

**Features**

- Zener Voltage Range – 3.3 V to 200 V
- ESD Rating of Class 3 (>16 kV) per Human Body Model
- Surge Rating of up to 180 W @ 8.3 ms
- Maximum Limits Guaranteed on up to Six Electrical Parameters
- These devices are manufactured with a Pb-Free external lead finish only\*

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**Mechanical Characteristics**


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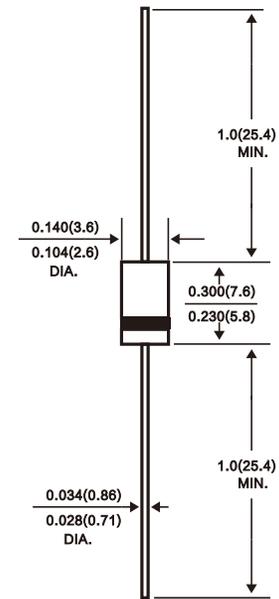
**CASE:** Void free, transfer-molded, thermosetting plastic

**FINISH:** All external surfaces are corrosion resistant and leads are readily solderable

**MAXIMUM LEAD TEMPERATURE FOR SOLDERING PURPOSES:** 230°C, 1/16 in. from the case for 10 seconds

**POLARITY:** Cathode indicated by polarity band

**MOUNTING POSITION:** Any

**DO-15(DO-204AC)**


Dimensions in inches and (millimeters)

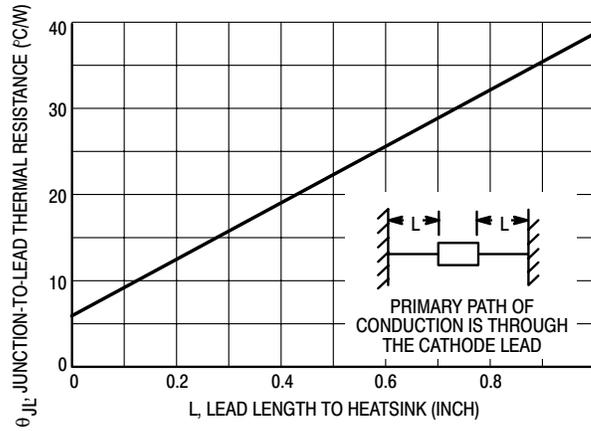
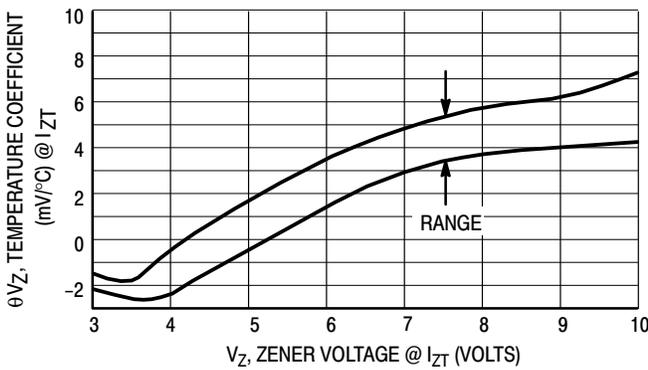
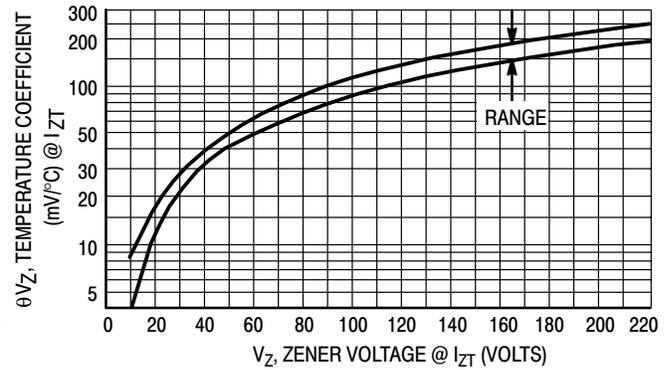
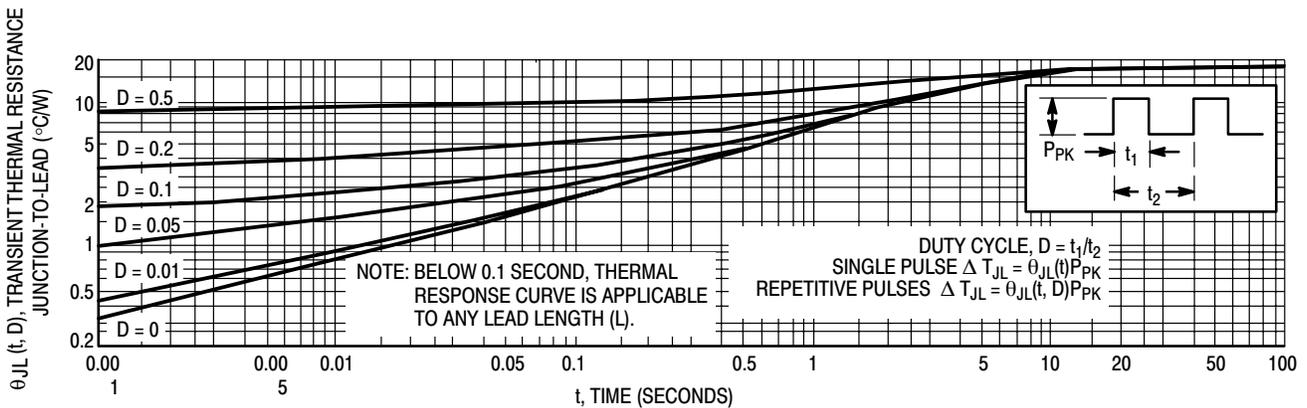
**MAXIMUM RATINGS**

