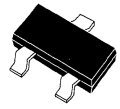


DATA SHEET

R1

CMPZ5221B
THRU
CMPZ5261B

350 mW ZENER DIODE
5% TOLERANCE



SOT-23 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPZ5221B Series Silicon Zener Diode is a high quality voltage regulator for use in industrial, commercial, entertainment and computer applications. Higher voltage devices are available on special order.

ABSOLUTE MAXIMUM RATINGS	**SYMBOL**		**UNITS**
Power Dissipation (@ T_A=25°C)	P_D	350	mW
Operating and Storage Temperature	T_J,T_{stg}	-65 to + 175	°C

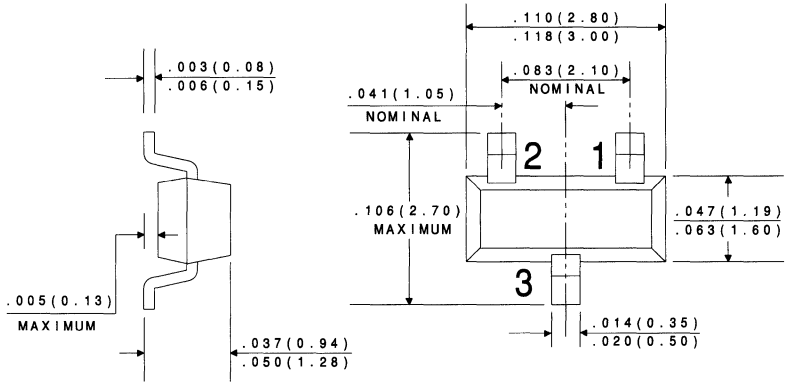
ELECTRICAL CHARACTERISTICS (T_A=25°C), V_F=0.9V MAX @ I_F = 10mA FOR ALL TYPES.

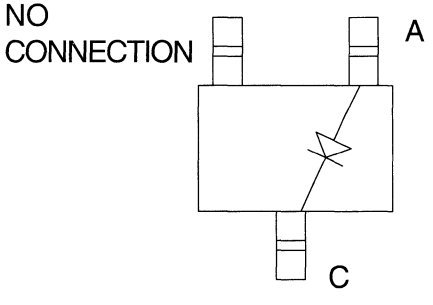
TYPE	ZENER VOLTAGE V_Z @ I_{ZT}			TEST CURRENT	MAXIMUM ZENER IMPEDANCE			MAXIMUM REVERSE CURRENT		MAX. TEMP. COEFF.	MARKING CODE
	MIN	NOM	MAX	I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}		I_R @ V_R		ΘV_Z	
	VOLTS	VOLTS	VOLTS	mA	Ω	Ω	mA	μA	VOLTS	%/°C	
CMPZ5221B	2.280	2.4	2.520	20	30	1200	0.25	100	1.0	-0.085	18A
CMPZ5222B	2.375	2.5	2.625	20	30	1250	0.25	100	1.0	-0.085	18B
CMPZ5223B	2.565	2.7	2.835	20	30	1300	0.25	75	1.0	-0.080	18C
CMPZ5224B	2.660	2.8	2.940	20	30	1400	0.25	75	1.0	-0.080	18D
CMPZ5225B	2.850	3.0	3.150	20	29	1600	0.25	50	1.0	-0.075	18E
CMPZ5226B	3.135	3.3	3.465	20	28	1600	0.25	25	1.0	-0.070	C8A
CMPZ5227B	3.420	3.6	3.780	20	24	1700	0.25	15	1.0	-0.065	C8B
CMPZ5228B	3.705	3.9	4.095	20	23	1900	0.25	10	1.0	-0.060	C8C
CMPZ5229B	4.085	4.3	4.515	20	22	2000	0.25	5.0	1.0	±0.055	C8D
CMPZ5230B	4.465	4.7	4.935	20	19	1900	0.25	5.0	2.0	±0.030	C8E
CMPZ5231B	4.845	5.1	5.355	20	17	1600	0.25	5.0	2.0	±0.030	C8F
CMPZ5232B	5.320	5.6	5.880	20	11	1600	0.25	5.0	3.0	+0.038	C8G
CMPZ5233B	5.700	6.0	6.300	20	7.0	1600	0.25	5.0	3.5	+0.038	C8H
CMPZ5234B	5.890	6.2	6.510	20	7.0	1000	0.25	5.0	4.0	+0.045	C8J
CMPZ5235B	6.460	6.8	7.140	20	5.0	750	0.25	3.0	5.0	+0.050	C8K
CMPZ5236B	7.125	7.5	7.875	20	6.0	500	0.25	3.0	6.0	+0.058	C8L
CMPZ5237B	7.790	8.2	8.610	20	8.0	500	0.25	3.0	6.5	+0.062	C8M
CMPZ5238B	8.265	8.7	9.135	20	8.0	600	0.25	3.0	6.5	+0.065	C8N
CMPZ5239B	8.645	9.1	9.555	20	10	600	0.25	3.0	7.0	+0.068	C8P
CMPZ5240B	9.500	10	10.50	20	17	600	0.25	3.0	8.0	+0.075	C8Q
CMPZ5241B	10.45	11	11.55	20	22	600	0.25	2.0	8.4	+0.076	C8R
CMPZ5242B	11.40	12	12.60	20	30	600	0.25	1.0	9.1	+0.077	C8S
CMPZ5243B	12.35	13	13.65	9.5	13	600	0.25	0.5	9.9	+0.079	C8T
CMPZ5244B	13.30	14	14.70	9.0	15	600	0.25	0.1	10	+0.082	C8U

TYPE	ZENER VOLTAGE V_Z @ I_{ZT}			TEST CURRENT	MAXIMUM ZENER IMPEDANCE			MAXIMUM REVERSE CURRENT		MAX. TEMP. COEFF.	MARKING CODE
	MIN	NOM	MAX	I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}		I_R @ V_R		ΘV_Z	
	VOLTS	VOLTS	VOLTS	mA	Ω	Ω	mA	μA	VOLTS	%/°C	
CMPZ5245B	14.25	15	15.75	8.5	16	600	0.25	0.1	11	+0.082	C8V
CMPZ5246B	15.20	16	16.80	7.8	17	600	0.25	0.1	12	+0.083	C8W
CMPZ5247B	16.15	17	17.85	7.4	19	600	0.25	0.1	13	+0.084	C8X
CMPZ5248B	17.10	18	18.90	7.0	21	600	0.25	0.1	14	+0.085	C8Y
CMPZ5249B	18.05	19	19.95	6.6	23	600	0.25	0.1	14	+0.086	C8Z
CMPZ5250B	19.00	20	21.00	6.2	25	600	0.25	0.1	15	+0.086	81A
CMPZ5251B	20.90	22	23.10	5.6	29	600	0.25	0.1	17	+0.087	81B
CMPZ5252B	22.80	24	25.20	5.2	33	600	0.25	0.1	18	+0.088	81C
CMPZ5253B	23.75	25	26.25	5.0	35	600	0.25	0.1	19	+0.089	81D
CMPZ5254B	25.65	27	28.35	4.6	41	600	0.25	0.1	21	+0.090	81E
CMPZ5255B	26.60	28	29.40	4.5	44	600	0.25	0.1	21	+0.091	81F
CMPZ5256B	28.50	30	31.50	4.2	49	600	0.25	0.1	23	+0.091	81G
CMPZ5257B	31.35	33	34.65	3.8	58	700	0.25	0.1	25	+0.092	81H
CMPZ5258B	34.20	36	37.80	3.4	70	700	0.25	0.1	27	+0.093	81J
CMPZ5259B	37.05	39	40.95	3.2	80	800	0.25	0.1	30	+0.094	81K
CMPZ5260B	40.85	43	45.15	3.0	93	900	0.25	0.1	33	+0.095	81L
CMPZ5261B	44.65	47	49.35	2.7	105	1000	0.25	0.1	36	+0.095	81M

All dimensions in inches (mm).

TOP VIEW





DATA SHEET

R1

CMPZDA3V6 THRU CMPZDA33V

350mW DUAL ZENER DIODES
3.6 VOLTS THRU 33 VOLTS

SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

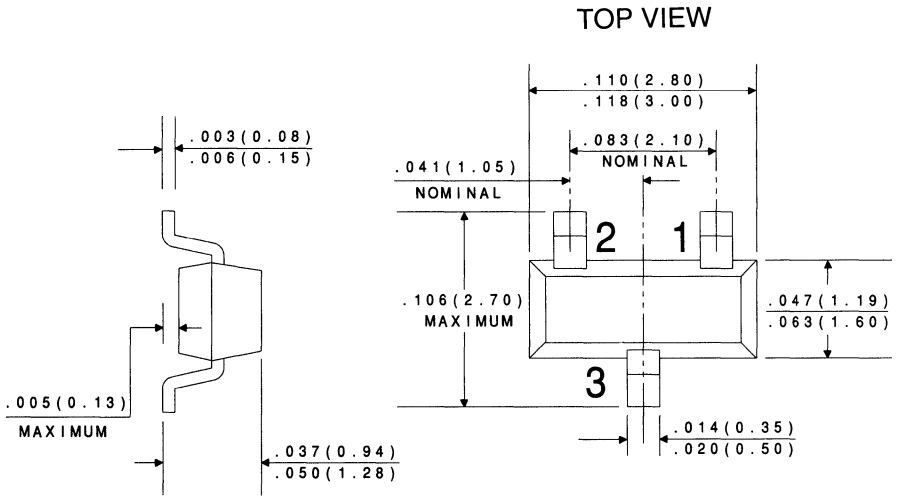
The CENTRAL SEMICONDUCTOR CMPZDA3V6 Series Silicon Dual Zener Diode is a high quality voltage regulator, connected in a common anode configuration, for use in industrial, commercial, entertainment and computer applications.

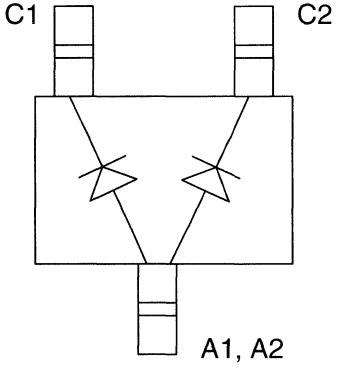
ABSOLUTE MAXIMUM RATINGS	**SYMBOL**		**UNIT**
Power Dissipation (@T_A=25°C)	P_D	350	mW
Operating and Storage Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C), V_F=0.9V MAX @ I_F=10mA FOR ALL TYPES.

TYPE NO.	ZENER VOLTAGE V_Z @ I_{ZT}		TEST CURRENT	MAXIMUM ZENER IMPEDANCE			MAXIMUM REVERSE CURRENT		MAXIMUM ZENER CURRENT	MAXIMUM ZENER VOLTAGE TEMPERATURE COEFFICIENT	MARKING CODE
	MIN	MAX	I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}		I_R @ V_R		I_{ZM}	ΘV_Z	
	VOLTS	VOLTS	mA	Ω	Ω	mA	μA	VOLTS	mA	%/°C	
CMPZDA3V6	3.4	3.8	5.0	95	600	1.0	2.0	1.0	45	-0.06	WW7
CMPZDA3V9	3.7	4.1	5.0	90	600	1.0	2.0	1.0	43	-0.06	WW8
CMPZDA4V3	4.0	4.6	5.0	90	600	1.0	1.0	1.0	40	-0.05	WW9
CMPZDA4V7	4.4	5.0	5.0	80	500	1.0	3.0	2.0	38	-0.03	ZZ1
CMPZDA5V1	4.8	5.4	5.0	60	480	1.0	2.0	2.0	35	0.02	ZZ2
CMPZDA5V6	5.2	6.0	5.0	40	400	1.0	1.0	2.0	32	0.03	ZZ3
CMPZDA6V2	5.8	6.6	5.0	10	150	1.0	3.0	4.0	28	0.04	ZZ4
CMPZDA6V8	6.4	7.2	5.0	15	80	1.0	2.0	4.0	25	0.05	ZZ5
CMPZDA7V5	7.0	7.9	5.0	15	80	1.0	1.0	5.0	23	0.05	ZZ6
CMPZDA8V2	7.7	8.7	5.0	15	80	1.0	0.7	5.0	21	0.06	ZZ7
CMPZDA9V1	8.5	9.6	5.0	15	100	1.0	0.5	6.0	18	0.06	ZZ8
CMPZDA10V	9.4	10.6	5.0	20	150	1.0	0.2	7.0	16	0.07	ZZ9
CMPZDA11V	10.4	11.6	5.0	20	150	1.0	0.1	8.0	15	0.07	YY1
CMPZDA12V	11.4	12.7	5.0	25	150	1.0	0.1	8.0	13	0.07	YY2
CMPZDA13V	12.4	14.1	5.0	30	170	1.0	0.1	8.0	12	0.08	YY3
CMPZDA15V	13.8	15.6	5.0	30	200	1.0	0.05	10.5	11	0.08	YY4
CMPZDA16V	15.3	17.1	5.0	40	200	1.0	0.05	11.2	10	0.08	YY5
CMPZDA18V	16.8	19.1	5.0	45	225	1.0	0.05	12.6	9.2	0.08	YY6
CMPZDA20V	18.8	21.2	5.0	55	225	1.0	0.05	14.0	8.3	0.08	YY7
CMPZDA22V	20.8	23.3	5.0	55	250	1.0	0.05	15.4	7.6	0.09	YY8
CMPZDA24V	22.8	25.6	5.0	70	250	1.0	0.05	16.8	7.0	0.09	YY9
CMPZDA27V	25.1	28.9	2.0	80	300	0.5	0.05	18.9	6.2	0.09	W10
CMPZDA30V	28.0	32.0	2.0	80	300	0.5	0.05	21.0	5.6	0.09	W11
CMPZDA33V	31.0	35.0	2.0	80	325	0.5	0.05	23.1	5.0	0.09	W12

All dimensions in inches (mm).





DATA SHEET

R1

CMR1-02
CMR1-04
CMR1-06
CMR1-10

GENERAL PURPOSE RECTIFIER
1.0 AMP, 200 THRU 1,000 VOLTS

SMB CASE

Central™
Semiconductor Corp.

FEATURES:

- LOW COST
- HIGH RELIABILITY
- SPECIAL SELECTIONS AVAILABLE
- GLASS PASSIVATED CHIP
- SUPERIOR LOT TO LOT CONSISTENCY
- "C" BEND CONSTRUCTION PROVIDES STRAIN RELIEF WHEN MOUNTED ON PC BOARD

DESCRIPTION: The CENTRAL SEMICONDUCTOR 1.0 Amp Surface Mount Silicon Rectifier is a high quality, well constructed, highly reliable component designed for use in all types of commercial, industrial, entertainment, computer, and automotive applications. To order devices on 12mm Tape and Reel (3000/13" Reel), add TR13 suffix to part number.

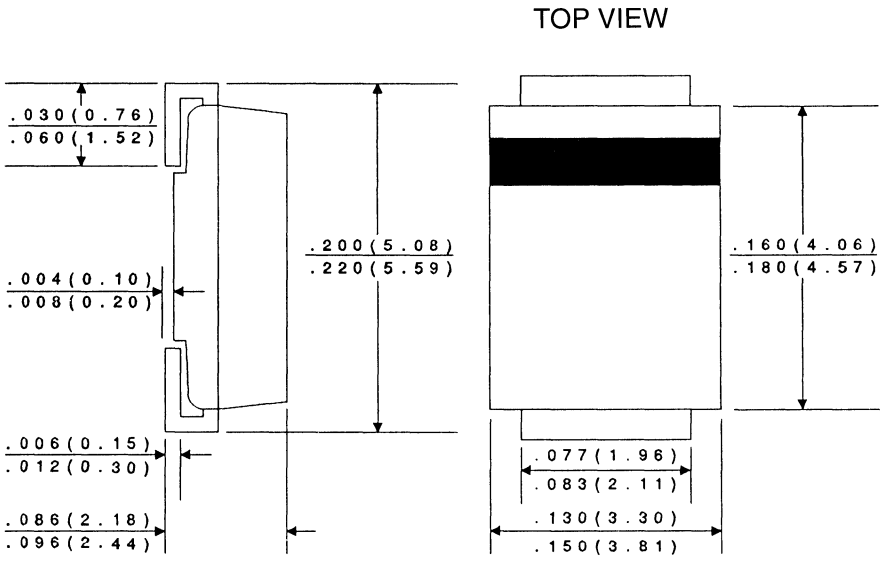
MAXIMUM RATINGS: (T_A=25°C unless otherwise noted)

	SYMBOL	CMR1-02	CMR1-04	CMR1-06	CMR1-10	UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	200	400	600	1000	V
DC Blocking Voltage	V_R	200	400	600	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	140	280	420	700	V
Average Forward Current(T_A=75°C)	I_O		1.0			A
Peak Forward Surge Current (8.3ms)	I_{FSM}		30			A
Operating and Storage Junction Temperature	T_J,T_{stg}		-65 to +175			°C
Thermal Resistance	Θ_{JL}		20			°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
V_F	I_F=1.0A		1.1	V
I_R	V_R=Rated V_{RRM}		10	μA
I_R	V_R=Rated V_{RRM}, T_A=125°C		50	μA

All dimensions in inches (mm).



Marking Codes:

DEVICE	MARKING CODE
CMR1-02	C02
CMR1-04	C04
CMR1-06	C06
CMR1-10	C10

CMR1U-01
CMR1U-02
CMR1U-04
NEW CMR1U-06

ULTRA FAST RECOVERY RECTIFIER
1.0 AMP, 100 THRU 600 VOLTS

SMB CASE

Central™
Semiconductor Corp.

FEATURES:

- LOW COST
- SPECIAL SELECTIONS AVAILABLE
- HIGH RELIABILITY
- SUPERIOR LOT TO LOT CONSISTENCY
- GLASS PASSIVATED CHIP
- "C" BEND CONSTRUCTION PROVIDES STRAIN RELIEF WHEN MOUNTED ON PC BOARD

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 1.0 Amp Surface Mount Silicon Ultra Fast Recovery Rectifier is a high quality, well constructed, highly reliable component designed for use in all types of commercial industrial, entertainment, computer, and automotive applications. To order devices on 12mm Tape and Reel (3000/13" Reel), add TR13 suffix to part number.

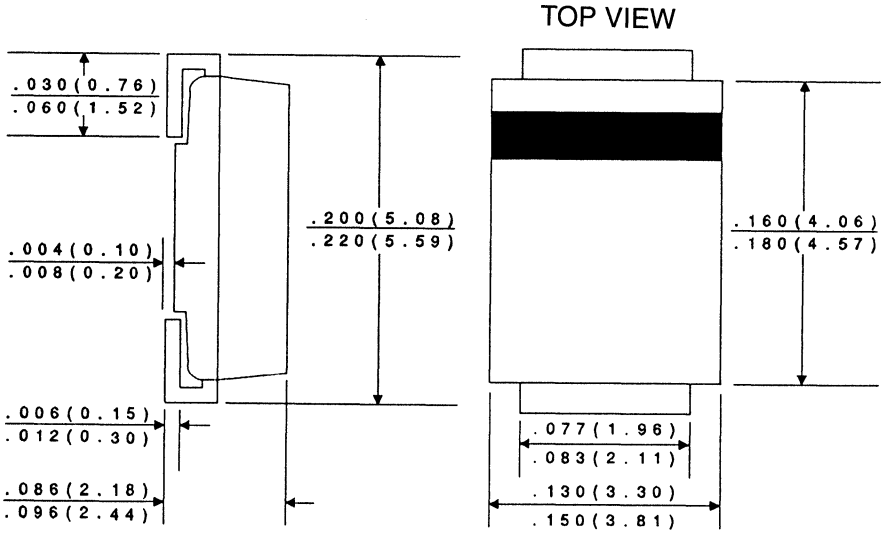
MAXIMUM RATINGS: (T_A=25°C unless otherwise noted)

	SYMBOL	CMR1U -01	CMR1U -02	CMR1U -04	CMR1U -06	UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	100	200	400	600	V
DC Blocking Voltage	V_R	100	200	400	600	V
RMS Reverse Voltage	$V_{R(RMS)}$	70	140	280	420	V
Average Forward Current(T_A=75°C)	I_O		1.0			A
Peak Forward Surge Current (8.3ms)	I_{FSM}		30			A
Operating and Storage Junction Temperature	T_J,T_{stg}		-65 to +175			°C
Thermal Resistance	Θ_{JL}		20			°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_R	V_R=Rated V_{RRM}		5.0	μA
I_R	V_R=Rated V_{RRM}, T_A=125°C		100	μA
V_F	I_F=1.0A, (CMR1U-01, CMR1U-02)		1.00	V
V_F	I_F=1.0A, (CMR1U-04)		1.25	V
V_F	I_F=1.0A, (CMR1U-06)		1.40	V
t_{rr}	IF=0.5A, IR=1.0A, Recover to 0.25A (CMR1U-01, -02, -04)		50	ns
t_{rr}	IF=0.5A, IR=1.0A, Recover to 0.25A (CMR1U-06)		100	ns

All dimensions in inches (mm).



Marking Codes:

DEVICE	MARKING CODE
CMR1U-01	CU01
CMR1U-02	CU02
CMR1U-04	CU04
CMR1U-06	CU06

DATA SHEET

R1

CMR3-02
CMR3-04
CMR3-06
CMR3-10

GENERAL PURPOSE RECTIFIER
3.0 AMP, 200 THRU 1,000 VOLTS

SMC CASE

Central™
Semiconductor Corp.

FEATURES:

- LOW COST
- SPECIAL SELECTIONS AVAILABLE
- HIGH RELIABILITY
- SUPERIOR LOT TO LOT CONSISTENCY
- GLASS PASSIVATED CHIP
- "C" BEND CONSTRUCTION PROVIDES STRAIN RELIEF WHEN MOUNTED ON PC BOARD

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 3.0 Amp Surface Mount Silicon Rectifier is a high quality, well constructed,highly reliable component designed for use in all types of commercial, industrial, entertainment, computer, and automotive applications. To order devices on 16mm Tape and Reel (3000/13" Reel), add TR13 suffix to part number.

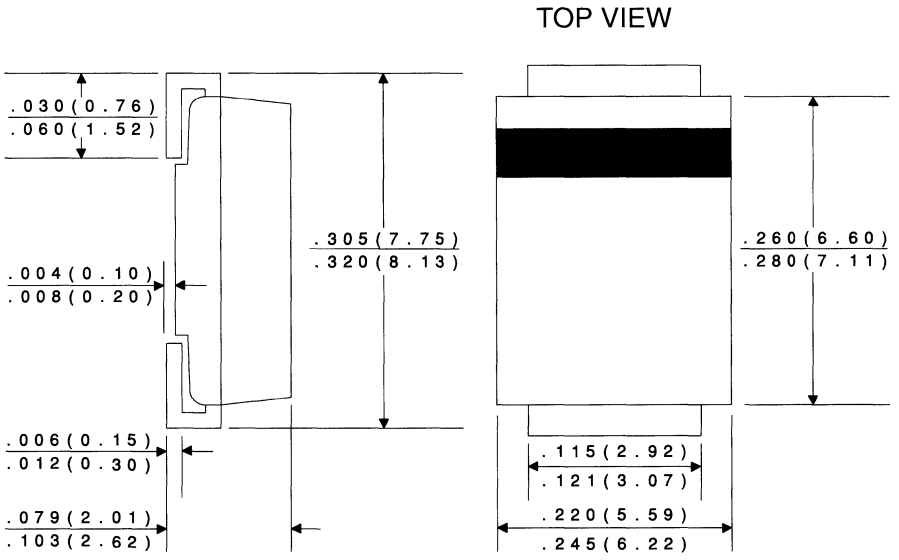
MAXIMUM RATINGS: (T_A=25°C unless otherwise noted)

	SYMBOL	CMR3-02	CMR3-04	CMR3-06	CMR3-10	UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	200	400	600	1000	V
DC Blocking Voltage	V_R	200	400	600	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	140	280	420	700	V
Average Forward Current(T_A=75°C)	I_O		3.0			A
Peak Forward Surge Current (8.3ms)	I_{FSM}		200			A
Operating and Storage Junction Temperature	T_J,T_{stg}		-65 to +175			°C
Thermal Resistance	Θ_{JL}		10			°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
V_F	I_F=3.0A		1.2	V
I_R	V_R=Rated V_{RRM}		5.0	μA
I_R	V_R=Rated V_{RRM}, T_A=125°C		250	μA

All dimensions in inches (mm).



Marking Codes:

DEVICE	MARKING CODE
CMR3-02	C302
CMR3-04	C304
CMR3-06	C306
CMR3-10	C310

CMR3U-01
CMR3U-02
CMR3U-04
CMR3U-06

ULTRA FAST RECOVERY RECTIFIER
3.0 AMP, 100 THRU 600 VOLTS

SMC CASE

Central™
Semiconductor Corp.

FEATURES:

- LOW COST
- SPECIAL SELECTIONS AVAILABLE
- HIGH RELIABILITY
- SUPERIOR LOT TO LOT CONSISTENCY
- GLASS PASSIVATED CHIP
- "C" BEND CONSTRUCTION PROVIDES STRAIN RELIEF WHEN MOUNTED ON PC BOARD

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 3.0 Amp Surface Mount Silicon Ultra Fast Recovery Rectifier is a high quality, well constructed, highly reliable component designed for use in all types of commercial, industrial, entertainment, computer, and automotive applications. To order devices on 16mm Tape and Reel (3000/13" Reel), add TR13 suffix to part number.

