5W AXIAL LEAD ZENER DIODES

1N5333B TO 1N5388B

DO-15P
Axial Lead Plastic
Package

Features
1). Silicon Planar Power Zener Diodes.
2). For use in Stabillizing and Clipping Circuits with High Power Rating.
3). Standard Zener Voltage Tolerance is ±10% and Suffix 'B' is for ±5% Tolerance.

Maximum Ratings @ 25°C Ambient Temperature (unless otherwise specified)

Parameter	Symbol	Value	Unit
DC Power Dissipation at T_L = 75°C, measured at zero lead length (see Fig.1)	P_D	5	W
Derate above 75°C (Note. 1)		40	mW
Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load (Note 1, 2)	I_{FSM}	see Fig. 2	A
Junction Temperature Range	T_J	-55 to 150	°C
Storage Temperature Range	T_{STG}	-55 to 150	°C

Note :

1). Mounted on 8.0mm^2 copper pads to each terminal.

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

FIG.1 –FORWARD DERATING CURVE

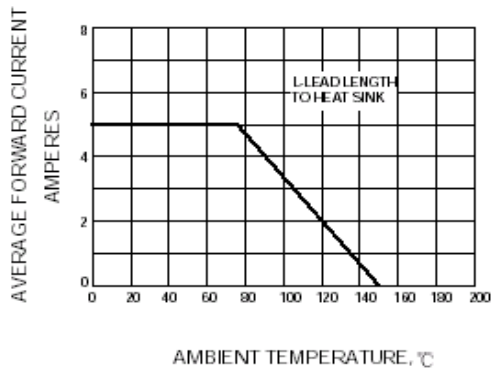
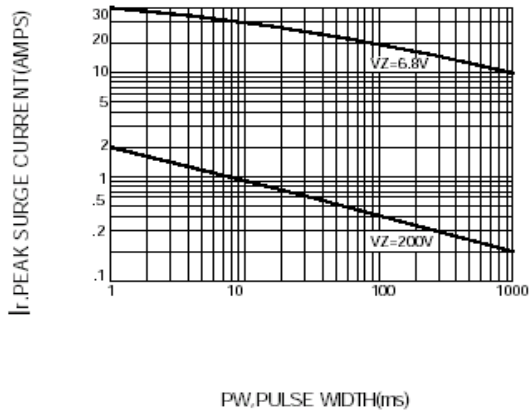


FIG. 2 - PEAK SURGE CURRENT VS PULSE WIDTH



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ELECTRICAL CHARACTERISTICS (Rating at 25°C ambient temperature unless otherwise specified)

TYPE	Nominal Zener Voltage (Note 2)		Maximum Zener Impedance (Note 2)		Maximum Reverse Leakage Current		Ir (Note 3)	V_Z (Note 4)	I_{ZM} (Note 5)
	V_Z @ I_{ZT}	I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK} = 1μ_A	I_R @ V_R		A	V	mA
	(V)	(mA)	(Ω)	(Ω)	I_R (µA)	V_R (V)			
1N5333B	3.3	380.0	3.0	400	300	1.0	20.0	0.85	1440
1N5334B	3.6	350.0	2.5	500	150	1.0	18.7	0.80	1320
1N5335B	3.9	320.0	2.0	500	50	1.0	17.6	0.54	1220
1N5336B	4.3	290.0	2.0	500	10	1.0	16.4	0.49	1100
1N5337B	4.7	260.0	2.0	450	5	1.0	15.3	0.44	1010
1N5338B	5.1	240.0	1.5	400	1.0	1.0	14.4	0.39	930
1N5339B	5.6	220.0	1.0	400	1.0	2.0	13.4	0.25	865
1N5340B	6.0	200.0	1.0	300	1.0	3.0	12.7	0.19	790
1N5341B	6.2	200.0	1.0	200	1.0	3.0	12.4	0.10	765
1N5342B	6.8	175.0	1.0	20	10	5.2	11.5	0.15	700
1N5343B	7.5	175.0	1.5	200	10	5.7	10.7	0.15	630
1N5344B	8.2	150.0	1.5	200	10	6	10.0	0.20	580
1N5345B	8.7	150.0	2.0	200	10	7	9.5	0.20	545
1N5346B	9.1	150.0	2.0	150	7.5	7	9.2	0.22	520
1N5347B	10	125.0	2.0	125	5.0	7.6	8.6	0.22	475
1N5348B	11	125.0	2.5	125	5.0	8.4	8.0	0.25	430
1N5349B	12	100.0	2.5	125	2.0	9.1	7.5	0.25	395
1N5350B	13	100.0	2.5	100	1.0	9.9	7.0	0.25	365
1N5351B	14	100.0	2.5	75	1.0	10.6	6.7	0.25	340
1N5352B	15	75.0	2.5	75	1.0	11.5	6.3	0.25	315
1N5353B	16	75.0	2.5	75	1.0	12.2	6.0	0.30	295
1N5354B	17	70.0	2.5	75	0.5	12.9	5.8	0.35	280
1N5355B	18	65.0	2.5	75	0.5	13.7	5.5	0.40	264
1N5356B	19	65.0	3.0	75	0.5	14.4	5.3	0.40	250
1N5357B	20	65.0	3.0	75	0.5	15.2	5.1	0.40	237
1N5358B	22	50.0	3.5	75	0.5	16.7	4.7	0.45	216
1N5359B	24	50.0	3.5	100	0.5	18.2	4.4	0.55	198
1N5360B	25	50.0	4.0	110	0.5	19.0	4.3	0.55	190
1N5361B	27.0	50.0	5.0	120	0.5	20.6	4.1	0.60	190
1N5362B	28.0	50.0	6.0	130	0.5	21.2	3.9	0.60	176
1N5363B	30.0	40.0	8.0	140	0.5	22.8	3.7	0.60	170
1N5364B	33.0	40.0	10.0	150	0.5	25.1	3.5	0.60	158
1N5365B	36.0	30.0	11.0	160	0.5	27.4	3.5	0.65	144
1N5366B	39.0	30.0	14.0	170	0.5	29.7	3.1	0.65	132
1N5367B	43.0	30.0	20.0	190	0.5	32.7	2.8	0.70	122
1N5368B	47.0	25.0	25.0	210	0.5	35.8	2.7	0.80	110
1N5369B	51.0	25.0	27.0	230	0.5	38.8	2.5	0.90	100
1N5370B	56.0	20.0	35.0	280	0.5	42.6	2.3	1.00	93