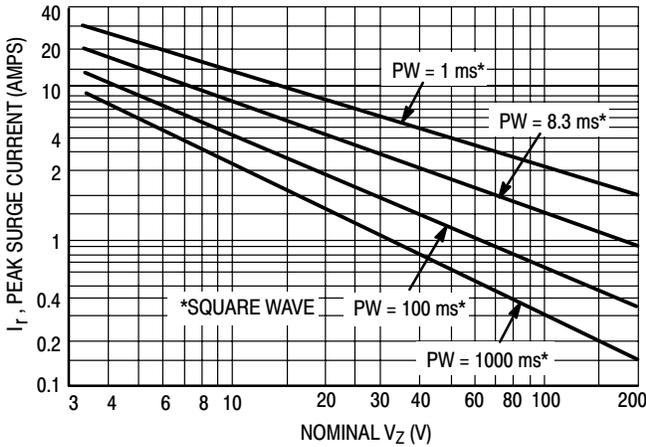
Rating	Symbol	Value	Unit
Max. Steady State Power Dissipation @ $T_L = 75^\circ\text{C}$ , Lead Length = 3/8 in Derate above $75^\circ\text{C}$	$P_D$	5	W
		40	mW/ $^\circ\text{C}$
Operating and Storage Temperature Range	$T_J, T_{stg}$	-65 to +200	$^\circ\text{C}$

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

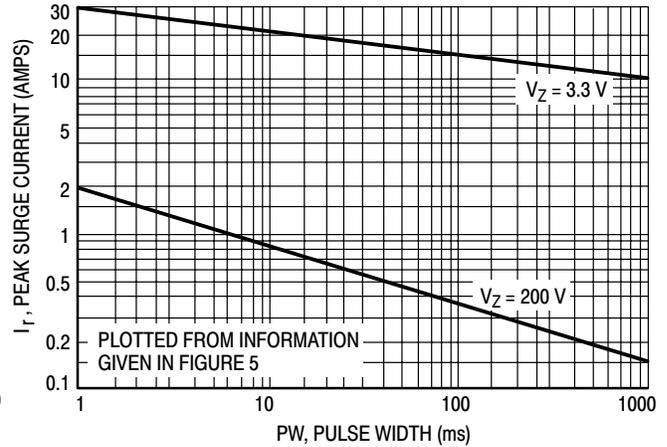
**ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted,  $V_F = 1.2\text{ V Max}$  @  $I_F = 1.0\text{ A}$  for all types)