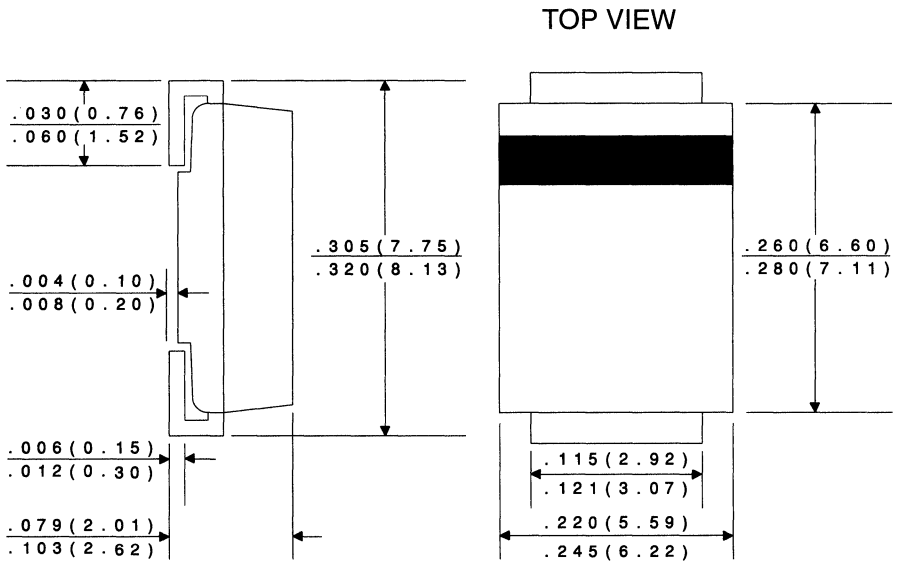
MAXIMUM RATINGS: (T_A=25°C unless otherwise noted)

	SYMBOL	CMR3U -01	CMR3U -02	CMR3U -04	CMR3U -06	UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	100	200	400	600	V
DC Blocking Voltage	V_R	100	200	400	600	V
RMS Reverse Voltage	$V_{R(RMS)}$	70	140	280	420	V
Average Forward Current(T_A=75°C)	I_O		3.0			A
Peak Forward Surge Current (8.3ms)	I_{FSM}		150			A
Operating and Storage Junction Temperature	T_J,T_{stg}		-65 to +175			°C
Thermal Resistance	Θ_{JL}		10			°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_R	V_R=Rated V_{RRM}		5.0	μA
I_R	V_R=Rated V_{RRM}, T_A=100°C		500	μA
V_F	I_F=3.0A, (CMR3U-01, CMR3U-02)		1.00	V
V_F	I_F=3.0A, (CMR3U-04)		1.25	V
V_F	I_F=3.0A, (CMR3U-06)		1.40	V
t_{rr}	I_F=500mA, I_R=1.0A, Irr=250mA (CMR3U-01, -02, -04)		50	ns
t_{rr}	I_F=500mA, I_R=1.0A, Irr=250mA (CMR3U-06)		100	ns

All dimensions in inches (mm).



Marking Codes:

DEVICE	MARKING CODE
CMR3U-01	CU301
CMR3U-02	CU302
CMR3U-04	CU304
CMR3U-06	CU306

NEW

CMSD4448

SUPER-MINI
HIGH SPEED
SWITCHING DIODE

SUPER mini™

SOT-323 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMSD4448 type is a ultra-high speed silicon switching diode manufactured by the epitaxial planar process, in an epoxy molded super-mini surface mount package, designed for high speed switching applications.

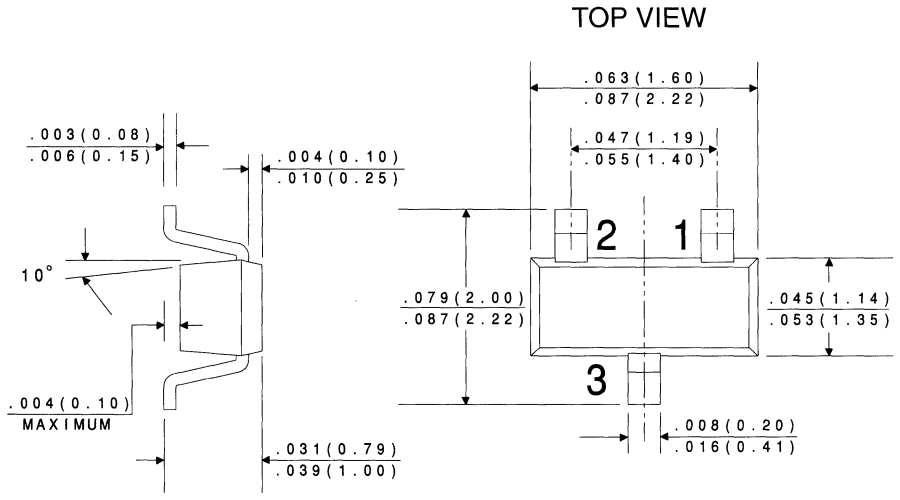
MAXIMUM RATINGS: (T_A=25°C)

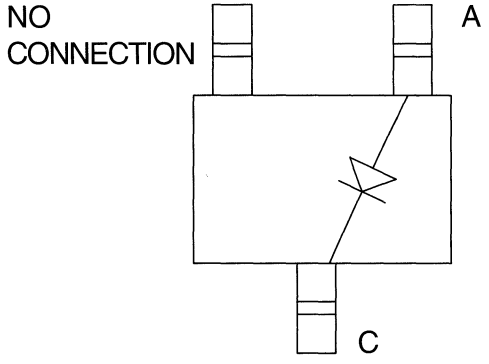
	SYMBOL		UNITS
Continuous Reverse Voltage	V_R	75	V
Peak Repetitive Reverse Voltage	V_{RRM}	100	V
Continuous Forward Current	I_F	250	mA
Peak Repetitive Forward Current	I_{FRM}	250	mA
Forward Surge Current, tp=1 μsec.	I_{FSM}	4000	mA
Forward Surge Current, tp=1 sec.	I_{FSM}	1000	mA
Power Dissipation	P_D	250	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	500	°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
V_{BR}	I_R=5.0μA	75		V
V_{BR}	I_R=100μA	100		V
I_R	V_R=20V		25	nA
V_F	I_F=5.0mA	0.62	0.72	V
V_F	I_F=100mA		1.0	V
C_T	V_R=0, f=1 MHz		4.0	pF
t_{rr}	I_R=I_F=10mA, R_L=100Ω, Rec. to 1.0mA		4.0	ns

All dimensions in inches (mm).





CMSH1-20
CMSH1-40
CMSH1-60

SCHOTTKY BARRIER RECTIFIER

SMB CASE

Central™
Semiconductor Corp.

FEATURES:

- LOW COST
- HIGH RELIABILITY
- GLASS PASSIVATED CHIP
- SPECIAL SELECTIONS AVAILABLE
- SUPERIOR LOT TO LOT CONSISTENCY
- "C" BEND CONSTRUCTION PROVIDES STRAIN RELIEF WHEN MOUNTED ON PC BOARD

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 1.0 Amp Surface Mount Silicon Schottky Rectifier is a high quality, well constructed, highly reliable component designed for use in all types of commercial, industrial, entertainment, computer, and automotive applications. To order devices on 12mm Tape and Reel (3000/13" Reel), add TR13 suffix to part number.

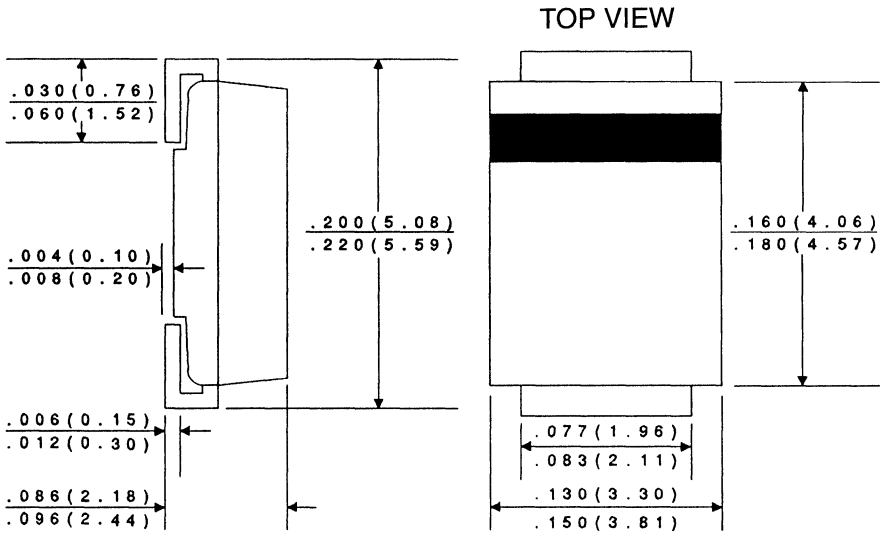
MAXIMUM RATINGS: (T_A=25°C unless otherwise noted)

	SYMBOL	CMSH1-20	CMSH1-40	CMSH1-60	UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	20	40	60	V
DC Blocking Voltage	V_R	20	40	60	V
RMS Reverse Voltage	$V_{R(RMS)}$	14	28	42	V
Average Forward Current(T_A=75°C)	I_O		1.0		A
Peak Forward Surge Current (8.3ms)	I_{FSM}		30		A
Operating and Storage Junction Temperature	T_J,T_{stg}		-65 to +150		°C
Thermal Resistance	Θ_{JL}		20		°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
V_F	I_F=1.0A (CMSH1-20 AND CMSH1-40)			0.55	V
V_F	I_F=1.0A (CMSH1-60)			0.70	V
I_R	V_R=Rated V_{RRM}			0.50	mA
I_R	V_R=Rated V_{RRM}, T_A=125°C			10	mA
C_J	V_R=4.0V, f=1.0MHz, (CMSH1-20 AND CMSH1-40)		110		pF
C_J	V_R=4.0V, f=1.0MHz, (CMSH1-60)		80		pF

All dimensions in inches (mm).



Marking Codes:

DEVICE	MARKING CODE
CMSH1-20	CS20
CMSH1-40	CS40
CMSH1-60	CS60

R1

NEW

CMSH2-40

SCHOTTKY BARRIER RECTIFIER
2.0 AMP, 40 VOLTS

SMB CASE

Central™
Semiconductor Corp.

FEATURES:

- EXTREMELY LOW FORWARD VOLTAGE DROP
- LOW COST
- HIGH RELIABILITY
- GLASS PASSIVATED CHIP
- SPECIAL SELECTIONS AVAILABLE
- SUPERIOR LOT TO LOT CONSISTENCY
- "C" BEND CONSTRUCTION PROVIDES STRAIN RELIEF WHEN MOUNTED ON PC BOARD

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2.0 Amp Surface Mount Silicon Schottky Rectifier is a high quality, well constructed, highly reliable component designed for use in all types of commercial, industrial, entertainment, computer, and automotive applications. To order devices on 12mm Tape and Reel (3000/13" Reel), add TR13 suffix to part number.

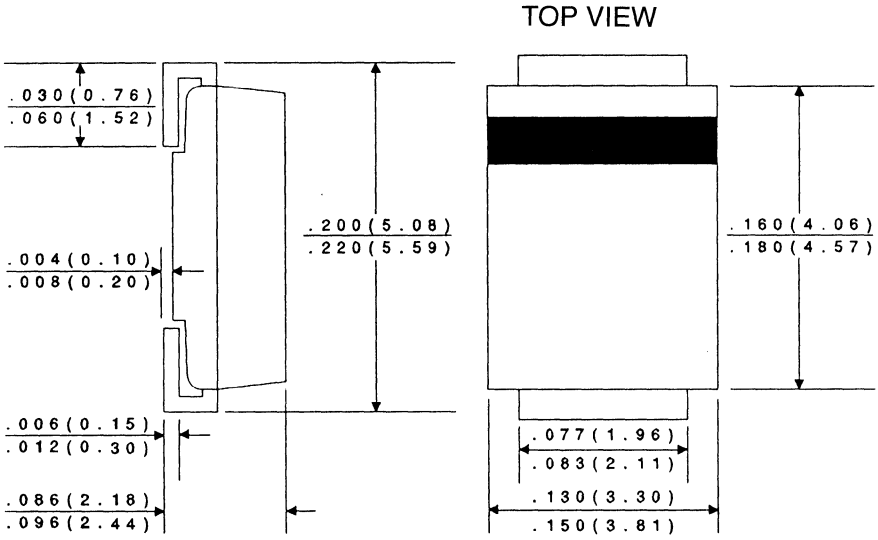
MAXIMUM RATINGS: (T_A=25°C unless otherwise noted)

	SYMBOL		UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	40	V
DC Blocking Voltage	V_R	40	V
RMS Reverse Voltage	$V_{R(RMS)}$	28	V
Average Forward Current(T_L=105°C)	I_O	2.0	A
Peak Forward Surge Current (8.3ms)	I_{FSM}	50	A
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JL}	20	°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
V_F	I_F=1.0A		0.41	0.50	V
V_F	I_F=2.0A		0.45	0.55	V
I_R	V_R=40V		0.10	0.50	mA
I_R	V_R=40V, T_A=100°C			20	mA
C_J	V_R=4.0V, f=1.0MHz		200		pF

All dimensions in inches (mm).



Marking Codes:

DEVICE	MARKING CODE
CMSH2-40	CS240

NEW

CMSH3-20
CMSH3-40
CMSH3-60

SCHOTTKY BARRIER RECTIFIER
3.0 AMP, 20 THRU 60 VOLTS

SMC CASE

Central™
Semiconductor Corp.

FEATURES:

- LOW COST
- SUPERIOR LOT TO LOT CONSISTENCY
- HIGH RELIABILITY
- "C" BEND CONSTRUCTION PROVIDES STRAIN RELIEF WHEN MOUNTED ON PC BOARD
- SPECIAL SELECTIONS AVAILABLE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 3.0 Amp Surface Mount Silicon Schottky Rectifier is a high quality, well constructed, highly reliable component designed for use in all types of commercial, industrial, entertainment,computer, and automotive applications. To order devices on 16mm Tape and Reel (3000/ 13" Reel), add TR13 suffix to part number.

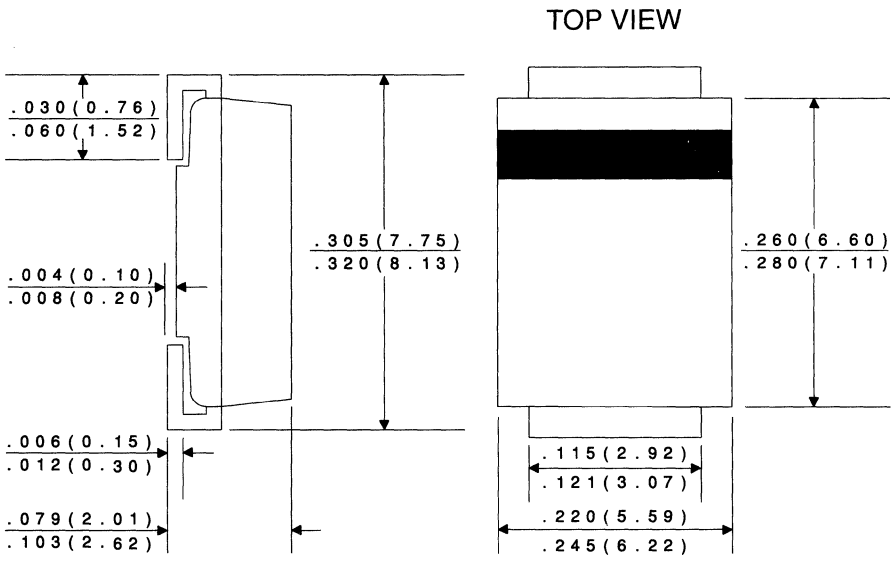
MAXIMUM RATINGS: (T_A=25°C unless otherwise noted)

	SYMBOL	CMSH3-20	CMSH3-40	CMSH3-60	UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	20	40	60	V
DC Blocking Voltage	V_R	20	40	60	V
RMS Reverse Voltage	$V_{R(RMS)}$	14	28	42	V
Average Forward Current(T_A=75°C)	I_O		3.0		A
Peak Forward Surge Current (8.3ms)	I_{FSM}		150		A
Operating and Storage Junction Temperature	T_J,T_{stg}		-65 to +150		°C
Thermal Resistance	Θ_{JL}		10		°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_R	V_R=Rated V_{RRM}			500	μA
I_R	V_R=Rated V_{RRM}, T_A=100°C			20	mA
V_F	I_F=3.0A (CMSH3-20 AND CMSH3-40)			0.50	V
V_F	I_F=3.0A (CMSH3-60)			0.70	V

All dimensions in inches (mm).



Marking Codes:

DEVICE	MARKING CODE
CMSH3-20	CS320
CMSH3-40	CS340
CMSH3-60	CS360

NEW

CMST2222A

SUPER-MINI
NPN SILICON TRANSISTOR

SUPER™ mini

SOT-323 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMST2222A type is an NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a super-mini surface mount package, designed for small signal general purpose and switching applications.

MAXIMUM RATINGS: (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	75	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	600	mA
Power Dissipation	P_D	250	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	500	°C/W

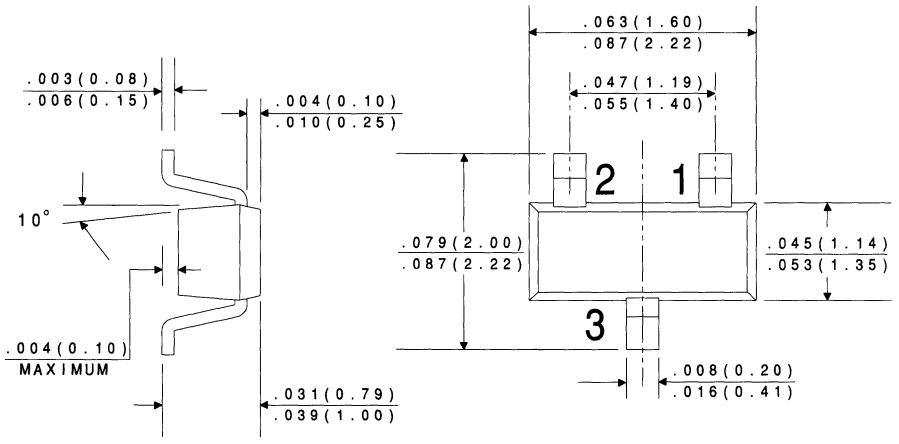
ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=60V		10	nA
I_{CBO}	V_{CB}=60V, T_A=125°C		10	μA
I_{EBO}	V_{EB}=3.0V		10	nA
I_{CEV}	V_{CE}=60V, V_{EB}=3.0V		10	nA
BV_{CBO}	I_C=10μA	75		V
BV_{CEO}	I_C=10mA	40		V
BV_{EBO}	I_E=10μA	6.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.3	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		1.0	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA	0.6	1.2	V
$V_{BE(SAT)}$	I_C=500mA, I_B=50mA		2.0	V
h_{FE}	V_{CE}=10V, I_C=0.1mA	35		
h_{FE}	V_{CE}=10V, I_C=1.0mA	50		
h_{FE}	V_{CE}=10V, I_C=10mA	75		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=10V, I_C=150mA	100	300	
h_{FE}	V_{CE}=1.0V, I_C=150mA	50		
h_{FE}	V_{CE}=10V, I_C=500mA	40		
f_T	V_{CE}=20V, I_C=20mA, f=100MHz	300		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		8.0	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		25	pF
h_{ie}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	2.0	8.0	kΩ
h_{ie}	V_{CE}=10V, I_C=10mA, f=1.0kHz	0.25	1.25	kΩ
h_{re}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz		8.0	$x10^{-4}$
h_{re}	V_{CE}=10V, I_C=10mA, f=1.0kHz		4.0	$x10^{-4}$
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	50	300	
h_{fe}	V_{CE}=10V, I_C=10mA, f=1.0kHz	75	375	
h_{oe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	5.0	35	μmhos
h_{oe}	V_{CE}=10V, I_C=10mA, f=1.0kHz	25	200	μmhos
$rb'C_c$	V_{CB}=10V, I_E=20mA, f=31.8MHz		150	ps
NF	V_{CE}=10V, I_C=100mA, R_S=1.0kΩ, f=1.0kHz		4.0	dB
t_d	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		10	ns
t_r	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		25	ns
t_s	V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA		225	ns
t_f	V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA		60	ns

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

NEW

CMST2907A

SUPER-MINI
PNP SILICON TRANSISTOR

SUPER™ mini

SOT-323 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMST2907A type is an PNP silicon transistor manufactured by the epitaxial planar process, epoxy molded in a super-mini surface mount package, designed for small signal general purpose and switching applications.

MAXIMUM RATINGS: (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	600	mA
Power Dissipation	P_D	250	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	500	°C/W

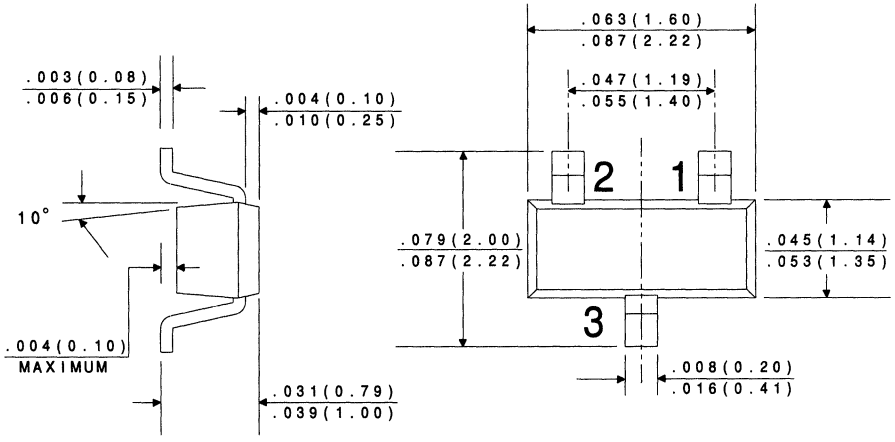
CTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=50V		10	nA
I_{CBO}	V_{CB}=50V, T_A=125°C		10	μA
I_{CEV}	V_{CE}=30V, V_{BE}=0.5V		50	nA
BV_{CBO}	I_C=10μA	60		V
BV_{CEO}	I_C=10mA	60		V
BV_{EBO}	I_E=10μA	5.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.4	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		1.6	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA		1.3	V
$V_{BE(SAT)}$	I_C=500mA, I_B=50mA		2.6	V
h_{FE}	V_{CE}=10V, I_C=0.1mA	75		
h_{FE}	V_{CE}=10V, I_C=1.0mA	100		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=10V, I_C=10mA	100		
h_{FE}	V_{CE}=10V, I_C=150mA	100	300	
h_{FE}	V_{CE}=10V, I_C=500mA	50		
f_T	V_{CE}=20V, I_C=50mA, f=100MHz	200		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		8.0	pF
C_{ib}	V_{BE}=2.0V, I_C=0, f=1.0MHz		30	pF
t_{on}	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		45	ns
t_d	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		10	ns
t_r	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		40	ns
t_{off}	V_{CC}=6.0V, I_C=150mA, I_{B1}=I_{B2}=15mA		100	ns
t_s	V_{CC}=6.0V, I_C=150mA, I_{B1}=I_{B2}=15mA		80	ns
t_f	V_{CC}=6.0V, I_C=150mA, I_{B1}=I_{B2}=15mA		30	ns

All dimensions in inches (mm).

TOP VIEW



DATA SHEET

LEAD CODE:

1) BASE
2) EMITTER
3) COLLECTOR

CMST3904 NPN
CMST3906 PNP

SUPER-MINI
COMPLEMENTARY
SILICON TRANSISTORS

SUPER mini™

SOT-323 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMST3904, CMST3906 types are complementary silicon transistors manufactured by the epitaxial planar process, epoxy molded in a super-mini surface mount package, designed for small signal general purpose amplifier and switching applications.

MAXIMUM RATINGS: (T_A=25°C)

	SYMBOL	CMST3904	CMST3906	UNITS
Collector-Base Voltage	V_{CBO}	60	40	V
Collector-Emitter Voltage	V_{CEO}	40	40	V
Emitter-Base Voltage	V_{EBO}	6.0	5.0	V
Collector Current	I_C	200		mA
Power Dissipation	P_D	250		mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150		°C
Thermal Resistance	Θ_{JA}	500		°C/W

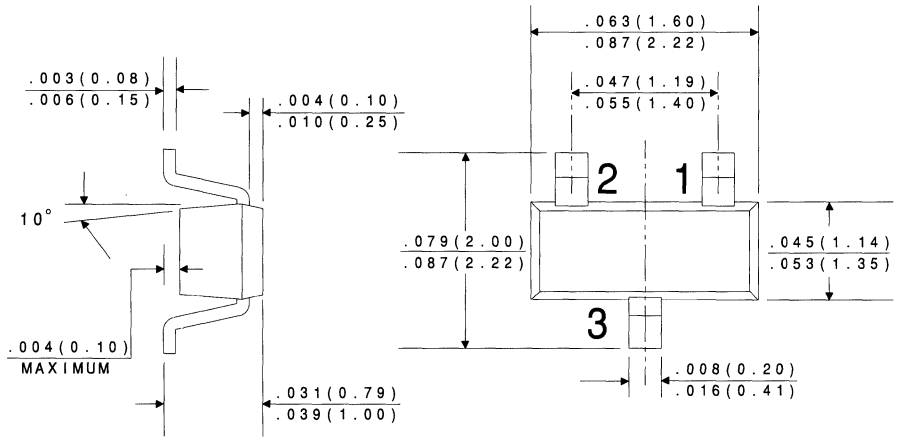
ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

		CMST3904		CMST3906		
SYMBOL	TEST CONDITIONS	MIN	MAX	MIN	MAX	UNITS
I_{CEV}	V_{CE}=30V, V_{EB}=3.0V		50		50	nA
BV_{CBO}	I_C=10μA		60		40	V
BV_{CEO}	I_C=1.0mA		40		40	V
BV_{EBO}	I_E=10μA		6.0		5.0	V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.20		0.25	V
$V_{CE(SAT)}$	I_C=50mA, I_B=5.0mA		0.30		0.40	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA	0.65	0.85	0.65	0.85	V
$V_{BE(SAT)}$	I_C=50mA, I_B=5.0mA		0.95		0.95	V
h_{FE}	V_{CE}=1.0V, I_C=0.1mA	40		60		
h_{FE}	V_{CE}=1.0V, I_C=1.0mA	70		80		
h_{FE}	V_{CE}=1.0V, I_C=10mA	100	300	100	300	

SYMBOL	TEST CONDITIONS	CMST3904 MIN	CMST3904 MAX	CMST3906 MIN	CMST3906 MAX	UNITS
h_{FE}	V_{CE}=1.0V, I_C=50mA	60		60		
h_{FE}	V_{CE}=1.0V, I_C=100mA	30		30		
f_T	V_{CE}=20V, I_C=10mA, f=100MHz	300		250		MHz
C_{ob}	V_{CB}=5.0V, I_E=0, f=1.0MHz		4.0		4.5	pF
C_{ib}	V_{BE}=0.5V, I_C=0, f=1.0MHz		8.0		10	pF
h_{ie}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	1.0	10	2.0	12	kΩ
h_{re}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	0.5	8.0	0.1	10	x10^{-4}
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	100	400	100	400	
h_{oe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	1.0	40	3.0	60	µmhos
NF	V_{CE}=5.0V, I_C=100mA, R_S=1.0kΩ f=10Hz to 15.7kHz		5.0		4.0	dB
t_d	V_{CC}=3.0V, V_{BE}=0.5, I_C=10mA, I_{B1}=1.0mA		35		35	ns
t_r	V_{CC}=3.0V, V_{BE}=0.5, I_C=10mA, I_{B1}=1.0mA		35		35	ns
t_s	V_{CC}=3.0V, I_C=10mA, I_{B1}=I_{B2}=1.0mA		200		225	ns
t_f	V_{CC}=3.0V, I_C=10mA, I_{B1}=I_{B2}=1.0mA		50		75	ns

All dimensions in inches (mm).

