1N5333----1N5388

ZENER DIODES

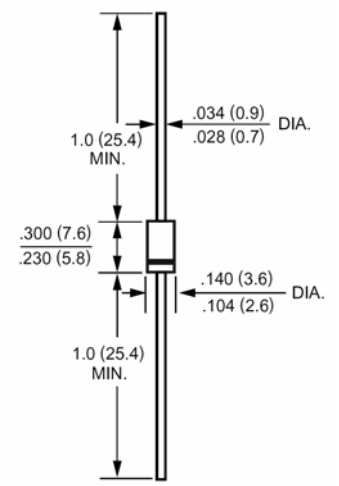
康 比 電 子
HORNBY ELECTRONIC

PEAK PULSE POWER: **5 WATTS**

FEATURES

· Silicon planar power zener diodes
· For use in stabilizing and clipping curcuits with high
power rating.
· Standard zener voltage tolerance is ±10%. Add suffix "B" for ±5% tolerance. other zener voltage and tolerances are available upon request.

DO-15



Dimensions in inches and (millimeters)

MECHANICAL DATA

Case:DO-201AE
Terminals: solderable per MIL-STD-202, method 208
Polarity: cathode Band
Marking: type number
Approx. weight: 0.032 ounces, 0.9 grams

Maximum Ratings and Electrical Characteristics

Ratings at 25℃ ambient temperature unless otherwise specified.
Single phase,half wave,60 Hz,resistive or inductive load. For capacitive load,derate by 20%.

	Symbols	VALUE	Units
Zener current (see Table "Characteristics")			
DC power dissipation @ TL=75, measure at zero lead length (Fig.1) derate above 75 (NOTE 1)	P_D	5.0 40.0	**W** **mW**
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)(NOTE 1,2)	I_{FSM}	see fig.5	**A**
Junction temperature	T_J	-55----150	℃
Storage temperature range	T_S	-55----170	℃

NOTES:

1- Mounted on 8.0mm2 copper pads to each terminal.

2- 8.3ms single half sine-wave, or equivalent square wave, duty cycle=4 pulses per minute maximum.

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ELECTRICAL CHARACTERISTICS (TA=25 ℃)

Type (Note 1)	Zener voltage (Note 2)		Maximum Zener Impedance (Note 2)		Max Reverse Leakage Current		IR (Note 3) A	VZ (Note 4) V	IZM (Note 5) mA
	VZ@IZT V	IZT mA	ZZT@IZT Ω	ZZT@IZK =1μA mA Ω	IR uA	VR V			
1N5333	3.3	380	3	400	300	1.0	20	0.85	1440
1N5334	3.6	350	2.5	500	150	1.0	18.7	0.8	1320
1N5335	3.9	320	2	500	50	1.0	17.6	0.54	1220
1N5336	4.3	290	2	500	10	1.0	16.4	0.49	1100
1N5337	4.7	260	2	450	5	1.0	15.3	0.44	1010
1N5338	5.1	240	1.5	400	1	1.0	14.4	0.39	930
1N5339	5.6	220	1	400	1	2	13.4	0.25	865
1N5340	6	200	1	300	1	3	12.7	0.19	790
1N5341	6.2	200	1	200	1	4	12.4	0.1	765
1N5342	6.8	175	1	200	10	4.9	11.5	0.15	700
1N5343	7.5	175	1.5	200	10	5.4	10.7	0.15	630
1N5344	8.2	150	1.5	200	10	5.9	10	0.2	580
1N5345	8.7	150	2	200	10	6.3	9.5	0.2	545
1N5346	9.1	150	2	150	7.5	6.6	9.2	0.22	520
1N5347	10	125	2	125	5	7.2	8.6	0.22	475
1N5348	11	125	2.5	125	5	8	8	0.25	430
1N5349	12	100	2.5	125	2	8.6	7.5	0.25	395
1N5350	13	100	2.5	100	1	9.4	7	0.25	365
1N5351	14	100	2.5	75	1	10.1	6.7	0.25	340
1N5352	15	75	2.5	75	1	10.8	6.3	0.25	315
1N5353	16	75	2.5	75	1	11.5	6	0.3	295
1N5354	17	70	2.5	75	0.5	12.2	5.8	0.35	280
1N5355	18	65	2.5	75	0.5	13	5.5	0.4	264
1N5356	19	65	3	75	0.5	13.7	5.3	0.4	250
1N5357	20	65	3	75	0.5	14.4	5.1	0.4	237
1N5358	22	50	3.5	75	0.5	15.8	4.7	0.45	216
1N5359	24	50	3.5	100	0.5	17.3	4.4	0.55	198
1N5360	25	50	4	110	0.5	18	4.3	0.55	190
1N5361	27	50	5	120	0.5	19.4	4.1	0.6	176
1N5362	28	50	6	130	0.5	21.1	3.9	0.6	170
1N5363	30	40	8	140	0.5	21.6	3.7	0.6	158
1N5364	33	40	10	150	0.5	23.8	3.5	0.6	144
1N5365	36	30	11	160	0.5	25.9	3.5	0.65	132
1N5366	39	30	14	170	0.5	28.1	3.1	0.65	122
1N5367	43	30	20	190	0.5	31	2.8	0.7	110
1N5368	47	25	25	210	0.5	33.8	2.7	0.8	100
1N5369	51	25	27	230	0.5	36.7	2.5	0.9	93
1N5370	56	20	35	280	0.5	40.3	2.3	1	86
1N5371	60	20	40	350	0.5	43	2.2	1.2	79
1N5372	62	20	42	400	0.5	44.6	2.1	1.35	76
1N5373	68	20	44	500	0.5	49	2	1.5	70
1N5374	75	20	45	620	0.5	54	1.9	1.6	63
1N5375	82	15	65	720	0.5	59	1.8	1.8	58
1N5376	87	15	75	760	0.5	63	1.7	2	54.5
1N5377	91	15	75	760	0.5	65.5	1.6	2.2	52.5
1N5378	100	12	90	800	0.5	72	1.5	2.5	47.5
1N5379	110	12	125	1000	0.5	79.2	1.4	2.5	43
1N5380	120	10	170	1150	0.5	86.4	1.3	2.5	39.5
1N5381	130	10	190	1250	0.5	93.2	1.2	2.5	36.6
1N5382	140	8	230	1500	0.5	101	1.2	2.5	34
1N5383	150	8	330	1500	0.5	108	1.1	3	31.6
1N5384	160	8	350	1650	0.5	115	1.1	3	29.4