Device	Zener Voltage (Note 2)				Zener Impedance (Note 2)			Leakage Current		$I_{R R}$ (Note 3)	$\Delta V_Z V_Z$ (Note 4)	$I_{ZM}$ (Note 5)
	$V_Z$ (Volts)			@ $I_{ZT}$	$Z_{ZT}$ @ $I_{ZT}$	$Z_{ZK}$ @ $I_{ZK}$	$I_{ZK}$	$I_R$ @ $V_R$				
	Min	Nom	Max	mA	$\Omega$	$\Omega$	mA	$\mu\text{A Max}$	Volts	A	Volts	mA
1N5333B	3.14	3.3	3.47	380	3	400	1	300	1	20	0.85	1440
1N5334B	3.42	3.6	3.78	350	2.5	500	1	150	1	18.7	0.8	1320
1N5335B	3.71	3.9	4.10	320	2	500	1	50	1	17.6	0.54	1220
1N5336B	4.09	4.3	4.52	290	2	500	1	10	1	16.4	0.49	1100
1N5337B	4.47	4.7	4.94	260	2	450	1	5	1	15.3	0.44	1010
1N5338B	4.85	5.1	5.36	240	1.5	400	1	1	1	14.4	0.39	930
1N5339B	5.32	5.6	5.88	220	1	400	1	1	2	13.4	0.25	865
1N5340B	5.70	6.0	6.30	200	1	300	1	1	3	12.7	0.19	790
1N5341B	5.89	6.2	6.51	200	1	200	1	1	3	12.4	0.1	765
1N5342B	6.46	6.8	7.14	175	1	200	1	10	5.2	11.5	0.15	700
1N5343B	7.13	7.5	7.88	175	1.5	200	1	10	5.7	10.7	0.15	630
1N5344B	7.79	8.2	8.61	150	1.5	200	1	10	6.2	10	0.2	580
1N5345B	8.27	8.7	9.14	150	2	200	1	10	6.6	9.5	0.2	545
1N5346B	8.65	9.1	9.56	150	2	150	1	7.5	6.9	9.2	0.22	520
1N5347B	9.50	10	10.5	125	2	125	1	5	7.6	8.6	0.22	475
1N5348B	10.45	11	11.55	125	2.5	125	1	5	8.4	8.0	0.25	430
1N5349B	11.4	12	12.6	100	2.5	125	1	2	9.1	7.5	0.25	395
1N5350B	12.35	13	13.65	100	2.5	100	1	1	9.9	7.0	0.25	365
1N5351B	13.3	14	14.7	100	2.5	75	1	1	10.6	6.7	0.25	340
1N5352B	14.25	15	15.75	75	2.5	75	1	1	11.5	6.3	0.25	315
1N5353B	15.2	16	16.8	75	2.5	75	1	1	12.2	6.0	0.3	295
1N5354B	16.15	17	17.85	70	2.5	75	1	0.5	12.9	5.8	0.35	280
1N5355B	17.1	18	18.9	65	2.5	75	1	0.5	13.7	5.5	0.4	264
1N5356B	18.05	19	19.95	65	3	75	1	0.5	14.4	5.3	0.4	250
1N5357B	19	20	21	65	3	75	1	0.5	15.2	5.1	0.4	237
1N5358B	20.9	22	23.1	50	3.5	75	1	0.5	16.7	4.7	0.45	216
1N5359B	22.8	24	25.2	50	3.5	100	1	0.5	18.2	4.4	0.55	198
1N5360B	23.75	25	26.25	50	4	110	1	0.5	19	4.3	0.55	190
1N5361B*	25.65	27	28.35	50	5	120	1	0.5	20.6	4.1	0.6	176
1N5362B	26.6	28	29.4	50	6	130	1	0.5	21.2	3.9	0.6	170
1N5363B	28.5	30	31.5	40	8	140	1	0.5	22.8	3.7	0.6	158
1N5364B	31.35	33	34.65	40	10	150	1	0.5	25.1	3.5	0.6	144
1N5365B	34.2	36	37.8	30	11	160	1	0.5	27.4	3.5	0.65	132
1N5366B	37.05	39	40.95	30	14	170	1	0.5	29.7	3.1	0.65	122
1N5367B	40.85	43	45.15	30	20	190	1	0.5	32.7	2.8	0.7	110
1N5368B	44.65	47	49.35	25	25	210	1	0.5	35.8	2.7	0.8	100
1N5369B	48.45	51	53.55	25	27	230	1	0.5	38.8	2.5	0.9	93
1N5370B	53.2	56	58.8	20	35	280	1	0.5	42.6	2.3	1.0	86
1N5371B	57	60	63	20	40	350	1	0.5	45.5	2.2	1.2	79
1N5372B	58.9	62	65.1	20	42	400	1	0.5	47.1	2.1	1.35	76
1N5373B	64.6	68	71.4	20	44	500	1	0.5	51.7	2.0	1.52	70
1N5374B	71.25	75	78.75	20	45	620	1	0.5	56	1.9	1.6	63
1N5375B	77.9	82	86.1	15	65	720	1	0.5	62.2	1.8	1.8	58
1N5376B	82.65	87	91.35	15	75	760	1	0.5	66	1.7	2.0	54.5
1N5377B	86.45	91	95.55	15	75	760	1	0.5	69.2	1.6	2.2	52.5
1N5378B	95	100	105	12	90	800	1	0.5	76	1.5	2.5	47.5
1N5379B	104.5	110	115.5	12	125	1000	1	0.5	83.6	1.4	2.5	43
1N5380B	114	120	126	10	170	1150	1	0.5	91.2	1.3	2.5	39.5
1N5381B	123.5	130	136.5	10	190	1250	1	0.5	98.8	1.2	2.5	36.6
1N5382B	133	140	147	8	230	1500	1	0.5	106	1.2	2.5	34
1N5383B	142.5	150	157.5	8	330	1500	1	0.5	114	1.1	3.0	31.6
1N5384B	152	160	168	8	350	1650	1	0.5	122	1.1	3.0	29.4
1N5385B	161.5	170	178.5	8	380	1750	1	0.5	129	1.0	3.0	28
1N5386B	171	180	189	5	430	1750	1	0.5	137	1.0	4.0	26.4
1N5387B	180.5	190	199.5	5	450	1850	1	0.5	144	0.9	5.0	25
1N5388B	190	200	210	5	480	1850	1	0.5	152	0.9	5.0	23.6