TOP VIEW



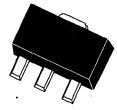
LEAD CODE:

1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

CQ89B
CQ89D
CQ89M
CQ89N

2.0 AMP TRIAC
200 THRU 800 VOLTS



SOT-89 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CQ89B series types are epoxy molded silicon triacs designed for full wave AC control applications featuring gate triggering in all four (4) quadrants.

MAXIMUM RATINGS (T_C=25°C)

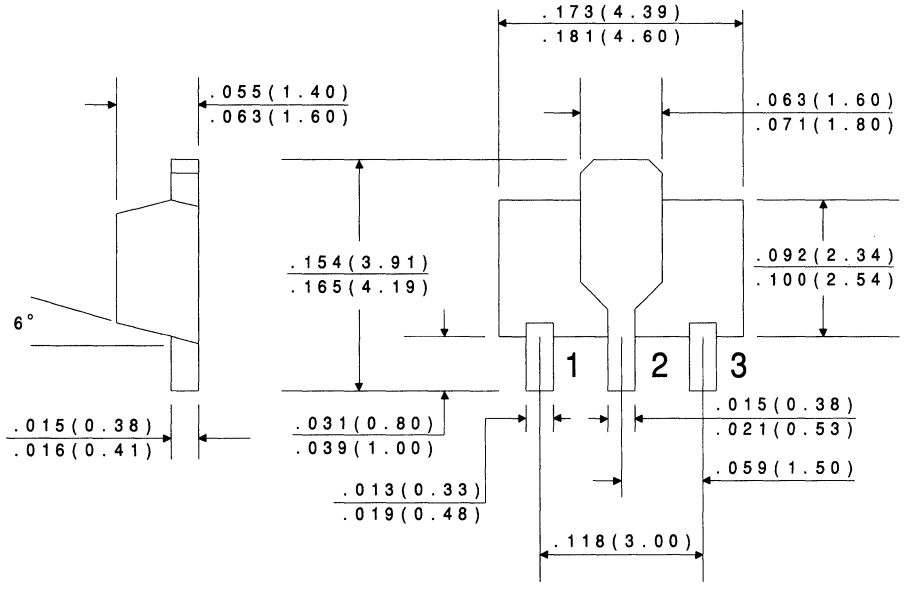
	SYMBOL	CQ89B	CQ89D	CQ89M	CQ89N	UNITS
Peak Repetitive Off-State Voltage	V_{DRM}	200	400	600	800	V
RMS On-State Current (T_C=80°C)	$I_{T(RMS)}$		2.0			A
Peak One Cycle Surge (10ms)	I_{TSM}		10			A
Peak Gate Current	I_{GM}		1.0			A
Average Gate Power Dissipation	$P_{G(AV)}$		0.1			W
StorageTemperature	T_{stg}		-45 to +150			°C
Junction Temperature	T_J		-45 to +125			°C
Thermal Resistance	Θ_{J-C}		10			°C/W

ELECTRICAL CHARACTERISTICS (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{DRM}	V_D=Rated V_{DRM}			5.00	μA
I_{DRM}	V_D=Rated V_{DRM}, T_C=125°C			200	μA
I_{GT}	V_D=12V, QUAD I, II, III, IV			25	mA
I_H	V_D=12V			25	mA
V_{GT}	V_D=12V			2.00	V
V_{TM}	I_T=3.0A			1.75	V
dv/dt	V_D=⅔ V_{DRM}, T_C=125°C	100			V/μs

All dimensions in inches (mm).

BOTTOM VIEW



LEAD CODE:

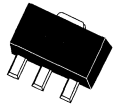
1) GATE
2) MT2
3) MT1

DATA SHEET

R1

CQ89BS
CQ89DS
CQ89MS
CQ89NS

2.0 AMP TRIAC
200 THRU 800 VOLTS



SOT-89 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CQ89BS series types are epoxy molded silicon triacs designed for full wave AC control applications featuring gate triggering in all four (4) quadrants.

MAXIMUM RATINGS (T_C=25°C)

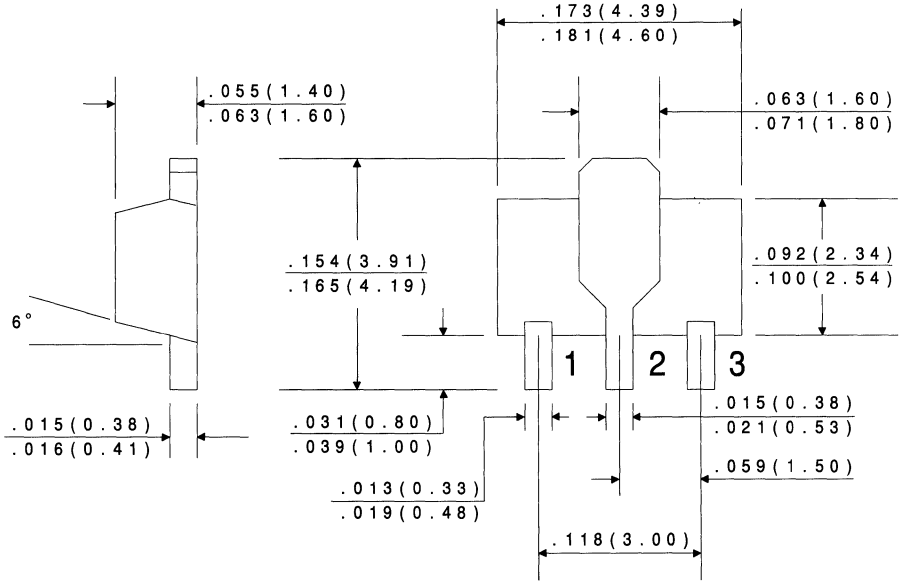
	SYMBOL	CQ89BS	CQ89DS	CQ89MS	CQ89NS	UNITS
Peak Repetitive Off-State Voltage	V_{DRM}	200	400	600	800	V
RMS On-State Current (T_C=80°C)	$I_{T(RMS)}$		2.0			A
Peak One Cycle Surge (10ms)	I_{TSM}		10			A
Peak Gate Current	I_{GM}		1.0			A
Average Gate Power Dissipation	$P_{G(AV)}$		0.1			W
StorageTemperature	T_{stg}		-45 to +150			°C
Junction Temperature	T_J		-45 to +125			°C
Thermal Resistance	Θ_{J-C}		10			°C/W

ELECTRICAL CHARACTERISTICS (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{DRM}	V_D=Rated V_{DRM}			5.0	μA
I_{DRM}	V_D=Rated V_{DRM}, T_C=125°C			200	μA
I_{GT}	V_D=12V, QUAD I, II, III, IV			5.0	mA
I_H	V_D=12V			5.0	mA
V_{GT}	V_D=12V			2.0	V
V_{TM}	I_T=3.0A			1.75	V
dv/dt	V_D=⅔ V_{DRM}, T_C=125°C	30			V/μs

All dimensions in inches (mm).

BOTTOM VIEW



LEAD CODE:

1) GATE
2) MT2
3) MT1

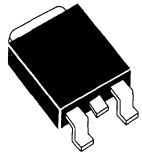
DATA SHEET

NEW

CSHD3-40

SCHOTTKY RECTIFIER
SINGLE, 3.0 AMPS, 40 VOLTS

DPAK POWER!™



DPAK CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CSHD3-40, Silicon Schottky Rectifier is a high quality, well constructed, highly reliable component designed for use in all types of commercial, industrial, entertainment, computer and automative applications.

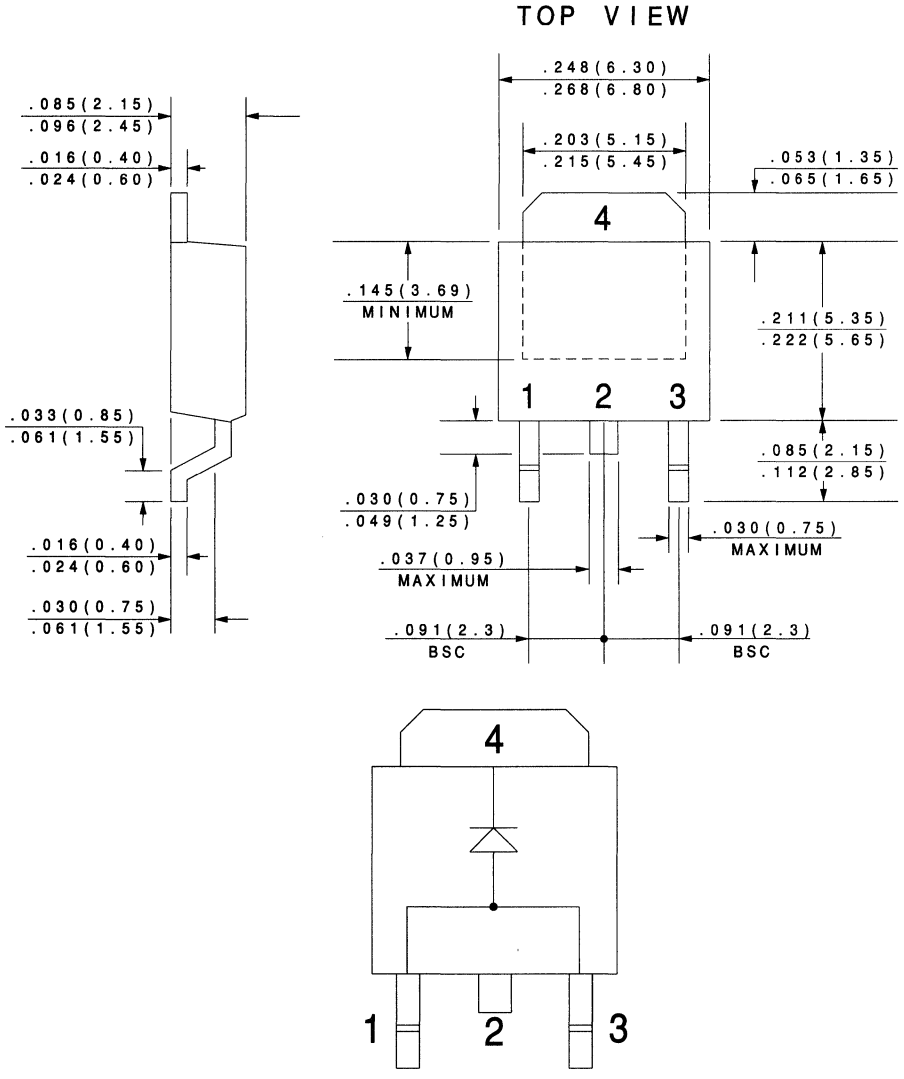
MAXIMUM RATINGS: (T_C=25°C unless otherwise noted)

	SYMBOL		UNITS
Peak Working Reverse Voltage	V_{RWM}	40	V
DC Blocking Voltage	V_R	40	V
Average Rectified Forward Current (T_C=125°C)	I_O	3.0	A
Peak Repetitive Forward Current (T_C=125°C)	I_{FRM}	6.0	A
Peak Forward Surge Current	I_{FSM}	75	A
Peak Repetitive Reverse Surge Current (tp=2 μs)	I_{RRM}	1.0	A
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JC}	6.0	°C/W

ELECTRICAL CHARACTERISTICS: (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_R	V_R=40V		200	μA
I_R	V_R=40V, T_C=125°C		20	mA
V_F	I_F=3.0A		0.60	V
V_F	I_F=3.0A, T_C=125°C		0.45	V
V_F	I_F=6.0A		0.70	V
V_F	I_F=6.0A, T_C=125°C		0.625	V

All dimensions in inches (mm).



LEAD CODE:

1) ANODE
2) CATHODE
3) ANODE
4) CATHODE

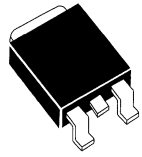
PIN 2 IS COMMON TO THE TAB (4).

NEW

CSHD6-40C

SCHOTTKY RECTIFIER
DUAL,COMMON CATHODE
6.0 AMPS, 40 VOLTS

DPAK POWER!™



DPAK CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CSHD6-40C, Silicon Schottky Rectifier is a high quality, well constructed, highly reliable component designed for use in all types of commercial, industrial, entertainment, computer and automative applications.

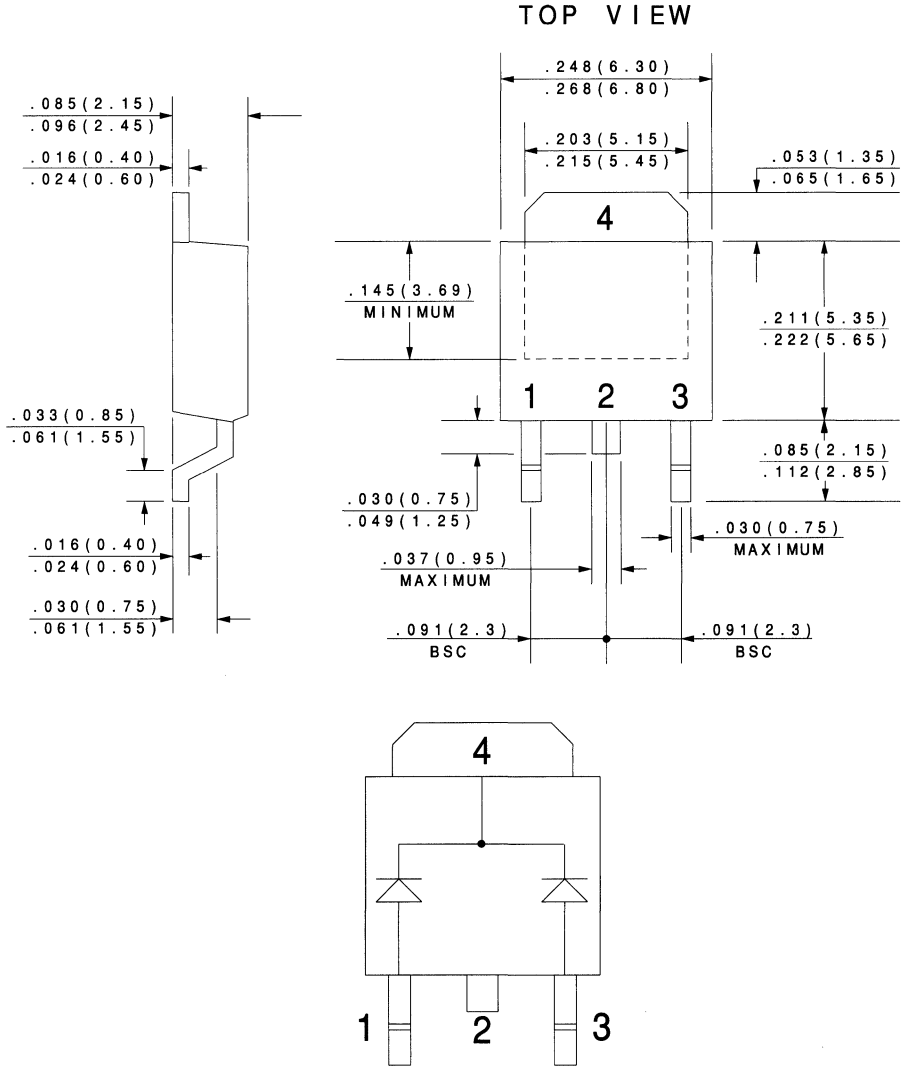
MAXIMUM RATINGS: (T_C=25°C unless otherwise noted)

	SYMBOL		UNITS
Peak Working Reverse Voltage	V_{RWM}	40	V
DC Blocking Voltage	V_R	40	V
Average Rectified Forward Current (T_C=125°C) Per Diode	I_O	3.0	A
Average Rectified Forward Current (T_C=125°C) Per Device	I_O	6.0	A
Peak Repetitive Forward Current (T_C=125°C)	I_{FRM}	6.0	A
Peak Forward Surge Current	I_{FSM}	75	A
Peak Repetitive Reverse Surge Current (tp=2 μs)	I_{RRM}	1.0	A
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance, Per Diode	Θ_{JC}	6.0	°C/W

ELECTRICAL CHARACTERISTICS PER DIODE: (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_R	V_R=40V		100	μA
I_R	V_R=40V, T_C=125°C		15	mA
V_F	I_F=3.0A		0.60	V
V_F	I_F=3.0A, T_C=125°C		0.45	V
V_F	I_F=6.0A		0.70	V
V_F	I_F=6.0A, T_C=125°C		0.625	V

All dimensions in inches (mm).



LEAD CODE:

1) ANODE #1
2) CATHODE
3) ANODE #2
4) CATHODE

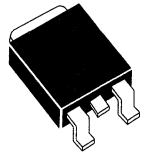
PIN 2 IS COMMON TO THE TAB (4).

NEW

CUD3-02

ULTRA FAST RECOVERY RECTIFIER SINGLE, 3.0 AMPS, 200 VOLTS

DPAK POWER!™



DPAK CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CUD3-02, Silicon Ultra Fast Recovery Rectifier is a high quality, well constructed, highly reliable component designed for use in all types of commercial, industrial, entertainment, computer and automative applications.

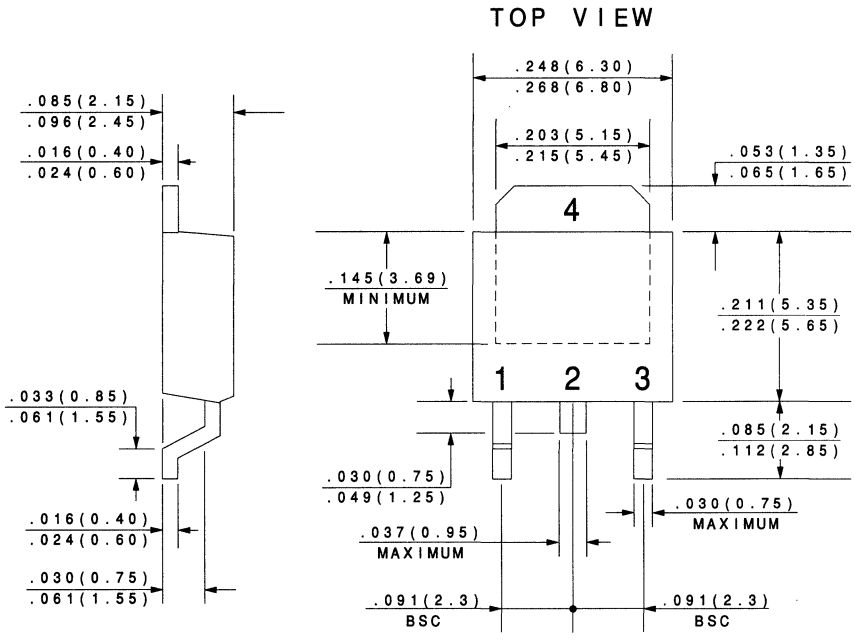
MAXIMUM RATINGS: (T_C=25°C unless otherwise noted)

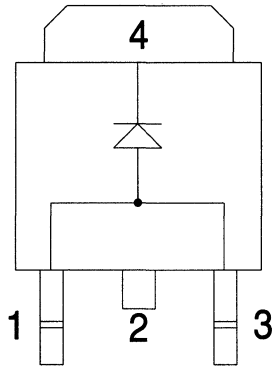
	SYMBOL		UNITS
Peak Working Reverse Voltage	V_{RRM}	200	V
DC Blocking Voltage	V_R	200	V
Average Rectified Forward Current (T_C=125°C)	I_O	3.0	A
Peak Repetitive Forward Current (T_C=125°C)	I_{FRM}	6.0	A
Peak Forward Surge Current (tp=2 μs)	I_{FSM}	75	A
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JC}	6.0	°C/W

ELECTRICAL CHARACTERISTICS: (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNIT
I_R	V_R=200V		5.0	μA
I_R	V_R=200V, T_C=125°C		500	μA
V_F	I_F=3.0A		0.95	V
V_F	I_F=3.0A, T_C=125°C		0.75	V
t_{rr}	V_R=30V, I_F=1.0A, di/dt=50A/μs		35	ns

All dimensions in inches (mm).





LEAD CODE:

1) ANODE
2) CATHODE
3) ANODE
4) CATHODE

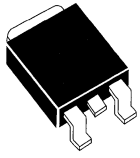
PIN 2 IS COMMON TO THE TAB (4).

NEW

CUD6-02C

ULTRA FAST RECOVERY RECTIFIER
DUAL, COMMON CATHODE
6.0 AMPS, 200 VOLTS

DPAK POWER!™



DPAK CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CUD6-02C, Silicon Ultra Fast Recovery Rectifier is a high quality, well constructed, highly reliable component designed for use in all types of commercial, industrial, entertainment, computer, and automative applications.

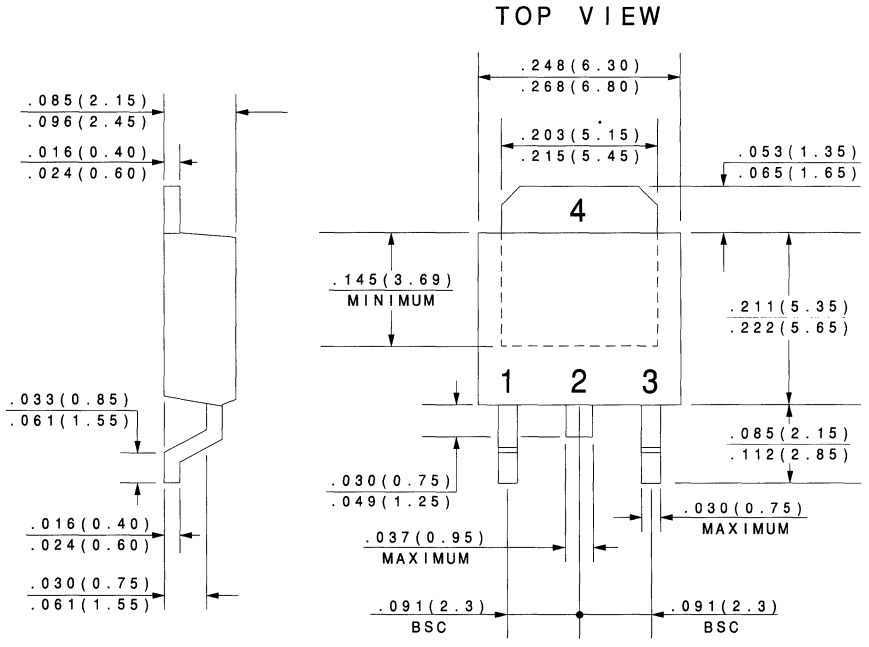
MAXIMUM RATINGS: (T_C=25°C unless otherwise noted)

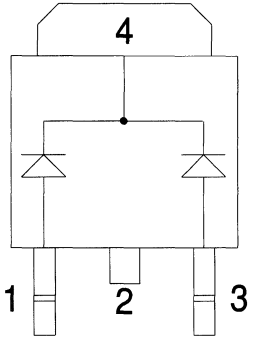
	SYMBOL		UNITS
Peak Working Reverse Voltage	V_{RRM}	200	V
DC Blocking Voltage	V_R	200	V
Average Rectified Forward Current (T_C=125°C) Per Diode	I_O	3.0	A
Average Rectified Forward Current (T_C=125°C) Per Device	I_O	6.0	A
Peak Repetitive Forward Current (T_C=125°C)	I_{FRM}	6.0	A
Peak Forward Surge Current (tp=2 μs)	I_{FSM}	75	A
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JC}	6.0	°C/W

ELECTRICAL CHARACTERISTICS PER DIODE: (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNIT
I_R	V_R=200V		5.0	μA
I_R	V_R=200V, T_C=125°C		500	μA
V_F	I_F=3.0A		1.0	V
V_F	I_F=3.0A, T_C=125°C		0.95	V
V_F	I_F=6.0A		1.2	V
V_F	I_F=6.0A, T_C=125°C		1.1	V
t_{rr}	V_R=30V, I_F=1.0A, di/dt=50A/μs		35	ns

All dimensions in inches (mm).





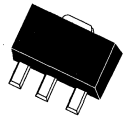
LEAD CODE:

1) ANODE 1
2) CATHODE
3) ANODE 2
4) CATHODE

PIN 2 IS COMMON TO THE TAB (4).

CXSH-4

SCHOTTKY BARRIER RECTIFIER



SOT-89 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CXSH-4 type is a schottky barrier rectifier mounted in an epoxy molded case using a metal to silicon junction to yield low forward voltage drop. This device utilizes a single chip with anode connections made to PIN 1 and PIN 3.

MAXIMUM RATINGS (T_A=25°C)

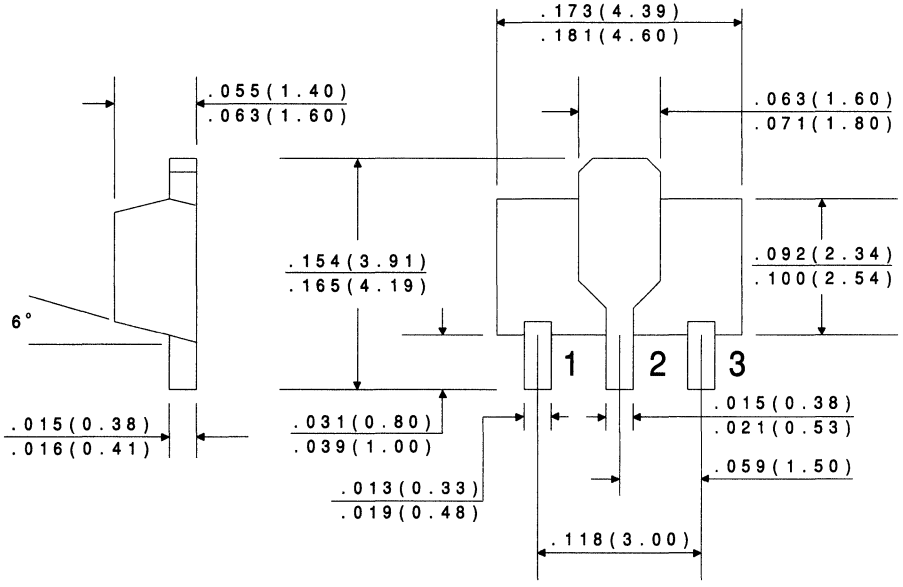
	SYMBOL		UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	40	V
DC Blocking Voltage	V_R	40	V
RMS Reverse Voltage	$V_{R(RMS)}$	28	V
Average Forward Current	I_O	1.0	A
Peak Forward Surge Current(8.3ms, Non-Rep.)	I_{FSM}	10	A
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C

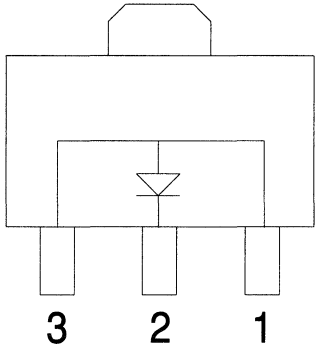
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_R	V_R=40V		1.0	mA
I_R	V_R=40V, T_A=100°C		10	mA
V_F	I_F=1.0A		0.55	V

All dimemsions in inches (mm).