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TYPE	Nominal Zener Voltage (Note 2)		Maximum Zener Impedance (Note 2)		Maximum Reverse Leakage Current		Ir (Note 3)	V_Z (Note 4)	I_{ZM} (Note 5)
	V_Z @ I_{ZT}	I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK} = 1μ_A	I_R @ V_R		A	V	mA
	(V)	(mA)	(Ω)	(Ω)	I_R (µA)	V_R (V)			
1N5371B	60.0	20.0	40.0	350	0.5	45.5	2.2	1.20	79.0
1N5372B	62.0	20.0	42.0	400	0.5	47.1	2.1	1.35	76.0
1N5373B	68.0	20.0	44.0	500	0.5	51.7	2.0	1.50	70.0
1N5374B	75.0	20.0	45.0	620	0.5	56.0	1.9	1.60	63.0
1N5375B	82	15.0	65.0	720	0.5	62.2	1.8	1.80	58.0
1N5376B	87	15.0	75.0	760	0.5	66.0	1.7	2.00	54.5
1N5377B	91	15.0	75.0	760	0.5	69.2	1.6	2.20	52.5
1N5378B	100	12.0	90.0	800	0.5	76.0	1.5	2.50	47.5
1N5379B	110	12.0	125.0	1000	0.5	83.6	1.4	2.50	43.0
1N5380B	120	10.0	170.0	1150	0.5	91.2	1.3	2.50	39.5
1N5381B	130	10.0	190.0	1250	0.5	98.8	1.2	2.50	36.0
1N5382B	140	8.0	230.0	1500	0.5	106.0	1.2	2.50	34.0
1N5383B	150	8.0	330.0	1500	0.5	114.0	1.1	3.00	31.6
1N5384B	160	8.0	350.0	1650	0.5	122.0	1.1	3.00	29.4
1N5385B	170	8.0	380.0	1750	0.5	129.0	1.0	3.00	28.0
1N5386B	180	5.0	430.0	1750	0.5	137.0	1.0	4.00	26.4
1N5387B	190	5.0	450.0	1850	0.5	144.0	0.9	5.00	25.0
1N5388B	200	5.0	480.0	1850	0.5	152.0	0.9	5.00	23.6

Note :

1). Tolerance and Voltage Designation : A tolerance of ± 10% with guranteed limits on only Vz, I_R, and V_F as shown in the electrical characteristics table. Units with guranteed limits on all parameters are indicated by suffix 'B' for ±5% tolerance.

2). Zener Voltage (Vz) and Impedance (Z_{ZT} & Z_{ZK}) : Test conditions for Zener Voltage and Impedance are as follows - I_Z 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 Currents (Ir) - Surge Current is specified as the maximum allowable peak, non-recurrent square-wave current with a pulse width of 8.3ms. Please refer Fig. 2 for surge current.

4). Voltage Regulation (Vz) : Test conditions for Voltage Regulation are as follows, Vz measurements are made at 10% and at 50% of the Iz max value listed in the electrical characteristics table. The test conditions are the same for both 5% and 10% tolerance devices. The test current time duration for each Vz measurement is 40+10ms. Mounting contact located as specified in Note 2.

5). Maximum Regulator Current (I_{ZM}) : The maxiimum current shown is based on the maximum voltage of a 5% type unit. Therefore, it applies only to the B-suffix devices. The actual I_{ZM} for any device may not exceed the value of 5Watts devided by the actual Vz of the device.

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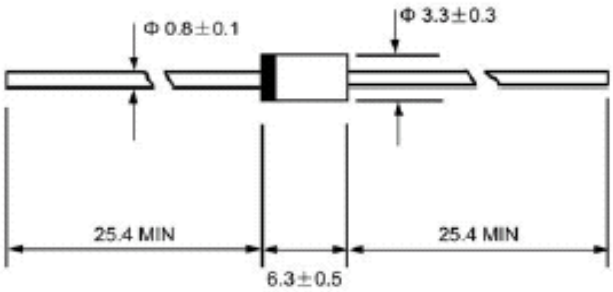

Dimensions in millimeters

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Customer Notes

Disclaimer

•The product information and the selection guides facilitate selection of the CDIL's Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished in the Data Sheet and on the CDIL Web Site/CD are believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

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