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Type (Note 1)	Zener voltage (Note 2)		Maximum Zener Impedance (Note 2)		Max Reverse Leakage Current		IR (Note 3) A	VZ (Note 4) V	IZM (Note 5) mA
	VZ@IZT V	IZT mA	ZZT@IZT Ω	ZZT@IZK =1μA mA Ω	IR uA	VR V			
1N5385	170	8	380	1750	0.5	122	1	3	28
1N5386	180	5	430	1750	0.5	130	1	4	26.4
1N5387	190	5	450	1850	0.5	137	0.9	5	25
1N5388	200	5	480	1850	0.5	144	0.9	5	23.6

Note:

1 TOLERANCE AND VOLTAGE DESIGNATION-The JEDEC type numbers shown indicate a tolerance of ±10% with guaranteed limits on only Vz, IR, Ir, and VF as shown in the electrical characteristics table. Units with guaranteed limits on all seven parameters are indicated by suffix "B" for ±5% tolerance.

2 ZENER VOLTAGE (Vz) AND IMPEDANCE (ZZT & ZZK) - Test conditions for zener voltage and impedance are as follows;Iz is applied 40±10ms prior to reading. Mounting contacts are located from the inside edge of mounting clips to the body of the diode.

3 SURGE CURRENT (Ir) - Surge current is specified as the maximum allowable peak, non-recurrent square-wave current with a pulse width, PW, of 8.3ms.The data given in Fig 5. May be used to find the maximum surge current for a quare wave of any pulse width between 1 ms by plotting the applicable points on logarithmic paper. Examples of this, using the 6.8v and 200v zeners, are shown in Fig 6. Mounting contact located as specified in NOTE 3.

4 VOLTAGE REGULATION (Vz) - Test conditions for voltage regulation are as follows: Vz measurements are the made at 10% and then at 50% of the Iz max value listed in the electrical characteristics table. The test currents are the same for the 5% and 10% tolerance devices. The test current time druation for each Vz measurement is 40±10ms. Mounting contact located as specified in NOTE 2.

5 MAXIMUM REGULATOR CURRENT (IZM) - The maximum current shown is based on the maximum voltage of a 5% type unit. Therefore, it applies only to the B-suffix device. The actual IZM for any device may not exceed the value of 5 watts divided by the actual Vzof the device. TL=75℃ at 3/8" maximum from the device body.