BOTTOM VIEW





LEAD CODE:

1) ANODE
2) CATHODE
3) ANODE

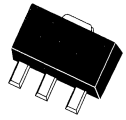
PIN 2 IS COMMON TO THE TAB.

DATA SHEET

R1

CXT2222A

NPN SILICON TRANSISTOR



SOT-89 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CXT2222A type is an NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for small signal general purpose and switching applications.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	75	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	600	mA
Power Dissipation	P_D	1.2	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	104	°C/W

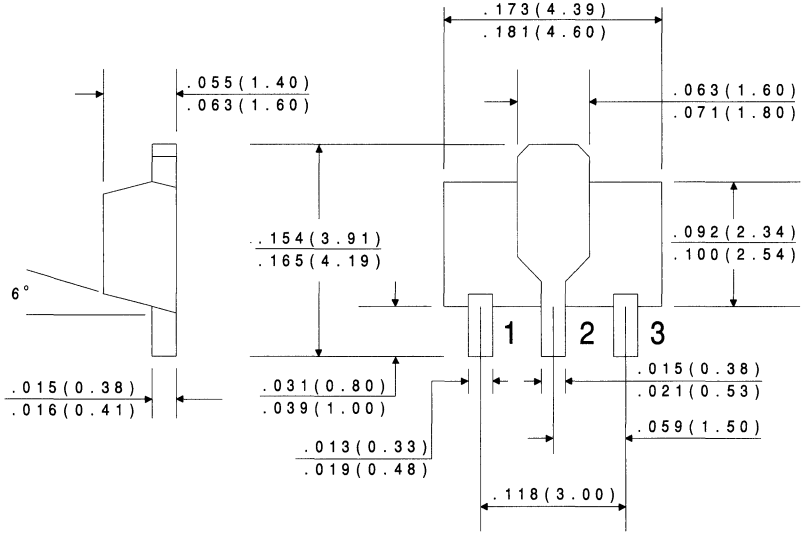
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=60V		10	nA
I_{CBO}	V_{CB}=60V, T_A=125°C		10	μA
I_{EBO}	V_{EB}=3.0V		10	nA
I_{CEV}	V_{CE}=60V, V_{EB}=3.0V		10	nA
BV_{CBO}	I_C=10μA	75		V
BV_{CEO}	I_C=10mA	40		V
BV_{EBO}	I_E=10μA	6.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.3	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		1.0	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA	0.6	1.2	V
$V_{BE(SAT)}$	I_C=500mA, I_B=50mA		2.0	V
h_{FE}	V_{CE}=10V, I_C=0.1mA	35		
h_{FE}	V_{CE}=10V, I_C=1.0mA	50		
h_{FE}	V_{CE}=10V, I_C=10mA	75		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=10V, I_C=150mA	100	300	
h_{FE}	V_{CE}=1.0V, I_C=150mA	50		
h_{FE}	V_{CE}=10V, I_C=500mA	40		
f_T	V_{CE}=20V, I_C=20mA, f=100MHz	300		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		8.0	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		25	pF
h_{ie}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	2.0	8.0	kΩ
h_{ie}	V_{CE}=10V, I_C=10mA, f=1.0kHz	0.25	1.25	kΩ
h_{re}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz		8.0	$x10^{-4}$
h_{re}	V_{CE}=10V, I_C=10mA, f=1.0kHz		4.0	$x10^{-4}$
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	50	300	
h_{fe}	V_{CE}=10V, I_C=10mA, f=1.0kHz	75	375	
h_{oe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	5.0	35	μmhos
h_{oe}	V_{CE}=10V, I_C=10mA, f=1.0kHz	25	200	μmhos
$rb'C_C$	V_{CB}=10V, I_E=20mA, f=31.8MHz		150	ps
NF	V_{CE}=10V, I_C=100μA, R_S=1.0kΩ, f=1.0kHz		4.0	dB
t_d	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		10	ns
t_r	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		25	ns
t_s	V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA		225	ns
t_f	V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA		60	ns

All dimensions in inches (mm).

BOTTOM VIEW



LEAD CODE:

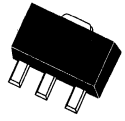
1) EMITTER
2) COLLECTOR
3) BASE

DATA SHEET

R1

CXT2907A

PNP SILICON TRANSISTOR



SOT-89 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CXT2907A type is an PNP silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for small signal general purpose and switching applications.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	600	mA
Power Dissipation	P_D	1.2	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	104	°C/W

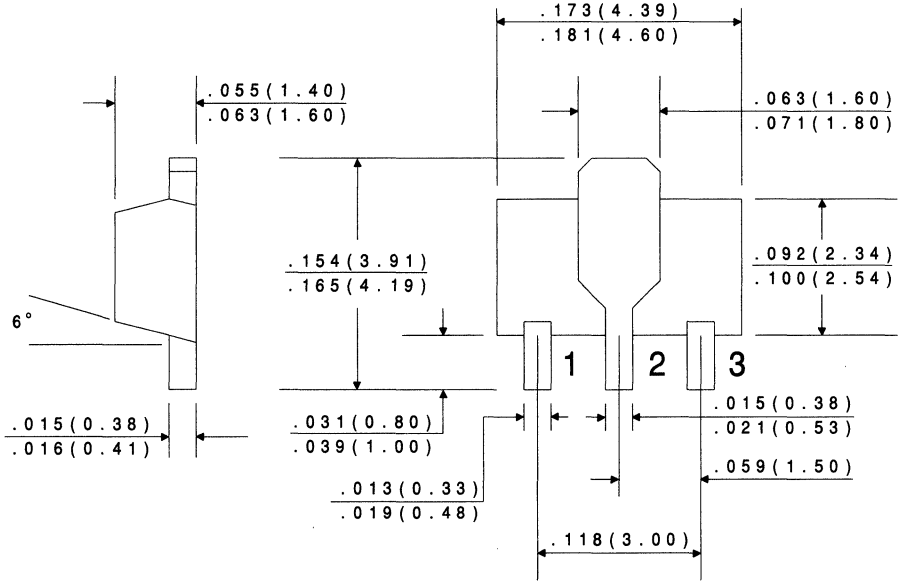
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=50V		10	nA
I_{CBO}	V_{CB}=50V, T_A=125°C		10	μA
I_{CEV}	V_{CE}=30V, V_{BE}=0.5V		50	nA
BV_{CBO}	I_C=10μA	60		V
BV_{CEO}	I_C=10mA	60		V
BV_{EBO}	I_E=10μA	5.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.4	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		1.6	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA		1.3	V
$V_{BE(SAT)}$	I_C=500mA, I_B=50mA		2.6	V
h_{FE}	V_{CE}=10V, I_C=0.1mA	75		
h_{FE}	V_{CE}=10V, I_C=1.0mA	100		
h_{FE}	V_{CE}=10V, I_C=10mA	100		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=10V, I_C=150mA	100	300	
h_{FE}	V_{CE}=10V, I_C=500mA	50		
f_T	V_{CE}=20V, I_C=50mA, f=100MHz	200		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		8.0	pF
C_{ib}	V_{BE}=2.0V, I_C=0, f=1.0MHz		30	pF
t_{on}	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		45	ns
t_d	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		10	ns
t_r	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		40	ns
t_{off}	V_{CC}=6.0V, I_C=150mA, I_{B1}=I_{B2}=15mA		100	ns
t_s	V_{CC}=6.0V, I_C=150mA, I_{B1}=I_{B2}=15mA		80	ns
t_f	V_{CC}=6.0V, I_C=150mA, I_{B1}=I_{B2}=15mA		30	ns

All dimensions in inches (mm).

BOTTOM VIEW



LEAD CODE:

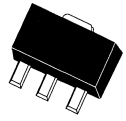
1) EMITTER
2) COLLECTOR
3) BASE

DATA SHEET

R1

CXT3019

NPN SILICON TRANSISTOR



SOT-89 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CXT3019 type is an NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for high current general purpose amplifier applications.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	140	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	7.0	V
Collector Current	I_C	1.0	A
Collector Current (Peak)	I_{CM}	1.5	A
Power Dissipation	PD	1.2	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	104	°C/W

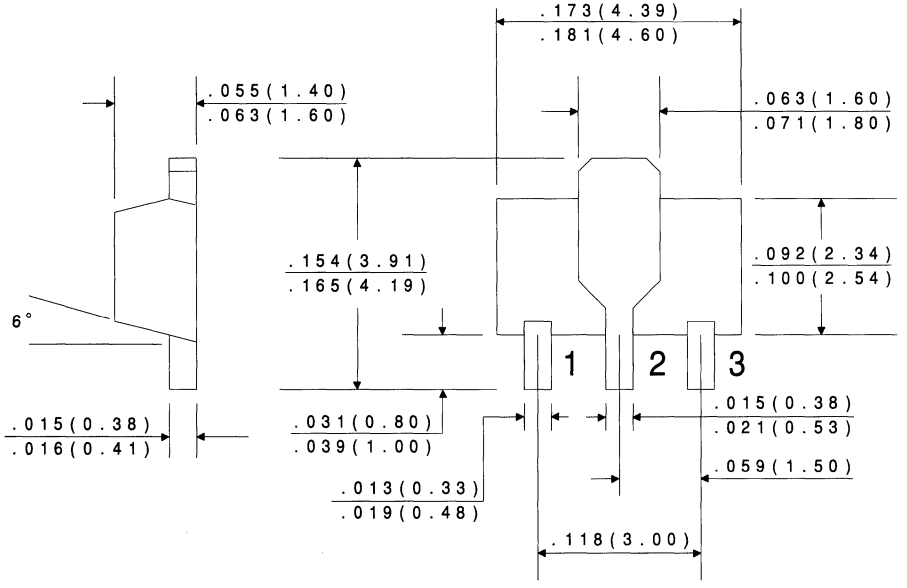
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=90V		10	nA
I_{EBO}	V_{EB}=5.0V		10	nA
BV_{CBO}	I_C=100μA	140		V
BV_{CEO}	I_C=30mA	80		V
BV_{EBO}	I_E=100μA	7.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.2	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		0.5	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA		1.1	V
h_{FE}	V_{CE}=10V, I_C=0.1mA	50		
h_{FE}	V_{CE}=10V, I_C=10mA	90		
h_{FE}	V_{CE}=10V, I_C=150mA	100	300	
h_{FE}	V_{CE}=10V, I_C=500mA	50		
h_{FE}	V_{CE}=10V, I_C=1.0A	15		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
f_T	V_{CE}=10V, I_C=50mA, f=1.0MHz	100		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		12	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		60	pF
NF	V_{CE}=10V, I_C=100μA, R_S=1kΩ, f=1.0kHz		4.0	dB

All dimensions in inches (mm).

BOTTOM VIEW



LEAD CODE:

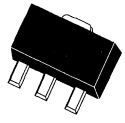
1) EMITTER
2) COLLECTOR
3) BASE

DATA SHEET

R1

CXT3904 NPN
CXT3906 PNP

COMPLEMENTARY SILICON TRANSISTORS



SOT-89 CASE

Central™ Semiconductor Corp.

DESCRIPTION

The CENTRAL SEMICONDUCTOR CXT3904, CXT3906 types are complementary silicon transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for small signal general purpose and switching applications.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL	CXT3904	CXT3906	UNITS
Collector-Base Voltage	V_{CBO}	60	40	V
Collector-Emitter Voltage	V_{CEO}	40	40	V
Emitter-Base Voltage	V_{EBO}	6.0	5.0	V
Collector Current	I_C	200		mA
Power Dissipation	P_D	1.2		W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150		°C
Thermal Resistance	Θ_{JA}	104		°C/W

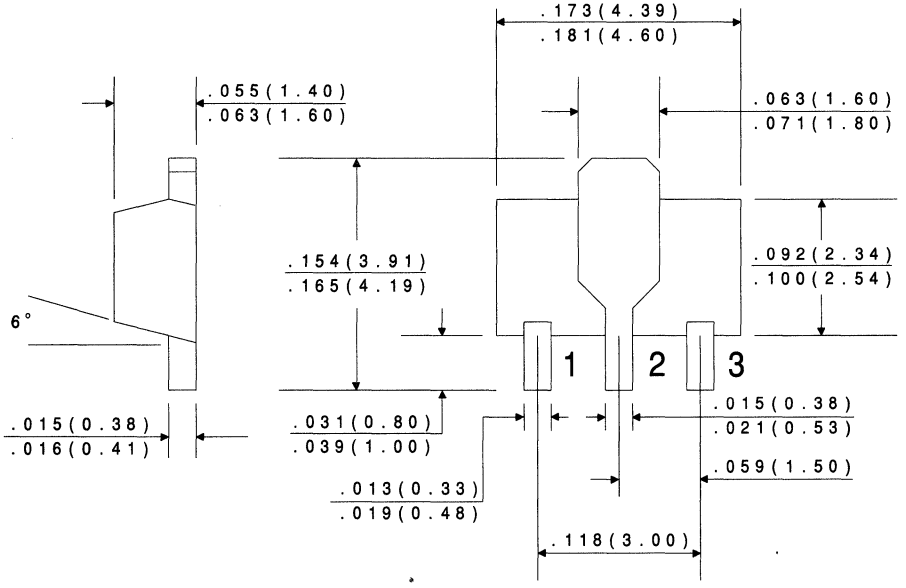
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

		CXT3904		CXT3906		
SYMBOL	TEST CONDITIONS	MIN	MAX	MIN	MAX	UNITS
I_{CEV}	V_{CE}=30V, V_{EB}=3.0V		50		50	nA
BV_{CBO}	I_C=10mA	60		40		V
BV_{CEO}	I_C=1.0mA	40		40		V
BV_{EBO}	I_E=10μA	6.0		5.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.20		0.25	V
$V_{CE(SAT)}$	I_C=50mA, I_B=5.0mA		0.30		0.40	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA	0.65	0.85	0.65	0.85	V
$V_{BE(SAT)}$	I_C=50mA, I_B=5.0mA		0.95		0.95	V
h_{FE}	V_{CE}=1.0V, I_C=0.1mA	40		60		
h_{FE}	V_{CE}=1.0V, I_C=1.0mA	70		80		
h_{FE}	V_{CE}=1.0V, I_C=10mA	100	300		100	300
h_{FE}	V_{CE}=1.0V, I_C=50mA	60		60		

SYMBOL	TEST CONDITIONS	CXT3904 MIN	CXT3904 MAX	CXT3906 MIN	CXT3906 MAX	UNITS
h_{FE}	V_{CE}=1.0V, I_C=100mA	30		30		
f_T	V_{CE}=20V, I_C=10mA, f=100MHz	300		250		MHz
C_{ob}	V_{CB}=5.0V, I_E=0, f=1.0MHz		4.0		4.5	pF
C_{ib}	V_{BE}=0.5V, I_C=0, f=1.0MHz		8.0		10	pF
h_{ie}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	1.0	10	2.0	12	kΩ
h_{re}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	0.5	8.0	0.1	10	$x10^{-4}$
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	100	400	100	400	
h_{oe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	1.0	40	3.0	60	mmhos
NF	V_{CE}=5.0V, I_C=100μA, R_S=1.0kΩ f=10Hz to 15.7kHz		5.0		4.0	dB
t_d	V_{CC}=3.0V, V_{BE}=0.5, I_C=10mA, I_{B1}=1.0mA		35		35	ns
t_r	V_{CC}=3.0V, V_{BE}=0.5, I_C=10mA, I_{B1}=1.0mA		35		35	ns
t_s	V_{CC}=3.0V, I_C=10mA, I_{B1}=I_{B2}=1.0mA		200		225	ns
t_f	V_{CC}=3.0V, I_C=10mA, I_{B1}=I_{B2}=1.0mA		50		75	ns

All dimensions in inches (mm).

BOTTOM VIEW



LEAD CODE:

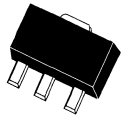
1) EMITTER
2) COLLECTOR
3) BASE

R1

DATA SHEET

CXT4033

PNP SILICON TRANSISTOR



SOT-89 CASE

Central™
Semiconductor Corp.

DESCRIPTION

The CENTRAL SEMICONDUCTOR CXT4033 type is an PNP silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for high current general purpose amplifier applications.

MAXIMUM RATINGS (TA=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	1.0	A
Collector Current (Peak)	I_{CM}	1.5	A
Power Dissipation	P_D	1.2	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	104	°C/W

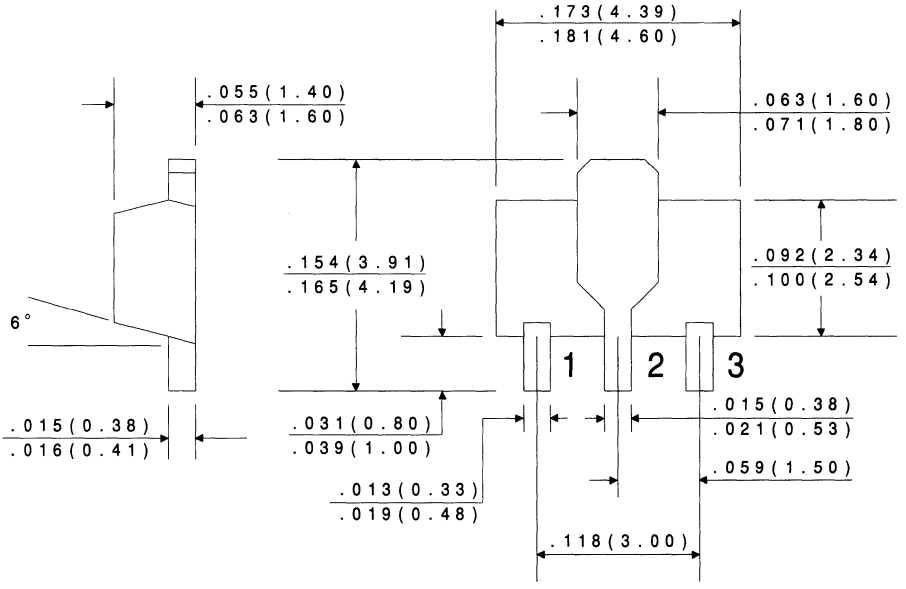
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=60V		50	nA
I_{EBO}	V_{EB}=5.0V		10	nA
BV_{CBO}	I_C=10μA	80		V
BV_{CEO}	I_C=10mA	80		V
BV_{EBO}	I_E=10μA	5.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.15	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		0.50	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA		0.90	V
$V_{BE(SAT)}$	I_C=500mA, I_B=50mA		1.10	V
h_{FE}	V_{CE}=5.0V, I_C=0.1mA	75		
h_{FE}	VCE=5.0V, I_C=100mA	100	300	
h_{FE}	V_{CE}=5.0V, I_C=500mA	70		
h_{FE}	V_{CE}=5.0V, I_C=1.0A	25		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
f_T	V_{CE}=10V, I_C=50mA, f=1.0MHz	100		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		20	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		110	pF

All dimensions in inches (mm).

BOTTOM VIEW



DATA SHEET

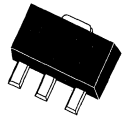
LEAD CODE:

1) EMITTER
2) COLLECTOR
3) BASE

R1

CXT5401

PNP SILICON TRANSISTOR



SOT-89 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CXT5401 type is an PNP silicon transistor manufactured bythe epitaxial planar process, epoxy molded in a surface mount package, designed for high voltage amplifier applications.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	160	V
Collector-Emitter Voltage	V_{CEO}	150	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	500	mA
Power Dissipation	P_D	1.2	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	104	°C/W

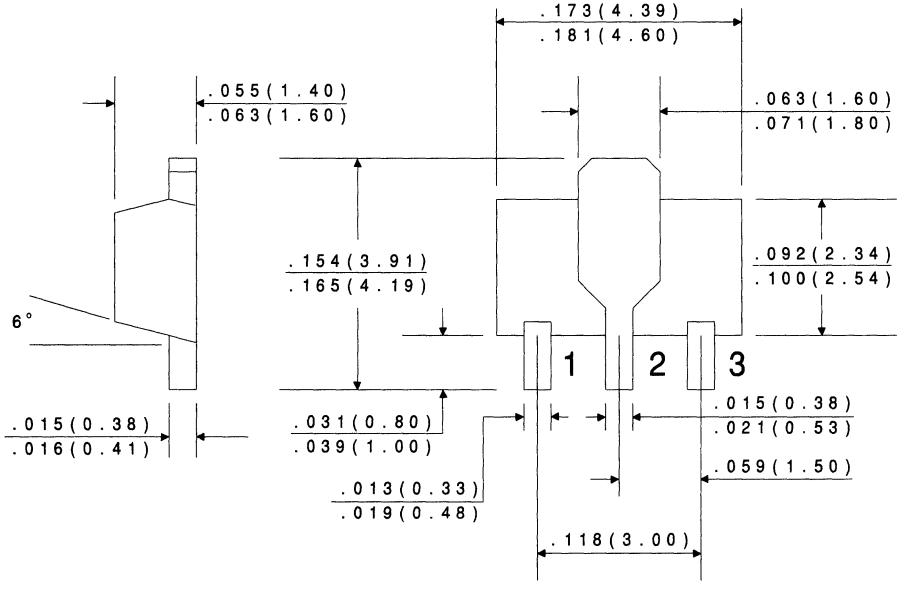
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=120V		50	nA
I_{CBO}	V_{CB}=120V, T_A=100°C		50	μA
BV_{CBO}	I_C=100μA	160		V
BV_{CEO}	I_C=1.0mA	150		V
BV_{EBO}	I_E=10μA	5.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.2	V
$V_{CE(SAT)}$	I_C=50mA, I_B=5.0mA		0.5	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA		1.0	V
$V_{BE(SAT)}$	I_C=50mA, I_B=5.0mA		1.0	V
h_{FE}	V_{CE}=5.0V, I_C=1.0mA	50		
h_{FE}	V_{CE}=5.0V, I_C=10mA	60	240	
h_{FE}	V_{CE}=5.0V, I_C=50mA	50		
f_T	V_{CE}=10V, I_C=10mA, f=100MHz	100	300	MHz

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		6.0	pF
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	40	200	
NF	V_{CE}=5.0V, I_C=200μA, R_S=10Ω			
	f=10Hz to 15.7kHz		8.0	dB

All dimensions in inches (mm).

BOTTOM VIEW



LEAD CODE:

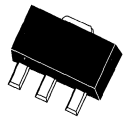
1) EMITTER
2) COLLECTOR
3) BASE

DATA SHEET

R1

CXT5551

NPN SILICON TRANSISTOR



SOT-89 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CXT5551 type is an NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for high voltage amplifier applications.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	180	V
Collector-Emitter Voltage	V_{CEO}	160	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	600	mA
Power Dissipation	P_D	1.2	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	104	°C/W

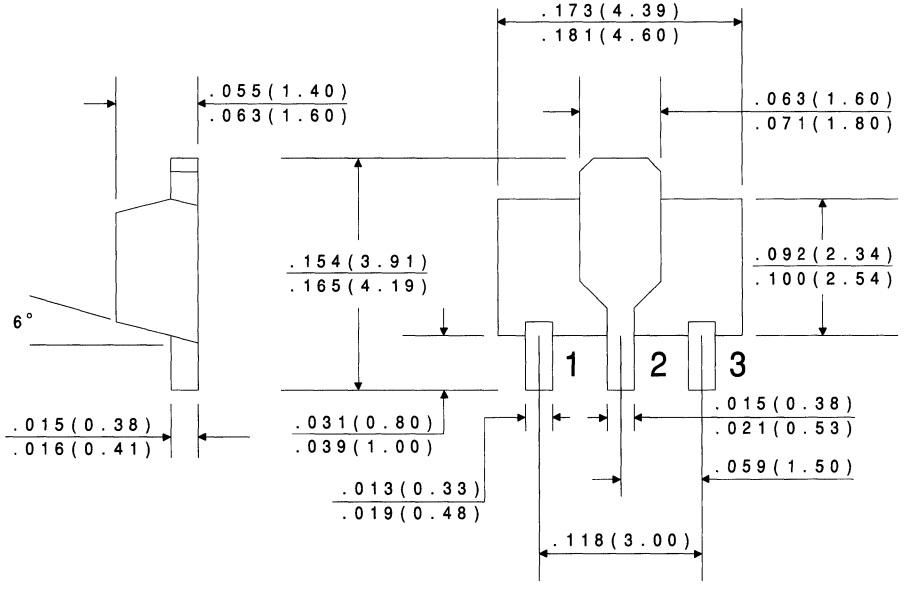
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=120V		50	nA
I_{CBO}	V_{CB}=120V, T_A=100°C		50	μA
BV_{CBO}	I_C=100mA	180		V
BV_{CEO}	I_C=1.0mA	160		V
BV_{EBO}	I_E=10mA	6.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.15	V
$V_{CE(SAT)}$	I_C=50mA, I_B=5.0mA		0.20	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA		1.00	V
$V_{BE(SAT)}$	I_C=50mA, I_B=5.0mA		1.00	V
h_{FE}	V_{CE}=5.0V, I_C=1.0mA	80		
h_{FE}	V_{CE}=5.0V, I_C=10mA	80	250	
h_{FE}	V_{CE}=5.0V, I_C=50mA	30		
f_T	V_{CE}=10V, I_C=10mA, f=100MHz	100	300	MHz

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		6.0	pF
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	50	200	
NF	V_{CE}=5.0V, I_C=200mA, R_S=10W f=10Hz to 15.7kHz		8.0	dB

All dimensions in inches (mm).

BOTTOM VIEW



LEAD CODE:

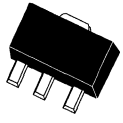
1) EMITTER
2) BASE
3) COLLECTOR

DATA SHEET

R1

CXTA14 NPN
CXTA64 PNP

SILICON COMPLEMENTARY DARLINGTON TRANSISTORS



SOT-89 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CXTA14, CXTA64 types are complementary silicon Darlington transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for applications requiring extremely high gain.