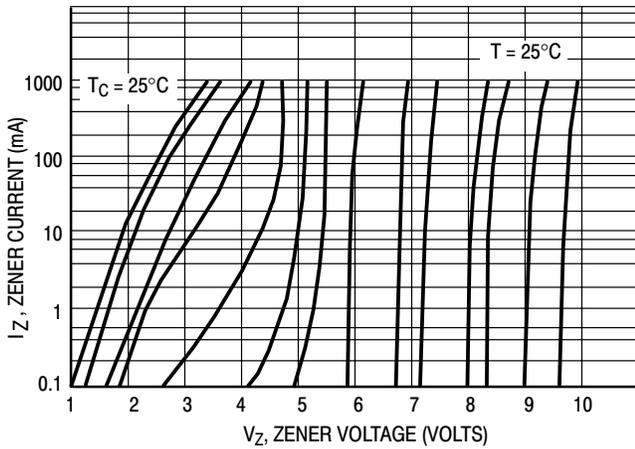

**Figure 1. Typical Thermal Resistance**
**TEMPERATURE COEFFICIENTS**

**Figure 2. Temperature Coefficient-Range for Units 3 to 10 Volts**

**Figure 3. Temperature Coefficient-Range for Units 10 to 220 Volts**

**Figure 4. Typical Thermal Response  
L, Lead Length = 3/8 Inch**



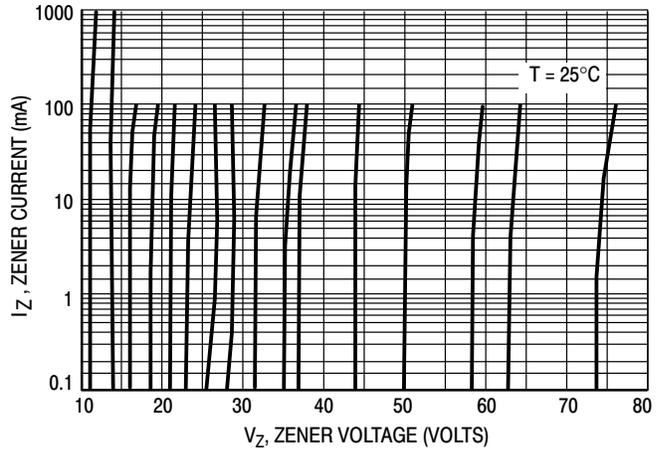
**Figure 5. Maximum Non-Repetitive Surge Current versus Nominal Zener Voltage (See Note 3)**



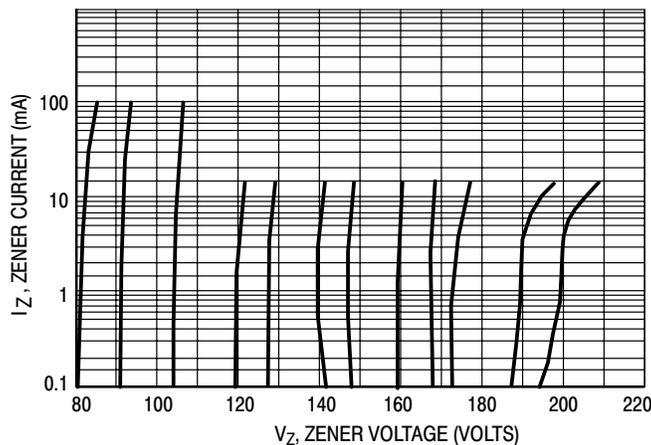
**Figure 6. Peak Surge Current versus Pulse Width (See Note 3)**



**Figure 7. Zener Voltage versus Zener Current Vz = 3.3 thru 10 Volts**



**Figure 8. Zener Voltage versus Zener Current Vz = 11 thru 75 Volts**



**Figure 9. Zener Voltage versus Zener Current Vz = 82 thru 200 Volts**