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RATINGS AND CHARACTERISTIC CURVES

FIG.1 --FORWARD DERATING CURVE

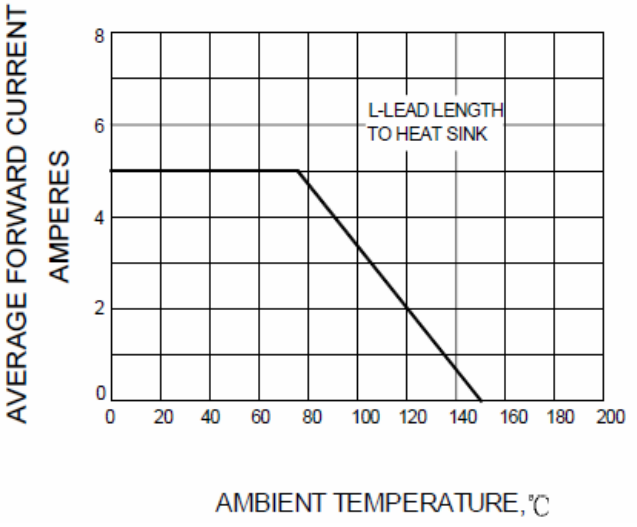


FIG.2 -- TEMPERATURE COEFFICIENT RANGE

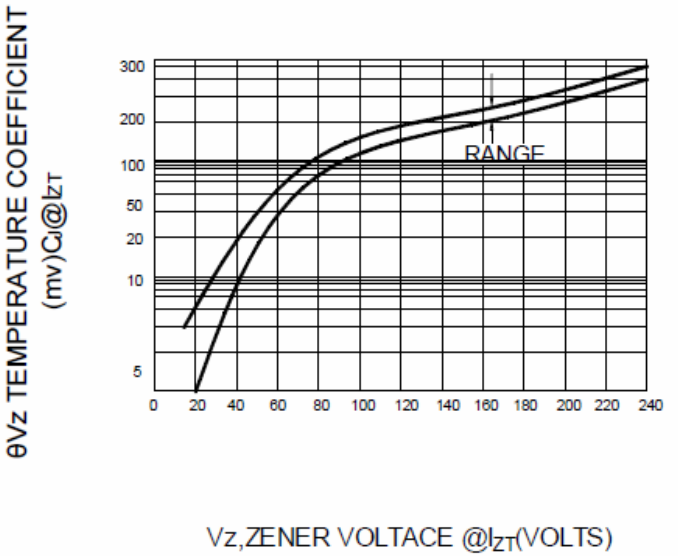


FIG.3 -- TYPICAL THERMAL RESISTANCE

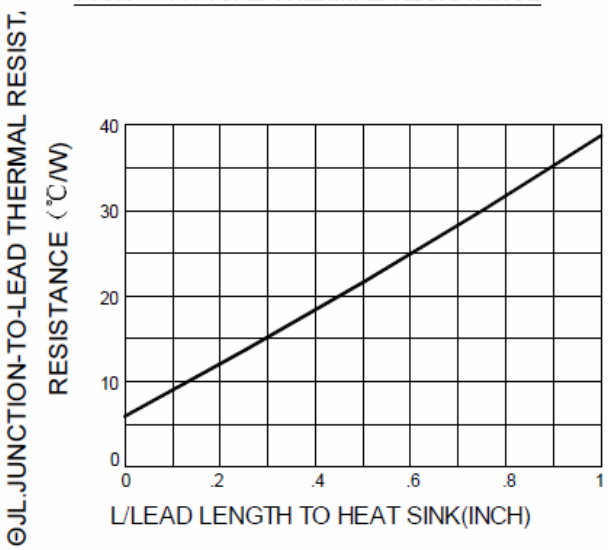


FIG.4 -- MAXIMUM NON-REPETITIVE SURGE CURRENT

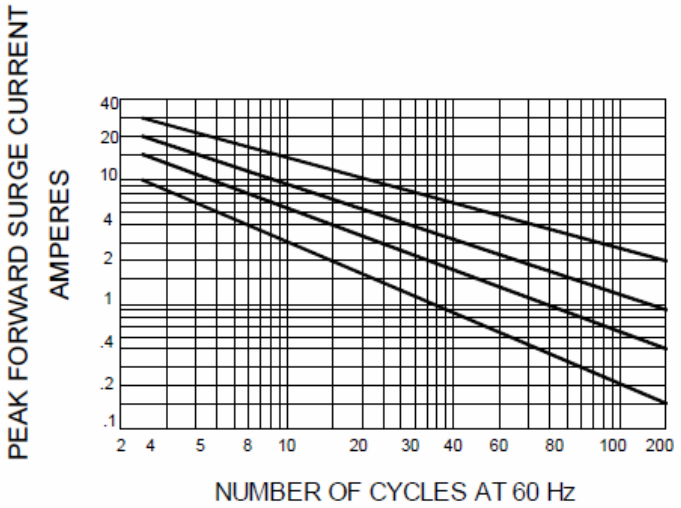
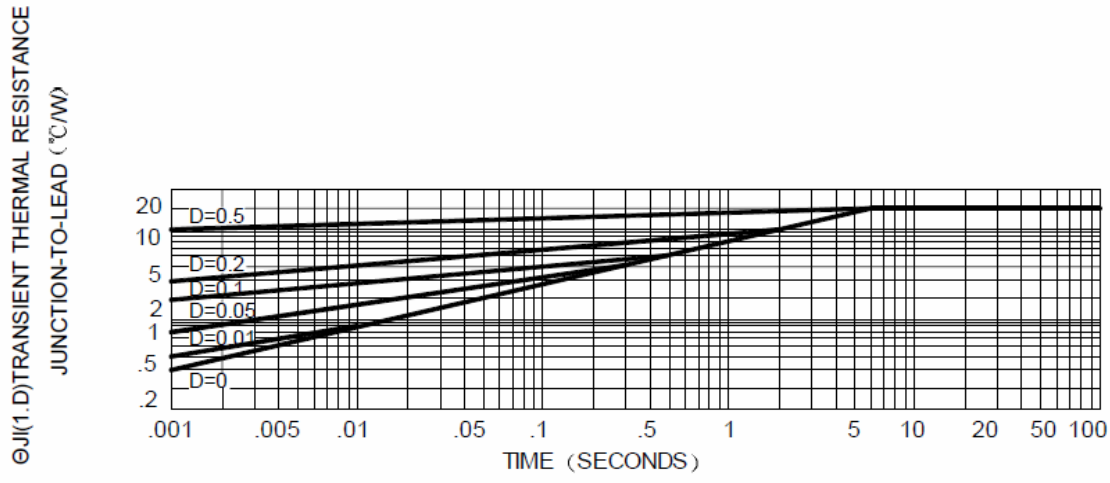