MAXIMUM RATINGS (T_A=25°C)

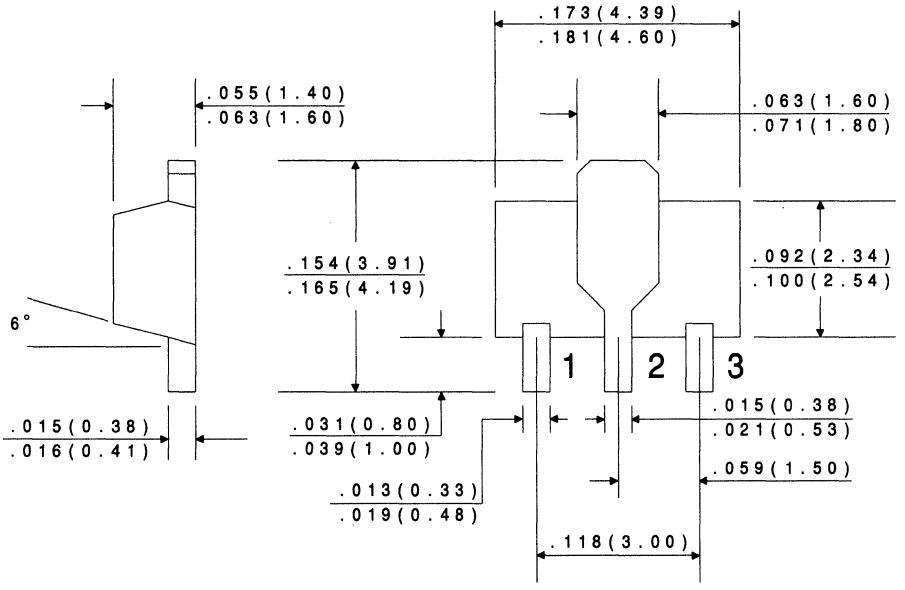
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	30	V
Collector-Emitter Voltage	V_{CEO}	30	V
Emitter-Base Voltage	V_{EBO}	10	V
Collector Current	I_C	500	mA
Power Dissipation	P_D	1.2	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	104	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=30V		100	nA
I_{CEO}	V_{CE}=10V		100	nA
BV_{CES}	I_C=100μA	30		V
$V_{CE(SAT)}$	I_C=100mA, I_B=0.1mA		1.5	V
$V_{BE(ON)}$	V_{CE}=5.0V, I_C=100mA		2.0	V
h_{FE}	V_{CE}=5.0V, I_C=10mA	10,000		
h_{FE}	V_{CE}=5.0V, I_C=100mA	20,000		
f_T	V_{CE}=5.0V, I_C=10mA, f=100MHz	125		MHz

All dimensions in inches (mm).

BOTTOM VIEW



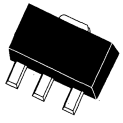
LEAD CODE:

1) EMITTER
2) COLLECTOR
3) BASE

R1

CXTA42 NPN
CXTA92 PNP

SILICON COMPLIMENTARY HIGH VOLTAGE TRANSISTOR



SOT-89 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CXTA42, CXTA92 types are complementary surface mount epoxy molded silicon planar epitaxial transistors designed for high voltage applications.

MAXIMUM RATINGS (T_A=25°C)

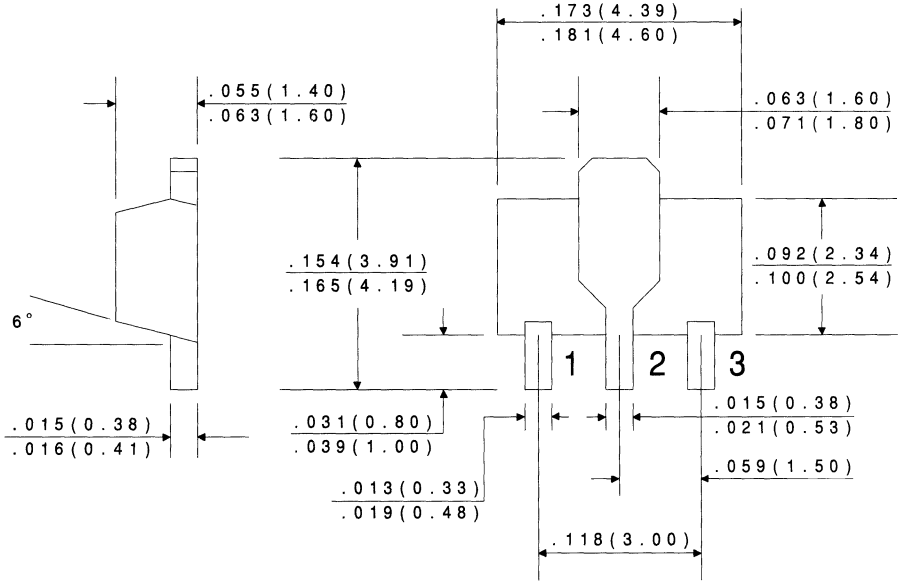
	SYMBOL	CXTA42	CXTA92	UNITS
Collector-Base Voltage	V_{CBO}	300	300	V
Collector-Emitter Voltage	V_{CEO}	300	300	V
Emitter-Base Voltage	V_{EBO}	6.0	5.0	V
Collector Current	I_C	500		mA
Power Dissipation	P_D	1.2		W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150		°C
Thermal Resistance	Θ_{JA}	104		°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

		CXTA42		CXTA92		
SYMBOL	TEST CONDITIONS	MIN	MAX	MIN	MAX	UNITS
I_{CBO}	V_{CB}=200V		100		250	nA
I_{EBO}	V_{BE}=6.0V		100		-	nA
I_{EBO}	V_{BE}=3.0V		-		100	nA
BV_{CBO}	I_C=100μA	300		300		V
BV_{CEO}	I_C=1.0mA	300		300		V
BV_{EBO}	I_E=100μA	6.0		5.0		V
$V_{CE(SAT)}$	I_C=20mA, I_B=2.0mA		0.5		0.5	V
$V_{BE(SAT)}$	I_C=20mA, I_B=2.0mA		0.9		0.9	V
h_{FE}	V_{CE}=10V, I_C=1.0mA	25		25		
h_{FE}	V_{CE}=10V, I_C=10mA	40		40		
h_{FE}	V_{CE}=10V, I_C=30mA	40		25		
f_T	V_{CE}=20V, I_C=10mA, f=100MHz	50		50		MHz
C_{ob}	V_{CB}=20V, I_E=0, f=1.0MHz		3.0		6.0	pF

All dimensions in inches (mm).

BOTTOM VIEW



LEAD CODE:

1) EMITTER
2) COLLECTOR
3) BASE

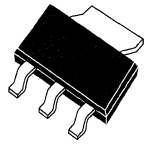
DATA SHEET

R1

NEW

CZS5064

SILICON CONTROLLED RECTIFIER



SOT-223 CASE

Central™
Semiconductor Corp.

DESCRIPTION

The CENTRAL SEMICONDUCTOR CZS5064 type is an epoxy molded PNPN Silicon Controlled Rectifier manufactured in an epoxy molded surface mount package, designed for control systems and sensing circuit applications.

MAXIMUM RATINGS (T_A=25°C unless otherwise noted)

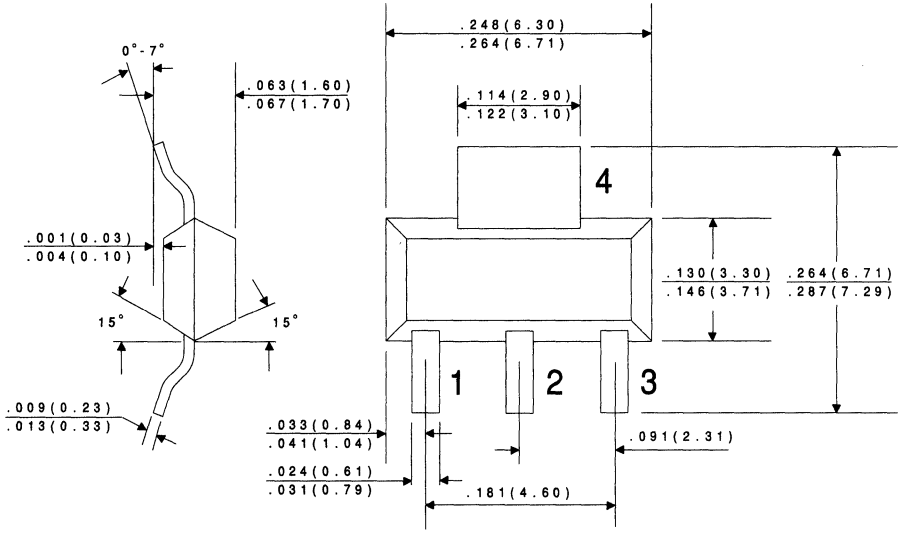
	SYMBOL		UNITS
Peak Repetitive Off-State Voltage	V_{DRM}	400	V
Peak Repetitive Reverse Voltage	V_{RRM}	400	V
RMS On-State Current	$I_{T(RMS)}$	0.8	A
Average On-State Current (T_C=67°C)	$I_{T(AV)}$	0.51	A
Operating Junction Temperature	T_J	-40 to +125	°C
Storage Temperature	T_{stg}	-40 to +150	°C
Thermal Resistance	Θ_{JA}	150	°C/W
Thermal Resistance	Θ_{JC}	25	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{DRM}	V_D=400V, R_{GK}=1KΩ, T_C=125°C		50	μA
I_{RRM}	V_D=400V, R_{GK}=1KΩ, T_C=125°C		50	μA
V_T	I_T=1.2A		1.7	V
I_{GT}	V_D=7.0V, R_L=100Ω, R_{GK}=1KΩ		200	μA
V_{GT}	V_D=7.0V, R_L=100Ω, R_{GK}=1KΩ		0.8	V
V_{GD}	V_D=400V, R_L=100Ω, T_C=125°C	0.1		V
I_H	V_D=7.0, R_{GK}=1KΩ		5.0	mA
t_{ON}	V_D=400V, I_{GT}=1.0mA, I_F=1.0A, R_{GK}=1.0Ω, di/dt=6.0A/μs	2.8 TYP		μs

All dimensions in inches (mm).

TOP VIEW



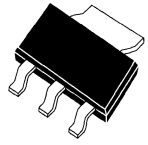
LEAD CODE:

1) CATHODE
2) ANODE
3) GATE
4) ANODE

DATA SHEET

CZSH-4

SCHOTTKY BARRIER RECTIFIER



SOT-223 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZSH-4 type is a schottky barrier rectifier mounted in an epoxy molded case using a metal to silicon junction to yield low forward voltage drop. This device utilizes a single chip with anode connections made to PIN 1 and PIN 3.

MAXIMUM RATINGS (T_A=25°C)

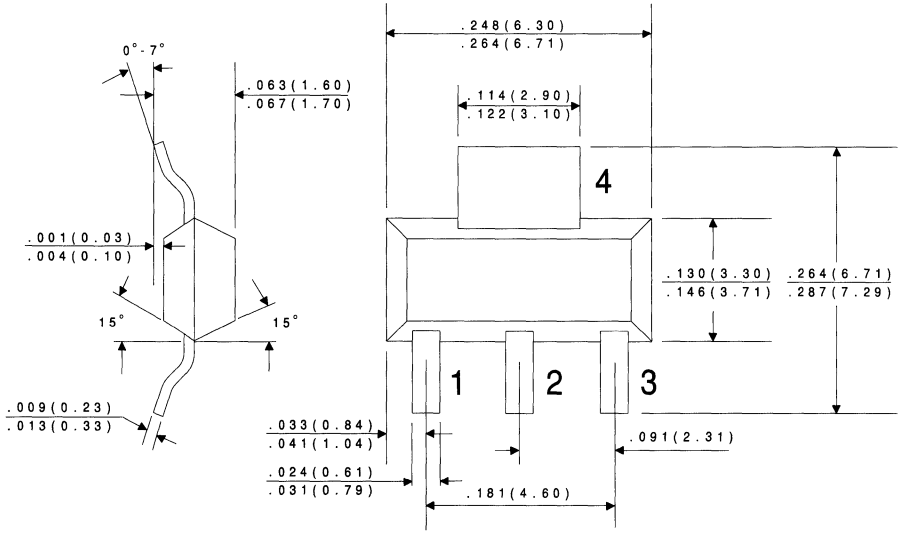
	SYMBOL		UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	40	V
DC Blocking Voltage	V_R	40	V
RMS Reverse Voltage	$V_{R(RMS)}$	28	V
Average Forward Current	I_O	2.0	A
Peak Forward Surge Current (8.3ms, Non-Rep.)	I_{FSM}	10	A
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C

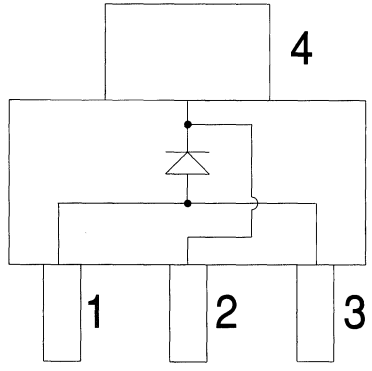
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_R	V_R=40V		1.0	mA
I_R	V_R=40V, T_A=100°C		10	mA
V_F	I_F=1.0A		0.50	V
V_F	I_F=2.0A		0.60	V

All dimensions in inches (mm).

TOP VIEW





LEAD CODE:

1) ANODE
2) CATHODE
3) ANODE
4) CATHODE

DATA SHEET

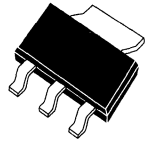
R1

NEW

CZT31C NPN
CZT32C PNP

2.0W COMPLEMENTARY SILICON POWER TRANSISTOR

POWER 223™



SOT-223 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZT31C and CZT32C types are surface mount epoxy molded complementary silicon transistors manufactured by the epitaxial base process, designed for surface mounted power amplifier applications up to 3.0 amps.

MAXIMUM RATINGS: (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CEO}	100	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	3.0	A
Peak Collector Current	I_{CM}	6.0	A
Base Current	I_B	1.0	A
Power Dissipation	P_D	2.0	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	62.5	°C/W

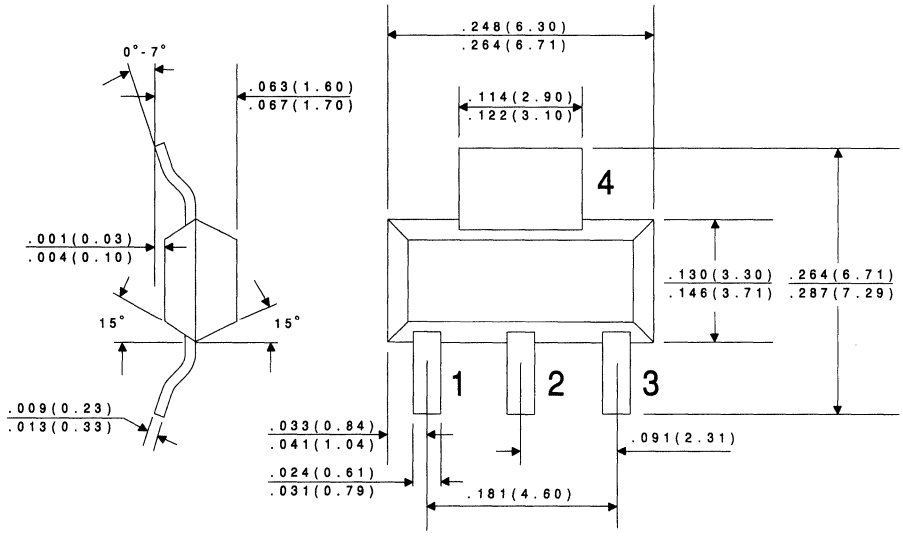
ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CES}	V_{CE}=100V		200	μA
I_{CEO}	V_{CE}=60V		300	μA
I_{EBO}	V_{EB}=5.0V		1.0	mA
BV_{CEO}	I_C=30mA	100		V
* $V_{CE(SAT)}$	I_C=3.0A, I_B=375mA		1.2	V
* $V_{BE(ON)}$	V_{CE}=4.0V, I_C=3.0A		1.8	V
* h_{FE}	V_{CE}=4.0V, I_C=1.0A	25		
* h_{FE}	V_{CE}=4.0V, I_C=3.0A	10	100	
f_T	V_{CE}=10V, I_C=500mA, f=1.0MHz	3.0		MHz

* Pulsed, 2%D.C.

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

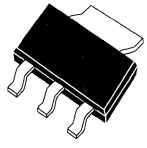
DATA SHEET

NEW

CZT122 NPN
CZT127 PNP

COMPLEMENTARY SILICON POWER DARLINGTON TRANSISTOR

POWER 223™



SOT-223 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZT122, CZT127 types are Complementary Silicon Power Darlington Transistors manufactured in a surface mount package designed for low speed switching and amplifier applications.

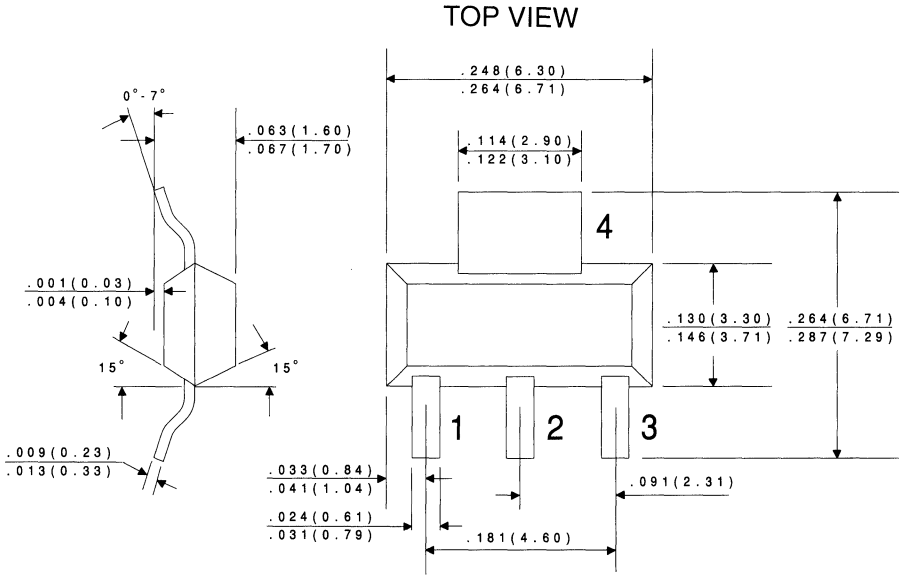
MAXIMUM RATINGS: (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CEO}	100	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	5.0	A
Peak Collector Current	I_{CM}	8.0	A
Base Current	I_B	120	mA
Power Dissipation	P_D	2.0	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	62.5	°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CEO}	V_{CE}=50V		500	μA
I_{CBO}	V_{CB}=100V		200	μA
I_{EBO}	V_{EB}=5.0V		2.0	mA
BV_{CEO}	I_C=30mA	100		V
$V_{CE(SAT)}$	I_C=3.0A, I_B=12mA		2.0	V
$V_{CE(SAT)}$	I_C=5.0A, I_B=20mA		4.0	V
$V_{BE(ON)}$	V_{CE}=3.0V, I_C=3.0A		2.5	V
h_{FE}	V_{CE}=3.0V, I_C=500mA	1000		
h_{FE}	V_{CE}=3.0V, I_C=3.0A	1000		
f_T	V_{CE}=4.0V, I_C=3.0A, f=1.0MHz	4.0		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz (CZT122)		200	pF
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz (CZT127)		300	pF

All dimensions in inches (mm).



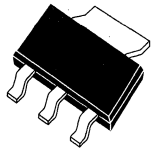
LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

DATA SHEET

CZT2000

NPN SILICON
EXTREMELY HIGH VOLTAGE
DARLINGTON TRANSISTOR



SOT-223 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZT2000 type is an NPN Epitaxial Planar Silicon Darlington Transistor manufactured in an epoxy molded surface mount package, designed for applications requiring extremely high voltages and high gain capability.

MAXIMUM RATINGS (T_A=25°C)

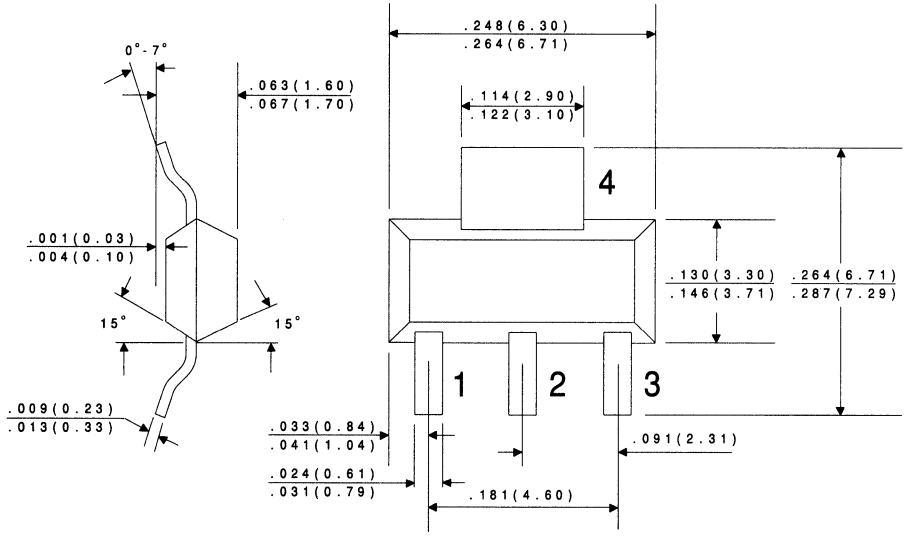
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	200	V
Collector-Emitter Voltage	V_{CES}	200	V
Emitter-Base Voltage	V_{EBO}	10	V
Collector Current	I_C	600	mA
Power Dissipation	P_D	2.0	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	62.5	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=180V		500	nA
I_{EBO}	V_{BE}=10V		100	nA
BV_{CES}	I_C=1.0mA	200		V
$V_{CE(SAT)}$	I_C=20mA, I_B=25μA		0.9	V
$V_{CE(SAT)}$	I_C=80mA, I_B=40μA		1.1	V
$V_{CE(SAT)}$	I_C=160mA, I_B=100μA		1.2	V
$V_{BE(ON)}$	V_{CE}=5.0V, I_C=160mA		2.0	V
h_{FE}	V_{CE}=5.0V, I_C=100μA	3,000		
h_{FE}	V_{CE}=5.0V, I_C=10mA	3,000		
h_{FE}	V_{CE}=5.0V, I_C=160mA	3,000		

All dimensions in inches (mm).

TOP VIEW

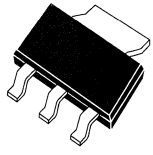


LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

CZT2222A

NPN SILICON TRANSISTOR



SOT-223 CASE

Central™
Semiconductor Corp.

DESCRIPTION

The CENTRAL SEMICONDUCTOR CZT2222A type is an NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for general purpose amplifier and switching applications.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	75	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	600	mA
Power Dissipation	P_D	2.0	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	62.5	°C/W

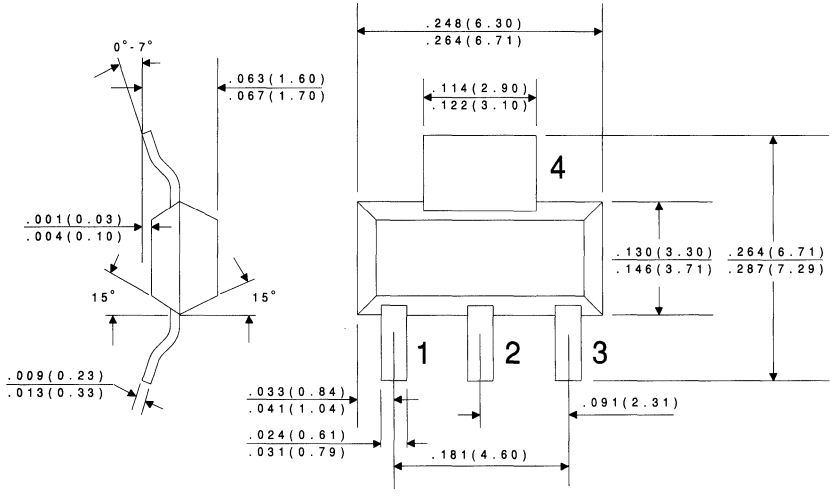
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=60V		10	nA
I_{CBO}	V_{CB}=60V, T_A=125°C		10	μA
I_{EBO}	V_{EB}=3.0V		10	nA
I_{CEV}	V_{CE}=60V, V_{EB}=3.0V		10	nA
BV_{CBO}	I_C=10μA	75		V
BV_{CEO}	I_C=10mA	40		V
BV_{EBO}	I_E=10μA	6.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.3	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		1.0	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA	0.6	1.2	V
$V_{BE(SAT)}$	I_C=500mA, I_B=50mA		2.0	V
h_{FE}	V_{CE}=10V, I_C=0.1mA	35		
h_{FE}	V_{CE}=10V, I_C=1.0mA	50		
h_{FE}	V_{CE}=10V, I_C=10mA	75		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=10V, I_C=150mA	100	300	
h_{FE}	V_{CE}=1.0V, I_C=150mA	50		
h_{FE}	V_{CE}=10V, I_C=500mA	40		
f_T	V_{CE}=20V, I_C=20mA, f=100MHz	300		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		8.0	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		25	pF
h_{ie}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	2.0	8.0	kΩ
h_{ie}	V_{CE}=10V, I_C=10mA, f=1.0kHz	0.25	1.25	kΩ
h_{re}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz		8.0	$x10^{-4}$
h_{re}	V_{CE}=10V, I_C=10mA, f=1.0kHz		4.0	$x10^{-4}$
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	50	300	
h_{fe}	V_{CE}=10V, I_C=10mA, f=1.0kHz	75	375	
h_{oe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	5.0	35	μmhos
h_{oe}	V_{CE}=10V, I_C=10mA, f=1.0kHz	25	200	μmhos
$rb'C_C$	V_{CB}=10V, I_E=20mA, f=31.8MHz		150	ps
NF	V_{CE}=10V, I_C=100μA, R_S=1.0kΩ, f=1.0kHz		4.0	dB
t_d	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		10	ns
t_r	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		25	ns
t_s	V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA		225	ns
t_f	V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA		60	ns

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

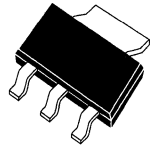
1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

DATA SHEET

R1

CZT2907A

PNP SILICON TRANSISTOR



SOT-223 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZT2907A type is an PNP silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for general purpose amplifier and switching applications.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	600	mA
Power Dissipation	P_D	2.0	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	62.5	°C/W

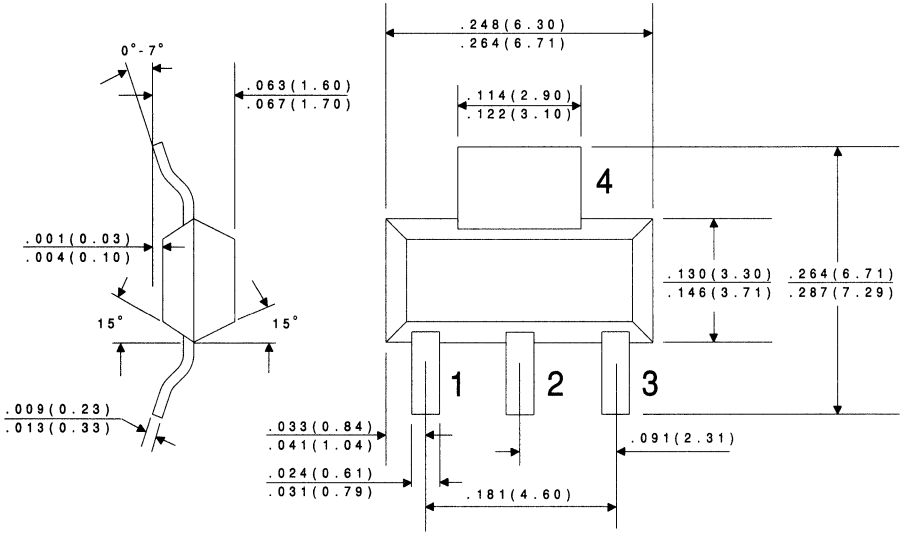
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=50V		10	nA
I_{CBO}	V_{CB}=50V, T_A=125°C		10	μA
I_{CEV}	V_{CE}=30V, V_{BE}=0.5V		50	nA
BV_{CBO}	I_C=10μA	60		V
BV_{CEO}	I_C=10mA	60		V
BV_{EBO}	I_E=10μA	5.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.4	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		1.6	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA		1.3	V
$V_{BE(SAT)}$	I_C=500mA, I_B=50mA		2.6	V
h_{FE}	V_{CE}=10V, I_C=0.1mA	75		
h_{FE}	V_{CE}=10V, I_C=1.0mA	100		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=10V, I_C=10mA	100		
h_{FE}	V_{CE}=10V, I_C=150mA	100	300	
h_{FE}	V_{CE}=10V, I_C=500mA	50		
f_T	V_{CE}=20V, I_C=50mA, f=100MHz	200		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		8.0	pF
C_{ib}	V_{BE}=2.0V, I_C=0, f=1.0MHz		30	pF
t_{on}	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		45	ns
t_d	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		10	ns
t_r	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		40	ns
t_{off}	V_{CC}=6.0V, I_C=150mA, I_{B1}=I_{B2}=15mA		100	ns
t_s	V_{CC}=6.0V, I_C=150mA, I_{B1}=I_{B2}=15mA		80	ns
t_f	V_{CC}=6.0V, I_C=150mA, I_{B1}=I_{B2}=15mA		30	ns

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

DATA SHEET

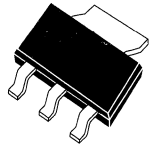
R1

NEW

CZT2955 PNP
CZT3055 NPN

2.0W SURFACE MOUNT COMPLEMENTARY SILICON POWER TRANSISTOR

POWER 223™



SOT-223 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZT2955 and CZT3055 types are surface mount epoxy molded complementary silicon transistors manufactured by the epitaxial base process, designed for surface mounted power amplifier applications up to 6.0 amps.

MAXIMUM RATINGS: (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CER}	70	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	7.0	V
Collector Current	I_C	6.0	A
Base Current	I_B	3.0	A
Power Dissipation	P_D	2.0	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	62.5	°C/W

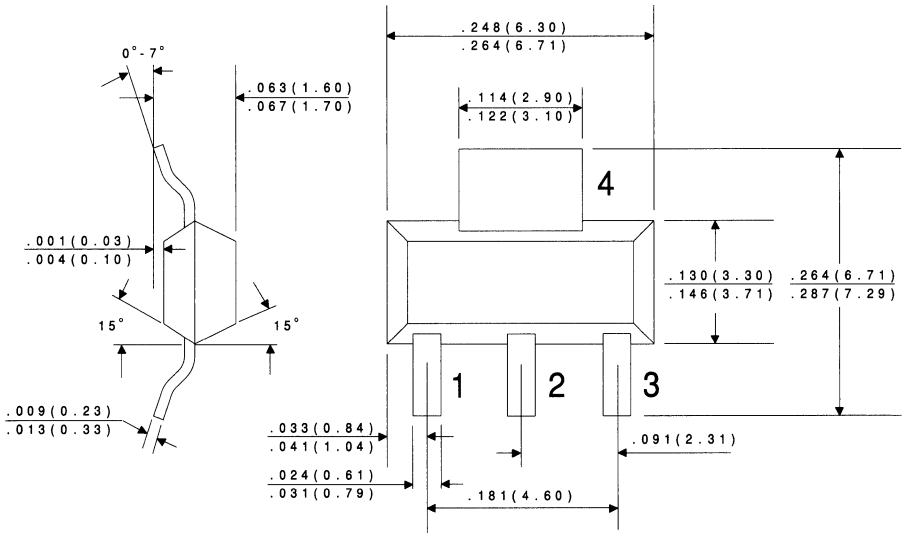
ELECTRICAL CHARACTERISTICS: (T_A=25°C)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CEO}	V_{CE}=30V		700	μA
I_{CEV}	V_{CE}=100V, $V_{EB(off)}$=1.5V		1.0	mA
I_{EBO}	V_{EB}=7.0V		5.0	mA
BV_{CER}	I_C=30mA, R_{BE}=100Ω	70		V
BV_{CEO}	I_C=30mA	60		V
* $V_{CE(SAT)}$	I_C=4.0A, I_B=400mA		1.1	V
* $V_{BE(ON)}$	V_{CE}=4.0V, I_C=4.0A		1.5	V
* h_{FE}	V_{CE}=4.0V, I_C=4.0A	20	70	
* h_{FE}	V_{CE}=4.0V, I_C=6.0A	5.0		
f_T	V_{CE}=10V, I_C=500mA, f=1.0MHz	2.5		MHz

* Pulsed, 2% D.C.

All dimensions in inches (mm).

TOP VIEW



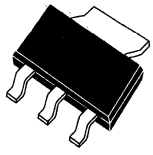
LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

DATA SHEET

CZT3019

NPN SILICON TRANSISTOR



SOT-223 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZT3019 type is an NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for high current general purpose amplifier applications.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	120	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	7.0	V
Collector Current	I_C	1.0	A
Collector Current (Peak)	I_{CM}	1.5	A
Power Dissipation	P_D	2.0	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	62.5	°C/W

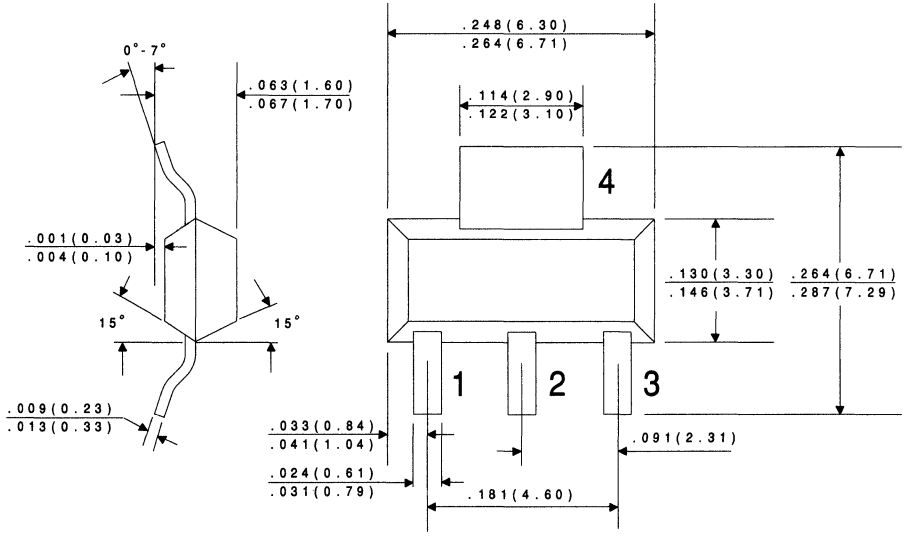
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=90V		10	nA
I_{EBO}	V_{EB}=5.0V		10	nA
BV_{CBO}	I_C=100μA	120		V
BV_{CEO}	I_C=30mA	80		V
BV_{EBO}	I_E=100μA	7.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.2	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		0.5	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA		1.1	V
h_{FE}	V_{CE}=10V, I_C=0.1mA	50		
h_{FE}	V_{CE}=10V, I_C=10mA	90		
h_{FE}	V_{CE}=10V, I_C=150mA	100	300	
h_{FE}	V_{CE}=10V, I_C=500mA	50		
h_{FE}	V_{CE}=10V, I_C=1.0A	15		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
f_T	V_{CE}=10V, I_C=50mA, f=1.0MHz	100		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		12	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		60	pF
NF	V_{CE}=10V, I_C=100μA, R_S=1kΩ, f=1.0kHz		4.0	dB

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

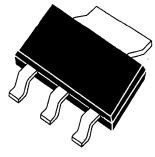
1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

DATA SHEET

R1

CZT3904 NPN
CZT3906 PNP

COMPLEMENTARY SILICON TRANSISTORS



SOT-223 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZT3904, CZT3906 types are complementary silicon transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for small signal general purpose and switching applications.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL	CZT3904	CZT3906	UNITS
Collector-Base Voltage	V_{CBO}	60	40	V
Collector-Emitter Voltage	V_{CEO}	40	40	V
Emitter-Base Voltage	V_{EBO}	6.0	5.0	V
Collector Current	I_C	200		mA
Power Dissipation	P_D	2.0		W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150		°C
Thermal Resistance	Θ_{JA}	62.5		°C/W

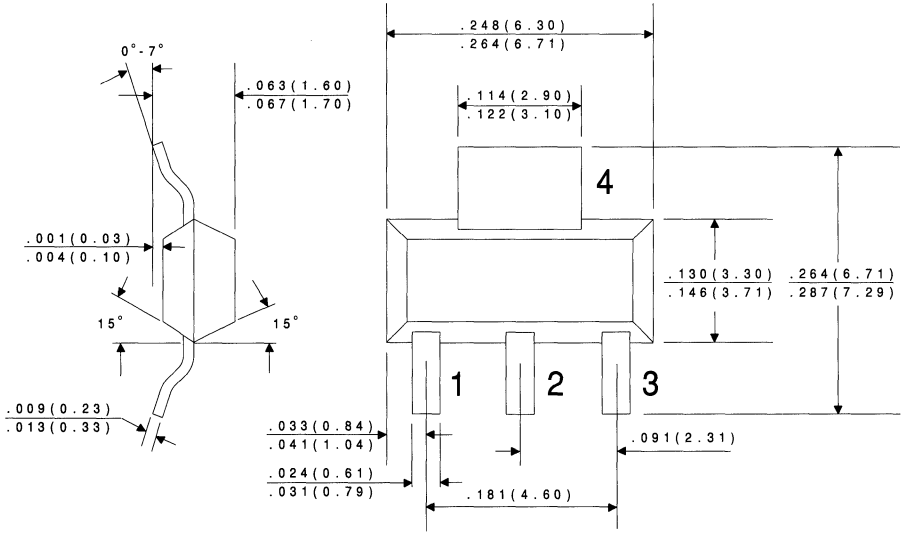
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

		CZT3904		CZT3906		
SYMBOL	TEST CONDITIONS	MIN	MAX	MIN	MAX	UNITS
I_{CEV}	V_{CE}=30V, V_{EB}=3.0V		50		50	nA
BV_{CBO}	I_C=10μA	60		40		V
BV_{CEO}	I_C=1.0mA	40		40		V
BV_{EBO}	I_E=10μA	6.0		5.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.20		0.25	V
$V_{CE(SAT)}$	I_C=50mA, I_B=5.0mA		0.30		0.40	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA	0.65	0.85	0.65	0.85	V
$V_{BE(SAT)}$	I_C=50mA, I_B=5.0mA		0.95		0.95	V
h_{FE}	V_{CE}=1.0V, I_C=0.1mA	40		60		
h_{FE}	V_{CE}=1.0V, I_C=1.0mA	70		80		
h_{FE}	V_{CE}=1.0V, I_C=10mA	100	300	100	300	
h_{FE}	V_{CE}=1.0V, I_C=50mA	60		60		
h_{FE}	V_{CE}=1.0V, I_C=100mA	30		30		

SYMBOL	TEST CONDITIONS	CZT3904 MIN	CZT3904 MAX	CZT3906 MIN	CZT3906 MAX	UNITS
f_T	V_{CE}=20V, I_C=10mA, f=100MHz		300	250		MHz
C_{ob}	V_{CB}=5.0V, I_E=0, f=1.0MHz		4.0		4.5	pF
C_{ib}	V_{BE}=0.5V, I_C=0, f=1.0MHz		8.0		10	pF
h_{ie}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	1.0	10	2.0	12	kΩ
h_{re}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	0.5	8.0	0.1	10	$x10^{-4}$
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	100	400	100	400	
h_{oe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	1.0	40	3.0	60	μmhos
NF	V_{CE}=5.0V, I_C=100μA, R_S=1.0kΩ f=10Hz to 15.7kHz		5.0		4.0	dB
t_d	V_{CC}=3.0V, V_{BE}=0.5, I_C=10mA, I_{B1}=1.0mA		35		35	ns
t_r	V_{CC}=3.0V, V_{BE}=0.5, I_C=10mA, I_{B1}=1.0mA		35		35	ns
t_s	V_{CC}=3.0V, I_C=10mA, I_{B1}=I_{B2}=1.0mA		200		225	ns
t_f	V_{CC}=3.0V, I_C=10mA, I_{B1}=I_{B2}=1.0mA		50		75	ns

All dimensions in inches (mm).

TOP VIEW



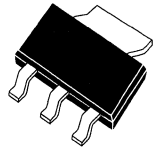
LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

R1

CZT4033

PNP SILICON TRANSISTOR



SOT-223 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZT4033 type is an PNP silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for high current general purpose amplifier applications.

MAXIMUM RATINGS (T_A=25°C)

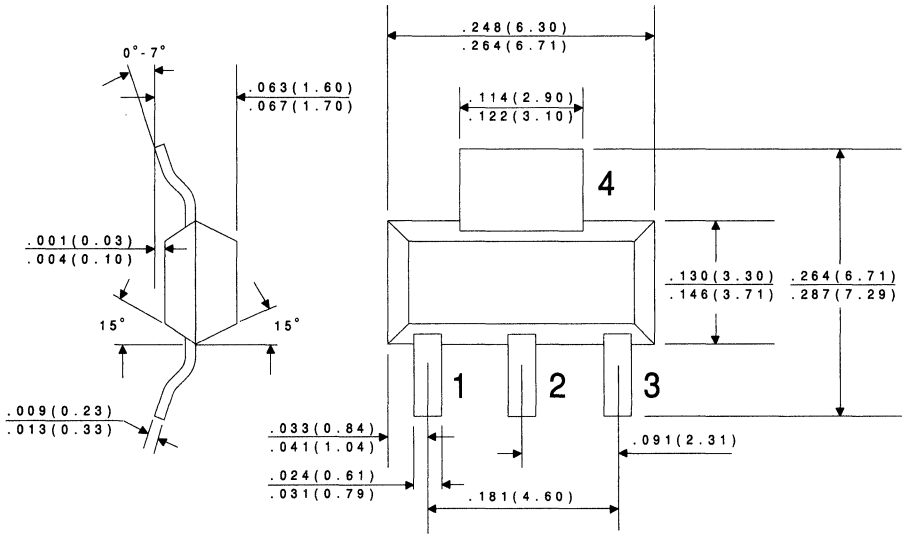
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	1.0	A
Collector Current (Peak)	I_{CM}	1.5	A
Power Dissipation	P_D	2.0	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	62.5	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=60V		50	nA
I_{EBO}	V_{EB}=5.0V		10	nA
BV_{CBO}	I_C=10μA	80		V
BV_{CEO}	I_C=10mA	80		V
BV_{EBO}	I_E=10μA	5.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.15	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		0.50	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA		0.90	V
$V_{BE(SAT)}$	I_C=500mA, I_B=50mA		1.10	V
h_{FE}	V_{CE}=5.0V, I_C=0.1mA	75		
h_{FE}	V_{CE}=5.0V, I_C=100mA	100	300	
h_{FE}	V_{CE}=5.0V, I_C=500mA	70		
h_{FE}	V_{CE}=5.0V, I_C=1.0A	25		
f_T	V_{CE}=10V, I_C=50mA, f=1.0MHz	100		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		20	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		110	pF

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

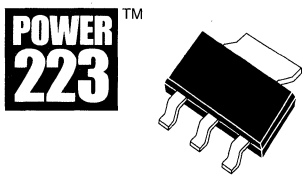
1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

DATA SHEET

R1

CZT5338

NPN SILICON
POWER TRANSISTOR



SOT-223 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZT5338 type is an NPN silicon power transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for applications requiring extremely high current amplification and switching capability.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CEO}	100	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	5.0	A
Base Current	I_B	1.0	A
Power Dissipation	P_D	2.0	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	62.5	°C/W

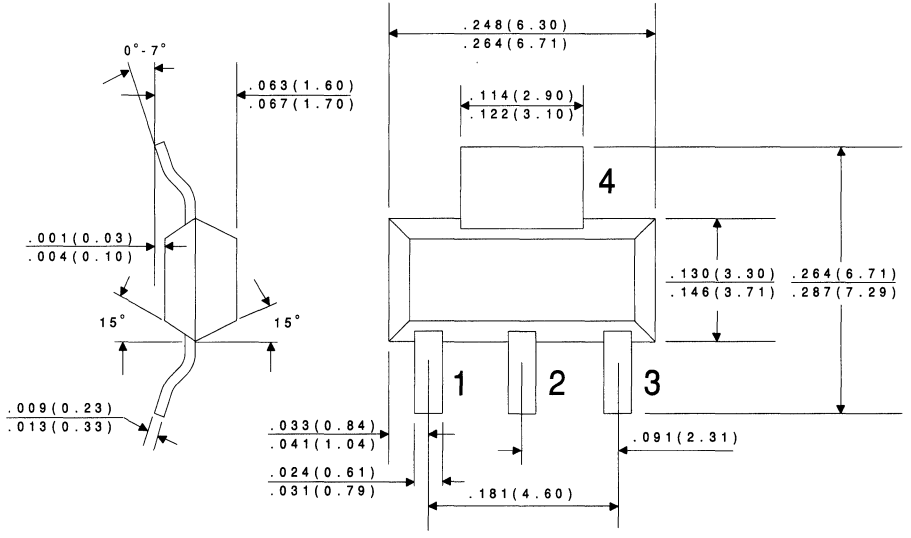
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=100V		10	μA
I_{EBO}	V_{BE}=6.0V		100	μA
I_{CEO}	V_{CE}=90V		100	μA
BV_{CEO}	I_C=50mA	100		V
$V_{CE(SAT)}$	I_C=2.0A, I_B=200mA		0.7	V
$V_{CE(SAT)}$	I_C=5.0A, I_B=500mA		1.2	V
$V_{BE(SAT)}$	I_C=2.0A, I_B=200mA		1.2	V
$V_{BE(SAT)}$	I_C=5.0A, I_B=500mA		1.8	V
h_{FE}	V_{CE}=2.0V, I_C=500mA	30		
h_{FE}	V_{CE}=2.0V, I_C=2.0A	30	120	
h_{FE}	V_{CE}=2.0V, I_C=5.0A	20		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
f_T	V_{CE}=10V, I_C=500mA, f=10MHz	30		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		250	pF
C_{ib}	V_{BE}=2.0V, I_C=0, f=1.0MHz		1000	pF
t_d	V_{CC}=40V, V_{BE}=3.0V, I_C=2.0A, I_{B1}=200mA		100	ns
t_r	V_{CC}=40V, V_{BE}=3.0V, I_C=2.0A, I_{B1}=200mA		100	ns
t_s	V_{CC}=40V, I_C=2.0A, I_{B1}=I_{B2}=200mA		2.0	µs
t_f	V_{CC}=40V, I_C=2.0A, I_{B1}=I_{B2}=200mA		200	ns

All dimensions in inches (mm).

TOP VIEW



DATA SHEET

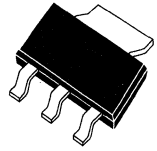
LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

R1

CZT5401

PNP SILICON TRANSISTOR



SOT-223 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZT5401 type is an PNP silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for high voltage amplifier applications.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	160	V
Collector-Emitter Voltage	V_{CEO}	150	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	600	mA
Power Dissipation	P_D	2.0	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	62.5	°C/W

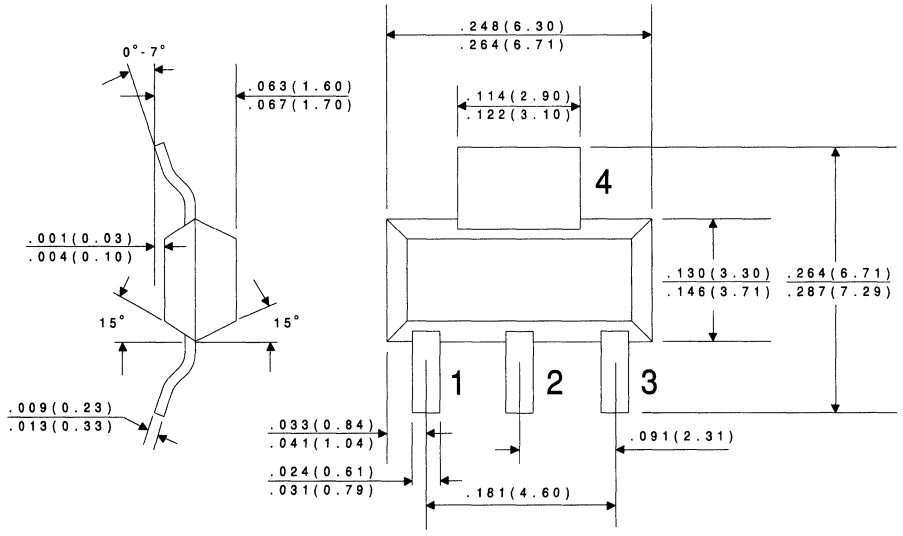
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=100V		50	nA
I_{CBO}	V_{CB}=100V, T_A=150°C		50	mA
I_{EBO}	V_{EB}=3.0V		50	nA
BV_{CBO}	I_C=100μA	160		V
BV_{CEO}	I_C=1.0mA	150		V
BV_{EBO}	I_E=10μA	5.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.2	V
$V_{CE(SAT)}$	I_C=50mA, I_B=5.0mA		0.5	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA		1.0	V
$V_{BE(SAT)}$	I_C=50mA, I_B=5.0mA		1.0	V
h_{FE}	V_{CE}=5.0V, I_C=1.0mA	50		
h_{FE}	V_{CE}=5.0V, I_C=10mA	60	240	
h_{FE}	V_{CE}=5.0V, I_C=50mA	50		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
f_T	V_{CE}=10V, I_C=10mA, f=100MHz	100	300	MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		6.0	pF
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	40	200	
NF	V_{CE}=5.0V, I_C=200μA, R_S=10Ω f=10Hz to 15.7kHz		8.0	dB

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

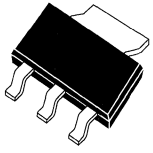
1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

DATA SHEET

R1

CZT5551

NPN SILICON TRANSISTOR



SOT-223 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZT5551 type is an NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for high voltage amplifier applications.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	180	V
Collector-Emitter Voltage	V_{CEO}	160	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	600	mA
Power Dissipation	P_D	2.0	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	62.5	°C/W

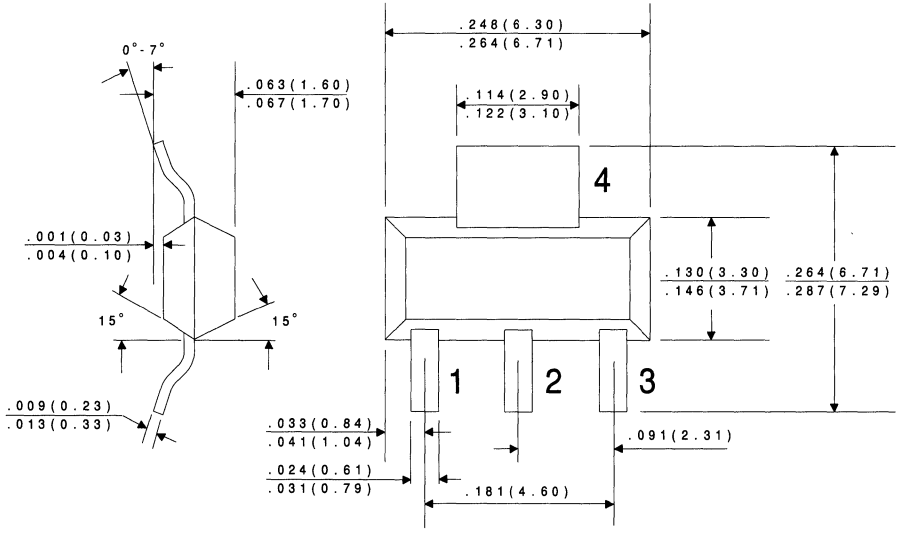
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=120V		50	nA
I_{CBO}	V_{CB}=120V, T_A=100°C		50	μA
I_{EBO}	V_{EB}=4.0V		50	nA
BV_{CBO}	I_C=100μA	180		V
BV_{CEO}	I_C=1.0mA	160		V
BV_{EBO}	I_E=10μA	6.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.15	V
$V_{CE(SAT)}$	I_C=50mA, I_B=5.0mA		0.20	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA		1.00	V
$V_{BE(SAT)}$	I_C=50mA, I_B=5.0mA		1.00	V
h_{FE}	V_{CE}=5.0V, I_C=1.0mA	80		
h_{FE}	V_{CE}=5.0V, I_C=10mA	80	250	
h_{FE}	V_{CE}=5.0V, I_C=50mA	30		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
f_T	V_{CE}=10V, I_C=10mA, f=100MHz	100	300	MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		6.0	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		20	pF
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	50	200	
NF	V_{CE}=5.0V, I_C=200μA, R_S=10Ω f=10Hz to 15.7kHz		8.0	dB

All dimensions in inches (mm).

TOP VIEW



DATA SHEET

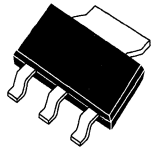
LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER
3) COLLECTOR

R1

CZTA14 NPN
CZTA64 PNP

SILICON COMPLEMENTARY DARLINGTON TRANSISTORS



SOT-223 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZTA14, CZTA64 types are complementary silicon Darlington transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for applications requiring extremely high gain.