FIG.5 -- TYPICAL THERMAL RESPONSE



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RATINGS AND CHARACTERISTIC CURVES

FIG.6 – PEAK SURGE CURRENT VERSUS PULSE WIDTH

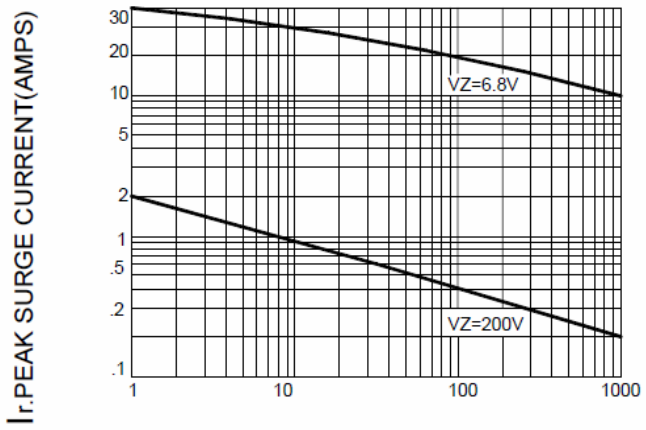

FIG.7 – ZENER VOLTAGE VERSUS ZENER CURRENT
Vz=6.8 THRU 10 VOLTS

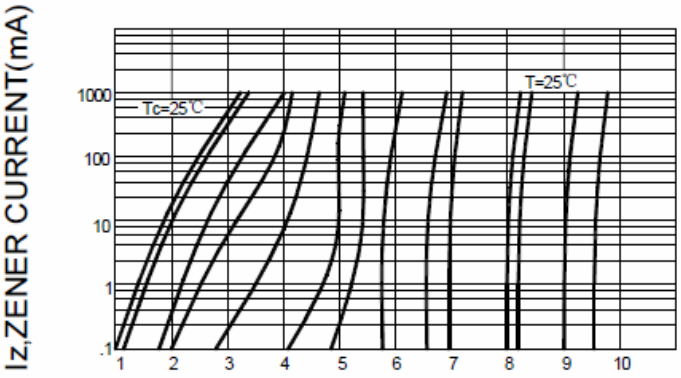

FIG.8 – ZENER VOLTAGE VERSUS ZENER CURRENT
Vz=11 THRU 75 VOLTS

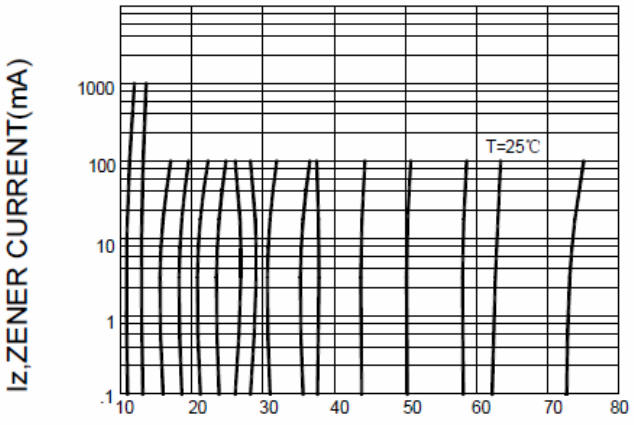

FIG.9 – ZENER VOLTAGE VERSUS ZENER CURRENT
Vz=82 THRU 200 VOLTS