MAXIMUM RATINGS (T_A=25°C)

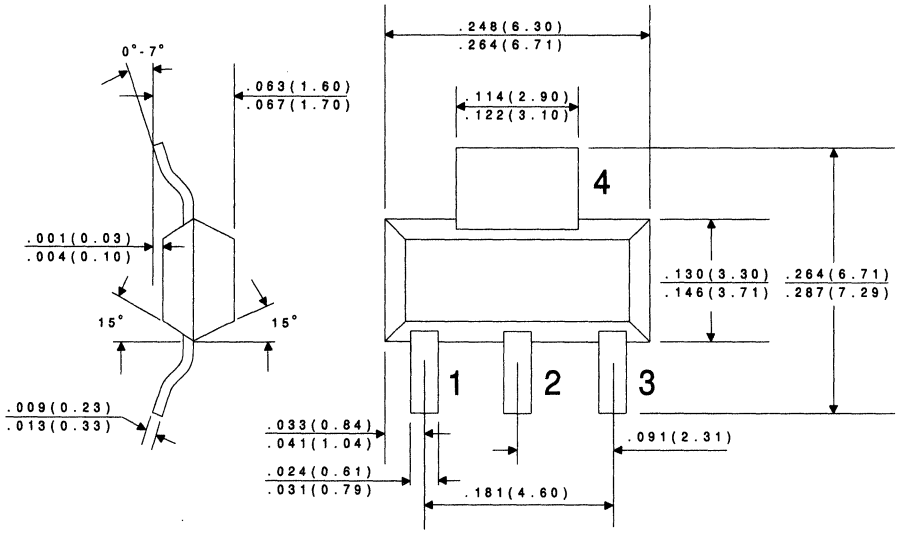
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	30	V
Collector-Emitter Voltage	V_{CEO}	30	V
Emitter-Base Voltage	V_{EBO}	10	V
Collector Current	I_C	1,000	mA
Power Dissipation	P_D	2.0	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	62.5	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=30V		100	nA
I_{CEO}	V_{CE}=10V		100	nA
BV_{CES}	I_C=100μA	30		V
$V_{CE(SAT)}$	I_C=100mA, I_B=0.1mA		1.5	V
$V_{BE(ON)}$	V_{CE}=5.0V, I_C=100mA		2.0	V
h_{FE}	V_{CE}=5.0V, I_C=10mA	10,000		
h_{FE}	V_{CE}=5.0V, I_C=100mA	20,000		
f_T	V_{CE}=5.0V, I_C=10mA, f=100MHz	125		MHz

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

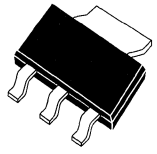
1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

DATA SHEET

R1

CZTA42 NPN
CZTA92 PNP

COMPLEMENTARY
SILICON HIGH VOLTAGE TRANSISTOR



SOT-223 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZTA42, CZTA92 types are complementary surface mount epoxy molded silicon planar epitaxial transistors designed for high voltage applications.

MAXIMUM RATINGS (T_A=25°C)

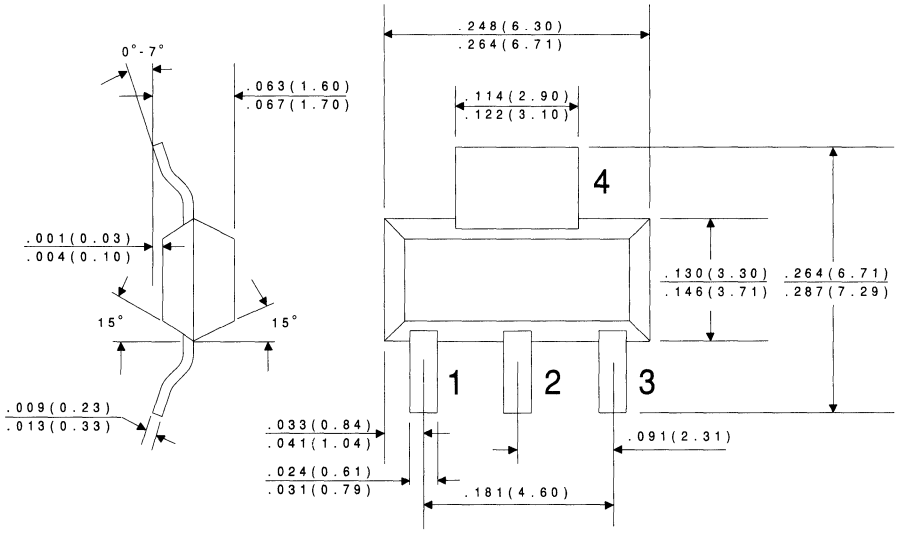
	SYMBOL	CZTA42	CZTA92	UNITS
Collector-Base Voltage	V_{CBO}	300	300	V
Collector-Emitter Voltage	V_{CEO}	300	300	V
Emitter-Base Voltage	V_{EBO}	6.0	5.0	V
Collector Current	I_C	500		mA
Power Dissipation	P_D	2.0		W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150		°C
Thermal Resistance	Θ_{JA}	62.5		°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

		CZTA42		CZTA92		
SYMBOL	TEST CONDITIONS	MIN	MAX	MIN	MAX	UNITS
I_{CBO}	V_{CB}=200V		100		250	nA
I_{EBO}	V_{BE}=6.0V		100		-	nA
I_{EBO}	V_{BE}=3.0V		-		100	nA
BV_{CBO}	I_C=100μA	300		300		V
BV_{CEO}	I_C=1.0mA	300		300		V
BV_{EBO}	I_E=100μA	6.0		5.0		V
$V_{CE(SAT)}$	I_C=20mA, I_B=2.0mA		0.5		0.5	V
$V_{BE(SAT)}$	I_C=20mA, I_B=2.0mA		0.9		0.9	V
h_{FE}	V_{CE}=10V, I_C=1.0mA	25		25		
h_{FE}	V_{CE}=10V, I_C=10mA	40		40		
h_{FE}	V_{CE}=10V, I_C=30mA	40		25		
f_T	V_{CE}=20V, I_C=10mA, f=100MHz	50		50		MHz
C_{ob}	V_{CB}=20V, I_E=0, f=1.0MHz		3.0		6.0	pF

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

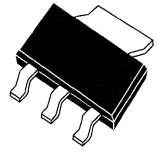
1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

DATA SHEET

R1

CZTA44

NPN SILICON EXTREMELY HIGH VOLTAGE TRANSISTOR



SOT-223 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZTA44 type is a surface mount epoxy molded silicon planar epitaxial transistors designed for extremely high voltage applications.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	450	V
Collector-Emitter Voltage	V_{CEO}	400	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	300	mA
Power Dissipation	P_D	2.0	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	62.5	°C/W

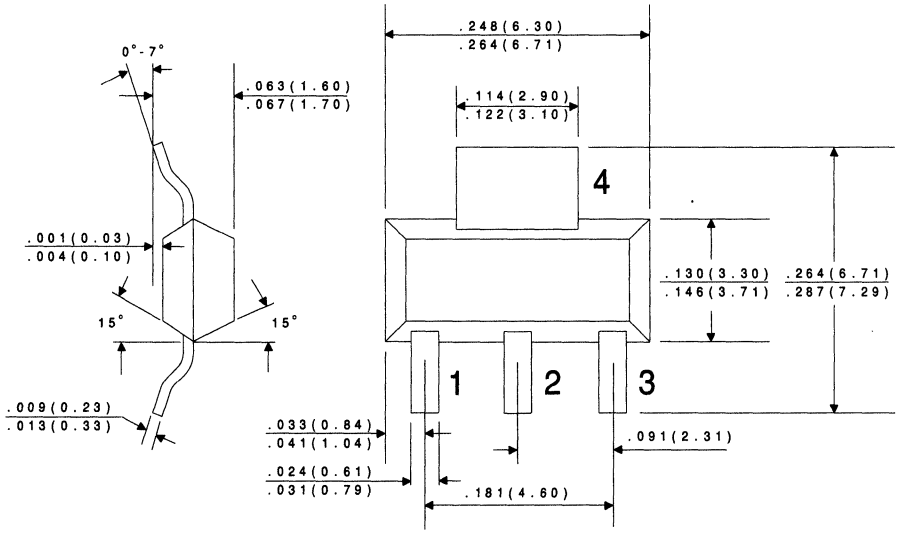
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=400V		100	nA
I_{CES}	V_{CE}=400V		500	nA
I_{EBO}	V_{BE}=4.0V		100	nA
BV_{CBO}	I_C=100μA	450		V
BV_{CES}	I_C=100μA	450		V
BV_{CEO}	I_C=1.0mA	400		V
BV_{EBO}	I_E=10μA	6.0		V
$V_{CE(SAT)}$	I_C=1.0mA, I_B=0.1mA		0.40	V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.50	V
$V_{CE(SAT)}$	I_C=50mA, I_B=5.0mA		0.75	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA		0.75	V
h_{FE}	V_{CE}=10V, I_C=1.0mA	40		
h_{FE}	V_{CE}=10V, I_C=10mA	50	200	
h_{FE}	VCE=10V, I_C=50mA	45		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=10V, I_C=100mA	20		
f_T	V_{CE}=10V, I_C=10mA, f=10MHz	20		MHz
C_{ob}	V_{CB}=20V, I_E=0, f=1.0MHz		7.0	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		130	pF

All dimensions in inches (mm).

TOP VIEW



DATA SHEET

LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

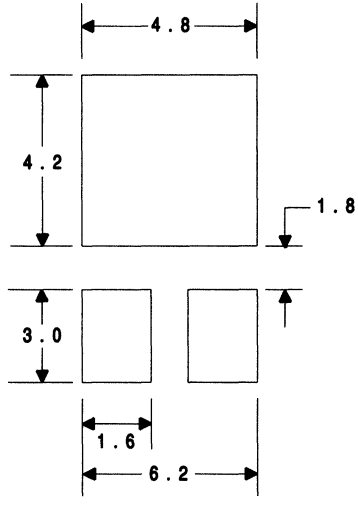
R1

Mounting Pad Geometries

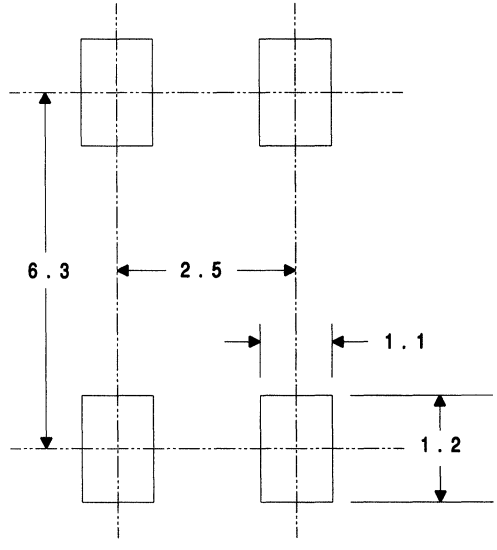
Mounting Pad Geometries

(Dimensions in mm.)

DPAK



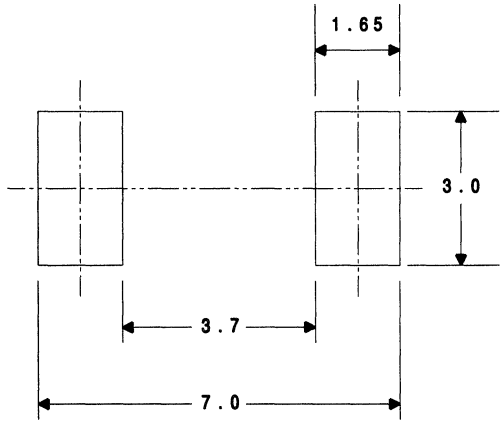
HD DIP



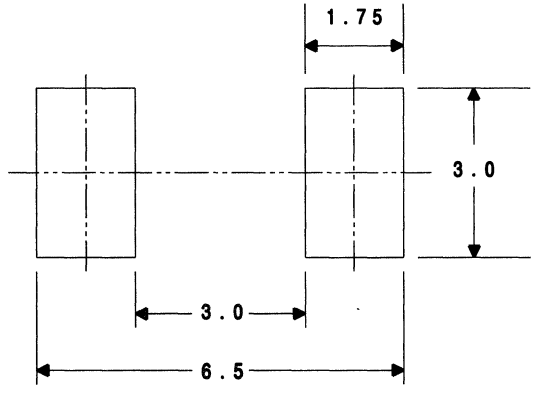
Mounting Pad Geometries

(Dimensions in mm.)

MELF



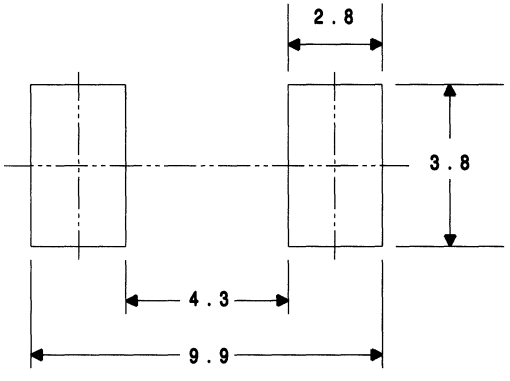
SMB



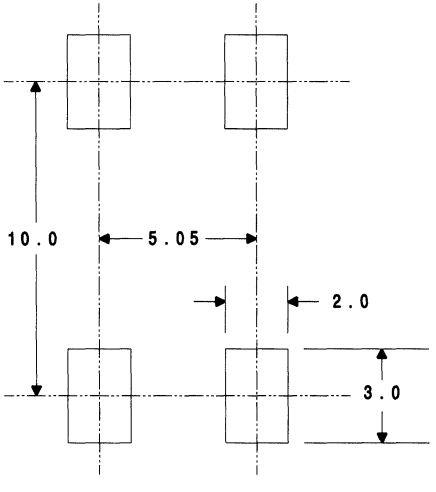
Mounting Pad Geometries (Continued)

(Dimensions in mm.)

SMC



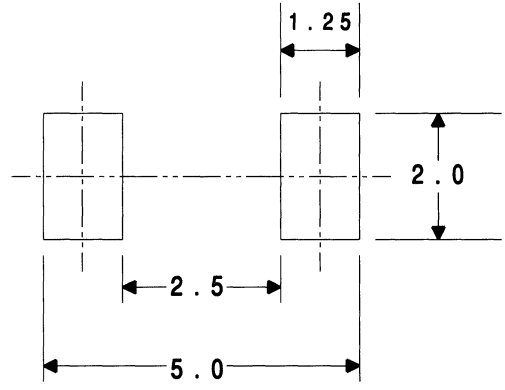
SMDIP



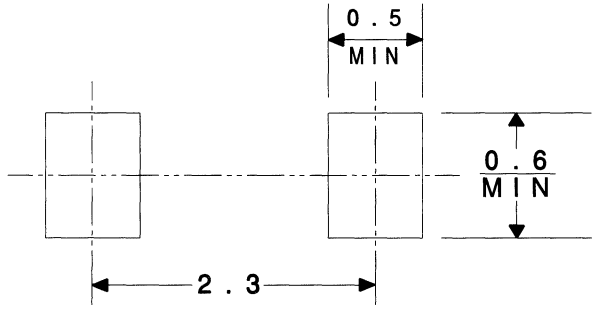
Mounting Pad Geometries (Continued)

(Dimensions in mm.)

SOD-80



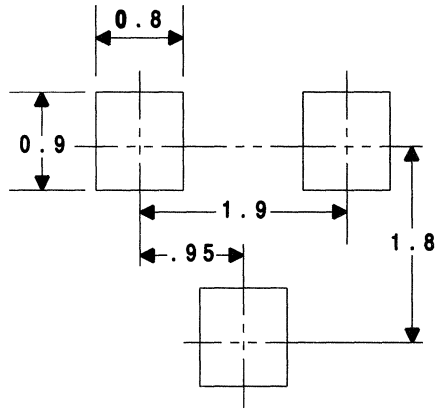
SOD-323



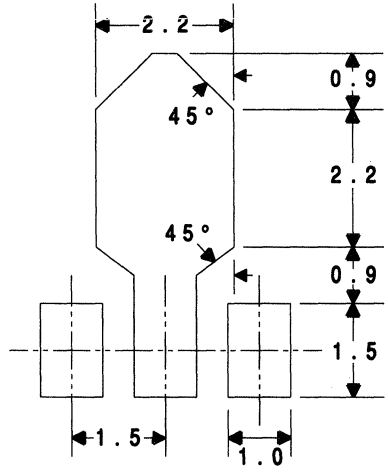
Mounting Pad Geometries (Continued)

(Dimensions in mm.)

SOT-23



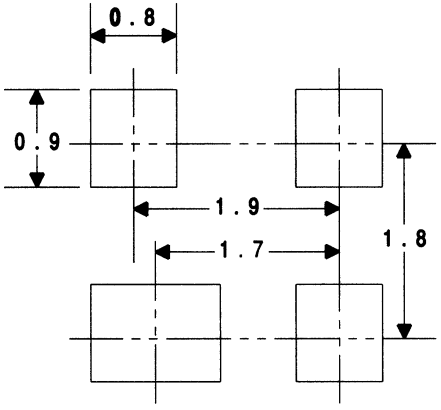
SOT-89



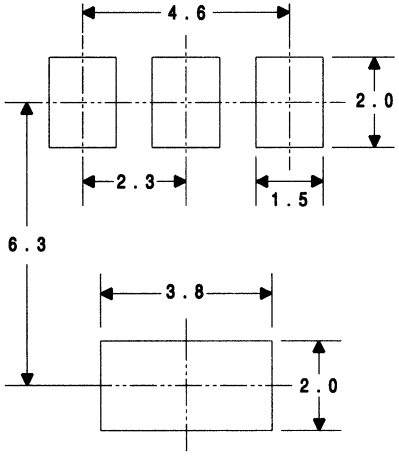
Mounting Pad Geometries (Continued)

(Dimensions in mm.)

SOT-143



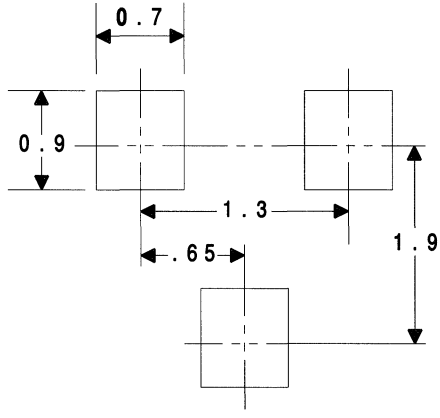
SOT-223



Mounting Pad Geometries (Continued)

(Dimensions in mm.)

SOT-323

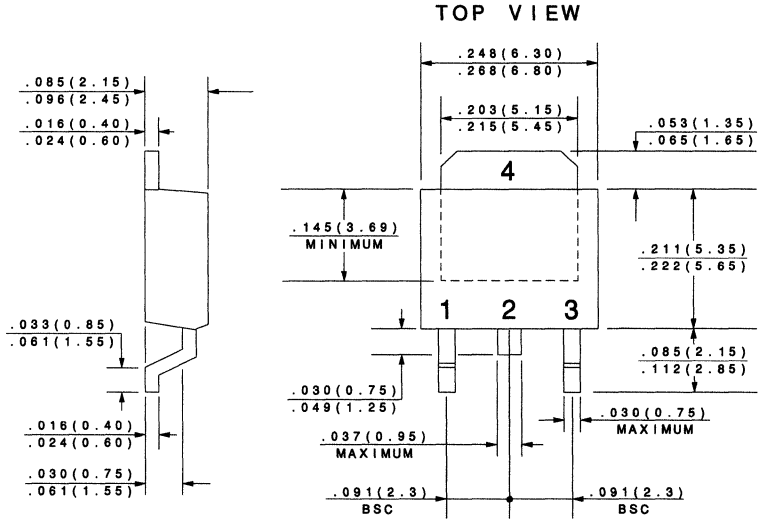


Mechanical Drawings

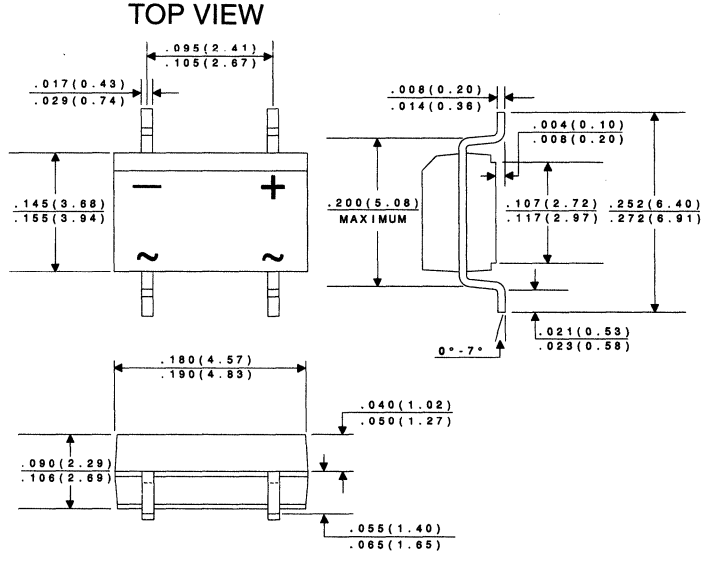
Mechanical Drawings

Dimensions in inches (mm).

DPAK



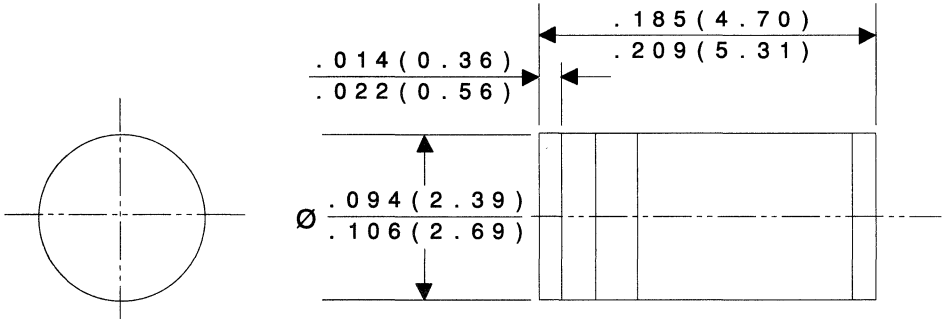
HD DIP



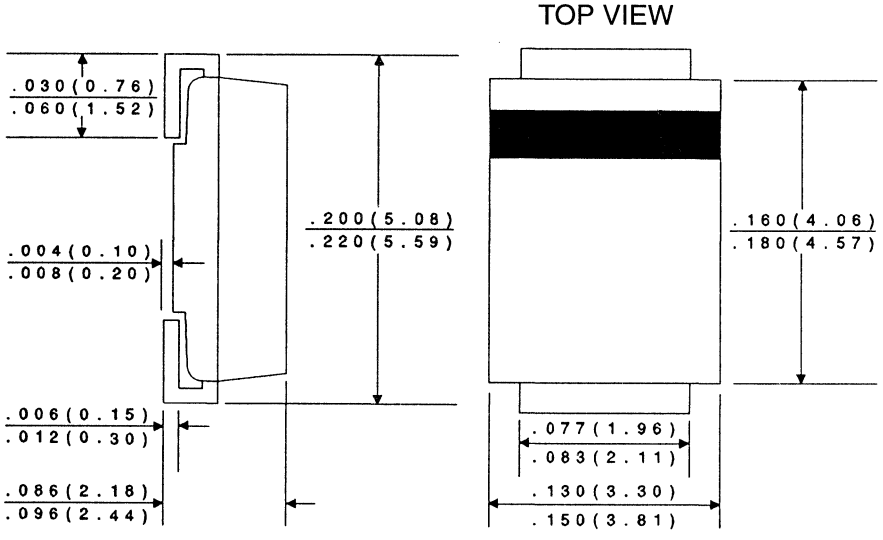
Mechanical Drawings (Continued)

Dimensions in inches (mm).

MELF



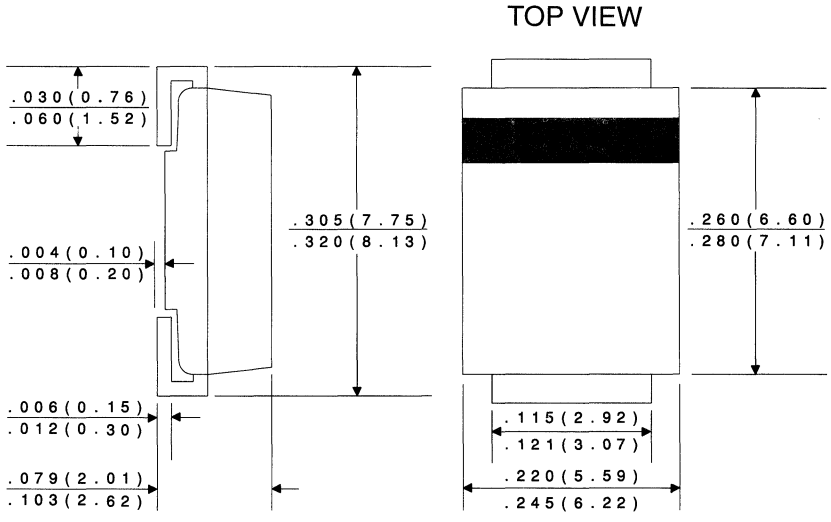
SMB



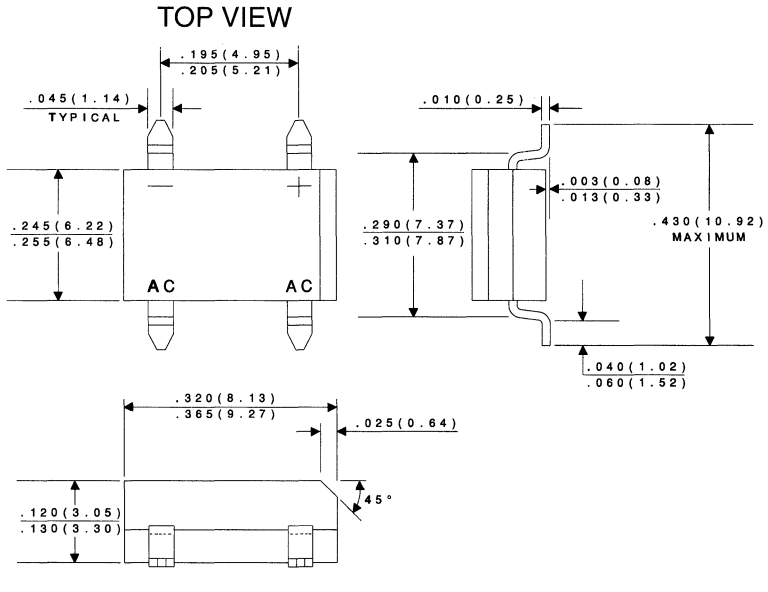
Mechanical Drawings (Continued)

Dimensions in inches (mm).

SMC



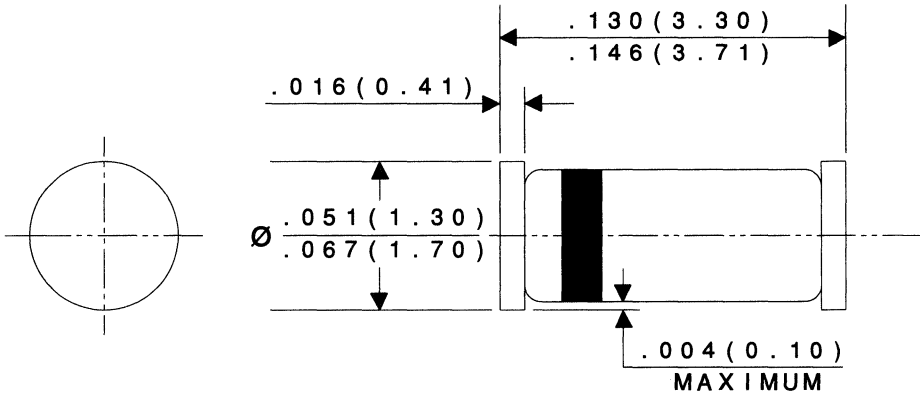
SMDIP



Mechanical Drawings (Continued)

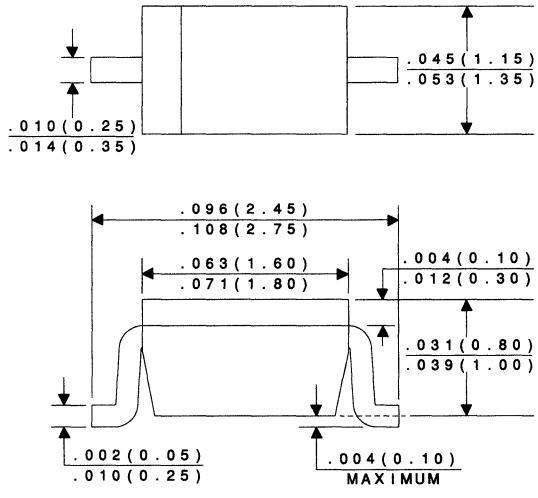
Dimensions in inches (mm).

SOD-80



SOD-323

TOP VIEW



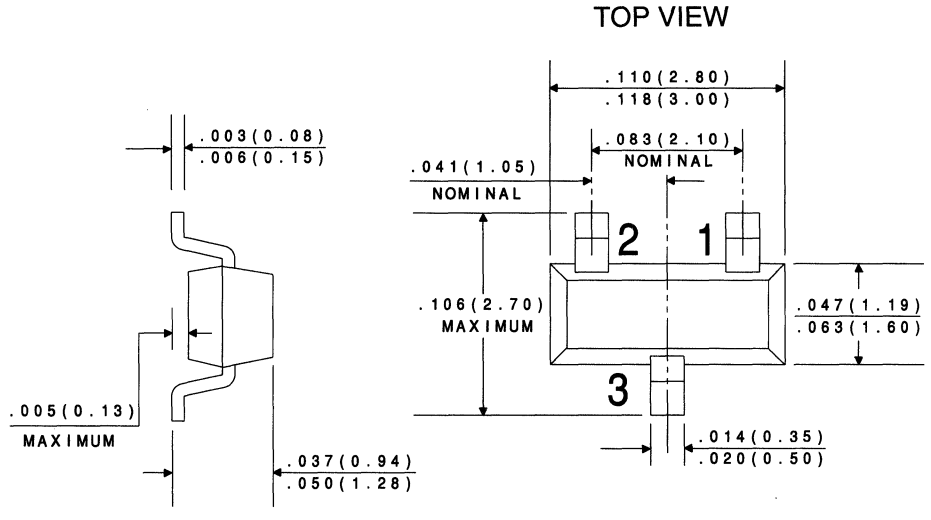
DWGs

Central™ Semiconductor Corp.

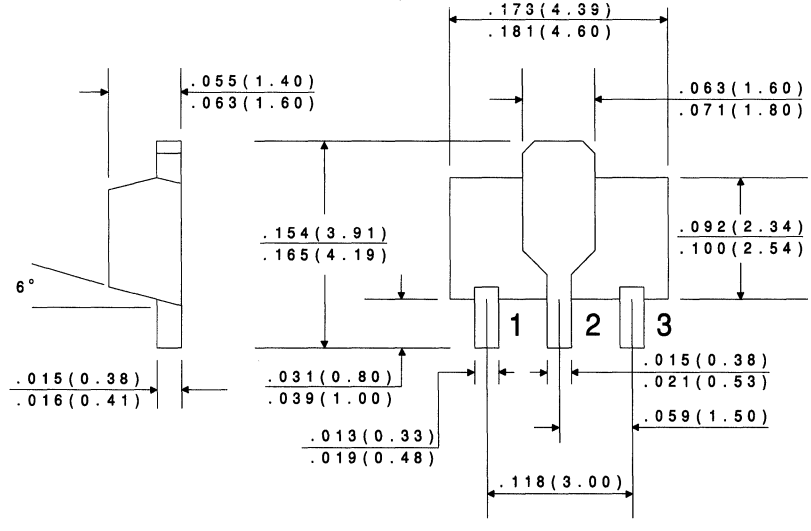
Mechanical Drawings (Continued)

Dimensions in inches (mm).

SOT-23



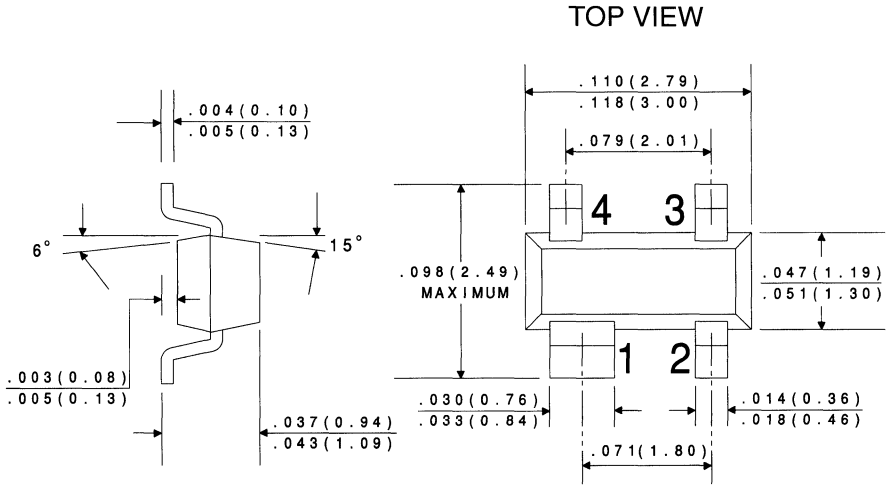
SOT-89



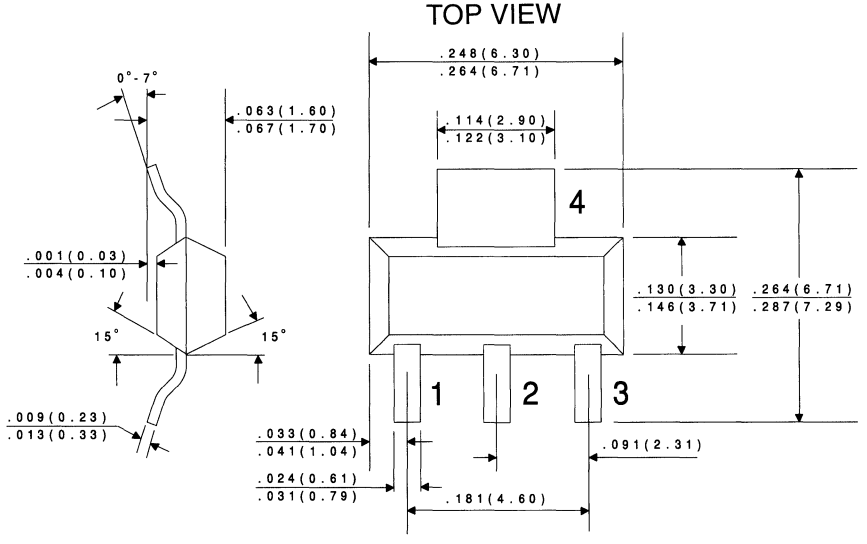
Mechanical Drawings (Continued)

Dimensions in inches (mm).

SOT-143



SOT-223



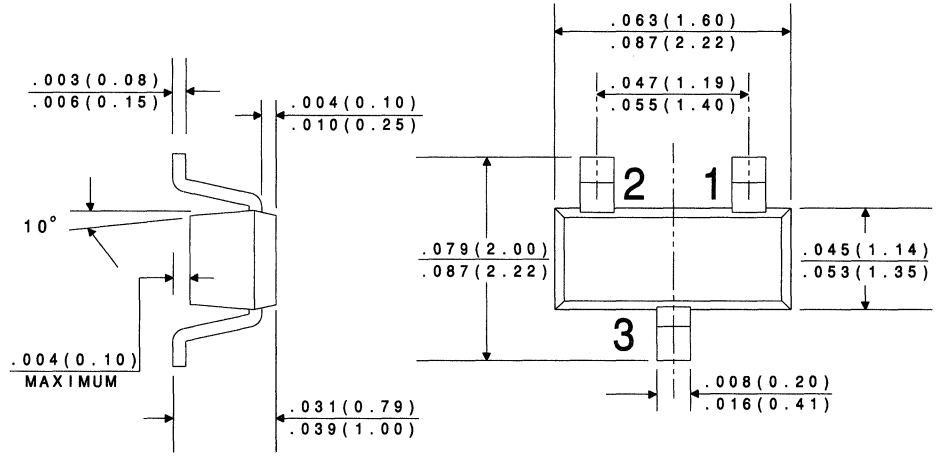
DWGs

Central™ Semiconductor Corp.

Mechanical Drawings (Continued)

Dimensions in inches (mm).

SOT-323



LEAD CODE	PIN 1	PIN 2	PIN 3
SOT-23 DIODE (SINGLE)	NO CONNECTION	ANODE	CATHODE
SOT-23 DIODE (DUAL, COMMON CATHODE)	ANODE	ANODE	CATHODE
SOT-23 DIODE (DUAL, COMMON ANODE)	CATHODE	CATHODE	ANODE
SOT-23 DIODE (DUAL, IN SERIES)	CATHODE	ANODE	CATHODE, ANODE
SOT-23 JFET	SOURCE*	DRAIN*	GATE
SOT-23 STABISTOR	NO CONNECTION	ANODE	CATHODE
SOT-23 SCR	GATE	CATHODE	ANODE
SOT-23 TRANSISTOR	EMITTER	BASE	COLLECTOR
SOT-23 ZENER (SINGLE)	NO CONNECTION	ANODE	CATHODE
SOT-23 ZENER (DUAL, COMMON ANODE)	CATHODE	CATHODE	ANODE
SOT-89 SCHOTTKY RECTIFIER	ANODE	CATHODE	ANODE
SOT-89 TRANSISTOR	EMITTER	COLLECTOR	BASE
SOT-89 TRIAC	GATE	MT2	MT1
SOT-89 ZENER DIODE	ANODE	CATHODE	ANODE
SOT-323 TRANSISTOR	BASE	EMITTER	COLLECTOR
SOT-323 DIODE (SINGLE)	ANODE	NO CONNECTION	CATHODE

	PIN 1	PIN 2	PIN 3	PIN 4
SOT-143 DIODE (DUAL, ISOLATED)	ANODE #1	ANODE #2	CATHODE #2	CATHODE #1
SOT-223 TRANSISTOR	BASE	COLLECTOR	EMITTER	COLLECTOR
SOT-223 SCR	CATHODE	ANODE	GATE	ANODE
SMDIP BRIDGE RECTIFIER	NEGATIVE	POSITIVE	AC	AC

	PIN 1	PIN 2	PIN 3	TAB
DPAK TRANSISTOR	BASE	COLLECTOR	EMITTER	COLLECTOR
DPAK SCHOTTKY RECTIFIER	ANODE	CATHODE	ANODE	CATHODE
DPAK RECTIFIER	ANODE	CATHODE	ANODE	CATHODE

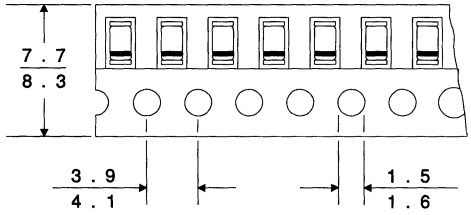
* SOURCE AND DRAIN ARE INTERCHANGEABLE ON JFETs.

Engineering Specifications

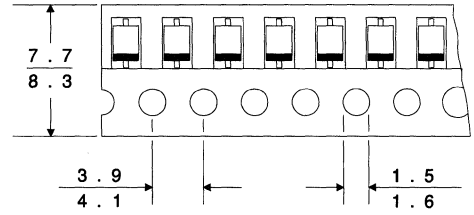
Tape Dimensions and Orientation (Dimensions in mm.)

8 mm

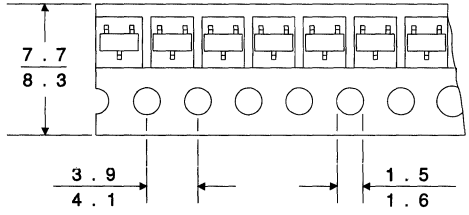
SOD-80



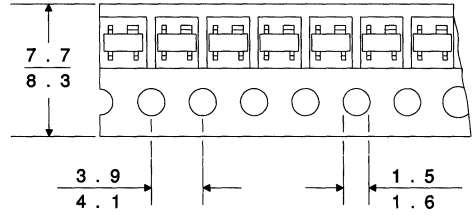
SOD-323



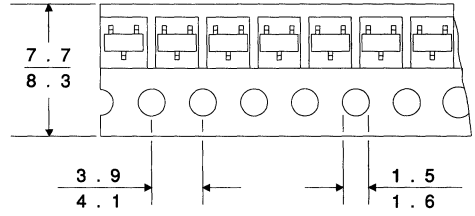
SOT-23



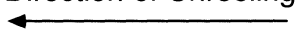
SOT-143



SOT-323



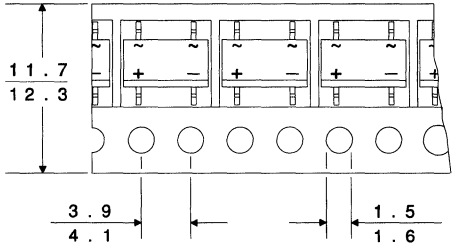
Direction of Unreeling



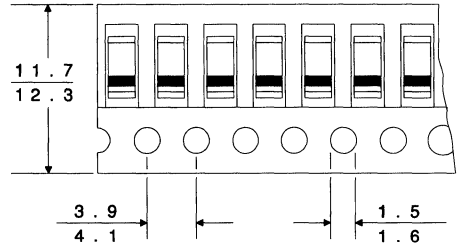
Tape Dimensions and Orientation (Dimensions in mm.)
(Continued)

12 mm

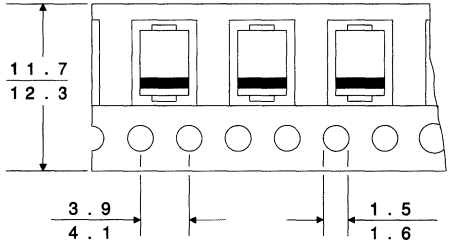
HD DIP



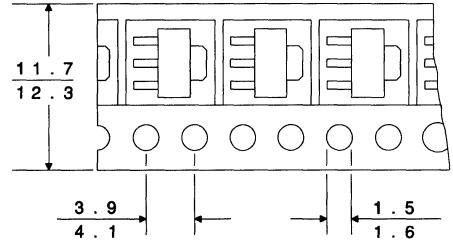
MELF



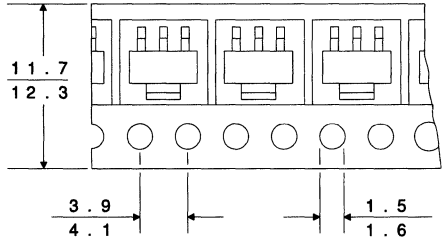
SMB



SOT-89



SOT-223

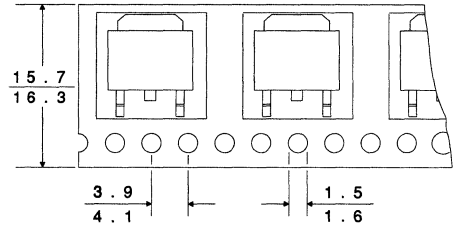


Direction of Unreeling

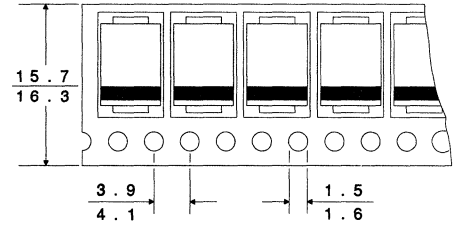
Tape Dimensions and Orientation (Dimensions in mm.) (Continued)

16 mm

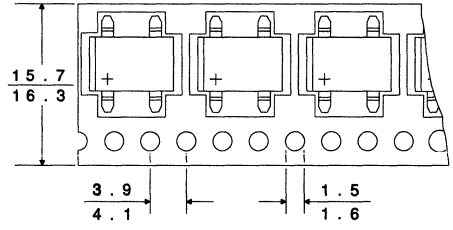
DPAK



SMC



SMDIP



Direction of Unreeling

Reel Labeling Information

Each reel is labeled with the following information:

Central Part Number
Customer Part Number
Purchase Order Number
Quantity
Lot Number
Ship Date
Marking Code *

* Applies to SOT-23, SOT-143, SOT-323, SOD-323, HD DIP, SMB & SMC devices only.

Bulk Packed Packaging Base

PACKAGE	QUANTITY
DPAK	100 / Vial
HD DIP	100 / Sleeve
MELF	1K / Vial
SMB	500 / Vial
SMC	100 / Vial
SMDIP	50 / Sleeve
SOD-80	1K / Vial
SOD-323	1K / Vial
SOT-23	1K / Vial
SOT-89	1K / Vial
SOT-143	1K / Vial
SOT-223	250 / Vial
SOT-323	1K / Vial

Taped & Reeled Packaging Base

PACKAGE	TAPE WIDTH (mm)	REEL SIZE (INCH)	QUANTITY PER REEL
DPAK*	16	13	1,000
HD DIP*	12	13	3,000
MELF	12	7 13	1,500 5,000
SMB*	12	13	3,000
SMC*	16	13	3,000
SMDIP*	16	13	1,000
SOD-80	8	7 13	2,500 10,000
SOD-323	8	7 13	3,000 10,000
SOT-23	8	7 13	3,000 10,000
SOT-89	12	7 13	1,000 4,000
SOT-143	8	7 13	3,000 10,000
SOT-223	12	7 13	1,000 4,000
SOT-323	8	7 13	3,000 10,000

* Available on 13" reels only.

Device Marking Information

Case	Marking Details
DPAK	Full Part Number
HD DIP	4 Digit Code
MELF	Cathode Band
SMB	3-4 Digit Code
SMC	3-4 Digit Code
SMDIP	Full Part Number
SOD-80	Cathode Band
SOD-323	2 Digit Code
SOT-23	2-3 Digit Code
SOT-89	Full Part Number
SOT-143	2-3 Digit Code
SOT-223	Full Part Number
SOT-323	2-3 Digit Code

Reel Packing Details

DEVICE	QUANTITY PER BOX	NUMBER OF REELS PER BOX	BOX DIMENSIONS		SHIPPING WEIGHT	
			INCH	CM	LB	KG
DPAK TR13	13K	13 Reels	14 X14 X 8	36 X 36 X 20	22	10
HD DIP TR13	39K	13 Reels	14 X 14 X 8	36 X 36 X 20	31	14
MELF TR	10.5K	7 Reels	4 X 8 X 8	10 X 20 X 20	5	3
	70K	14 Reels	8 X 8 X 8	20 X 20 X 20	9	5
SMB TR13	33K	11 Reels	14 X 14 X 8	36 X 36 X 20	22	10
SMC TR13	39K	13 Reels	14 X 14 X 8	36 X 36 X 20	22	10
SMDIP TR13	13K	13 Reels	14 X 14 X 8	36 X 36 X 20	22	10
SOD-80 TR	25K	10 Reels	4 X 8 X 8	10 X 20 X 20	4	2
	47.5K	19 Reels	8 X 8 X 8	20 X 20 X 20	7	4
SOD-323 TR	30K	10 Reels	4 X 8 X 8	10 X 20 X 20	3	2
	57K	19 Reels	8 X 8 X 8	20 X 20 X 20	5	3
SOT-23 TR	30K	10 Reels	4 X 8 X 8	10 X 20 X 20	3	2
	57K	19 Reels	8 X 8 X 8	20 X 20 X 20	5	3
SOT-89 TR	7K	7 Reels	4 X 8 X 8	10 X 20 X 20	3	2
	14K	14 Reels	8 X 8 X 8	20 X 20 X 20	6	3
SOT-143 TR	30K	10 Reels	4 X 8 X 8	10 X 20 X 20	3	2
	57K	19 Reels	8 X 8 X 8	20 X 20 X 20	5	3
SOT-223 TR	7K	7 Reels	4 X 8 X 8	10 X 20 X 20	4	2
	14K	14 Reels	8 X 8 X 8	20 X 20 X 20	7	4
SOT-323 TR	30K	10 Reels	4 X 8 X 8	10 X 20 X 20	3	2
	57K	19 Reels	8 X 8 X 8	20 X 20 X 20	5	3

ORDERING INFO:

- For devices taped and reeled on 7" reels, add TR suffix to part number.
- For devices taped and reeled on 13" reels, add TR13 suffix to part number
- For devices bulk packed, add BK suffix to part number.
- All SMDs are available bulk packed, for prototype and manual placement applications.
- Bulk SMDs are shipped in black plastic, antistatic vials with hinged lids.

Central™
Semiconductor Corp.

Labeling Specification

1.0. Purpose: This Specification defines the layout and identification of the Inner Carton/ Reel Label used by Central Semiconductor Corp.

1.1. This label must be affixed to each inner carton/reel in the shipment.

1.2. Label Information and Layout:

1) CENTRAL P/N:	Line 1) Central Part Number Number (Up to 25 Characters)
2) CUSTOMER P/N:	Line 2) Customer Part Number (Up to 25 Characters)
3) PURCHASE O/N:	Line 3) Customer's Purchase Order Number (Up to 25 Characters)
4) QUANTITY:	Line 4) Quantity of Devices. (Up to 15 Characters)
5) LOT NUMBER:	Line 5) Lot Number of the Devices. (Up to 25 Characters)
6) DATE CODE:	Line 6) Date Code of the Devices. (Up to 5 Characters)
7) SHIP DATE:	Line 7) Ship Date - The day cartons are shipped from Central. (Month-Day-Year)
8) MARKING CODE:	Line 8) Marking of the Device. (Applies to HD DIP, SOT-23, SOT-143, SOT-323, SOD-323, SMB and SMC Devices only.)

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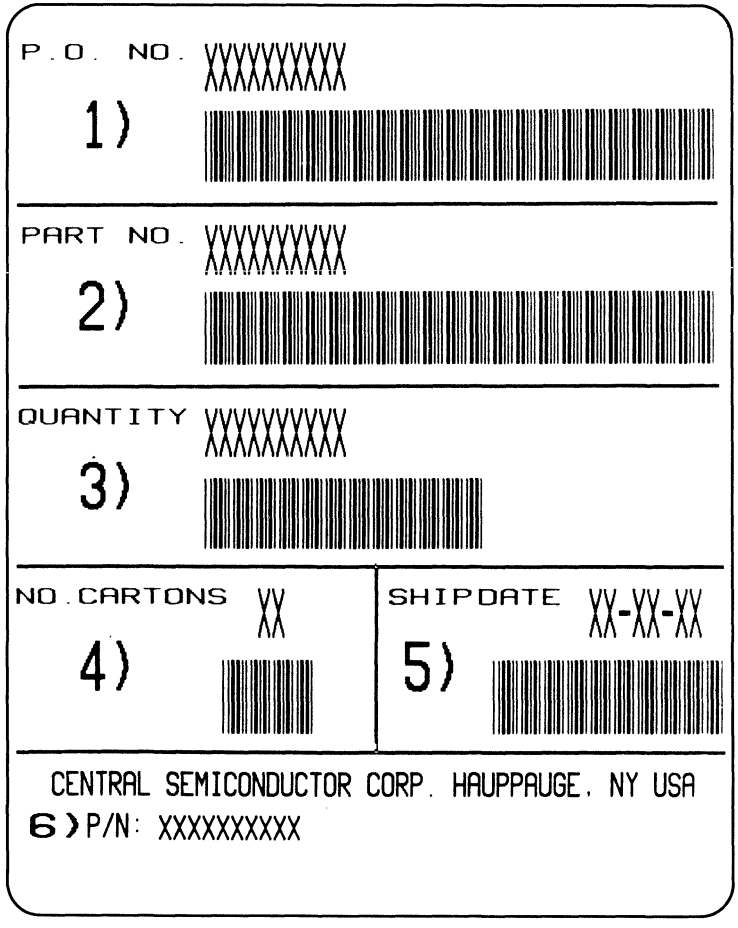
Semiconductor Corp.

Bar Code Identification Label

Note: Bar Code Label Available Upon Request.

1.0. Purpose: This Specification defines the layout and identification of the Bar Code Label used by Central Semiconductor Corp.

1.1. This label must be affixed to each carton in the shipment and to the reverse side of the packing slip.
1.2. Bar codes are type 3-of-9 (Code 39) Symbology.
1.3. Label Information and Layout:



Line 1) Customer Purchase Order Number (Up to 30 Characters)

Line 2) Customer Part Number (Up to 30 Characters)

Line 3) Total Quantity in Shipment. (Up to 15 Characters)

Line 4) Total Number of Cartons in Shipment. (Up to 2 Characters)

Line 5) Ship Date - The day cartons are shipped from Central. (Month-Day-Year)

Line 6) Central Semiconductor Corp., Hauppauge, NY USA
Central Part Number
(Up to 30 Characters)

Label Size - 4" x 5"

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FAX (516) 435-1824

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WORLD CLASS DISCRETE SEMICONDUCTORS