

DO-15 ZENER DIODES

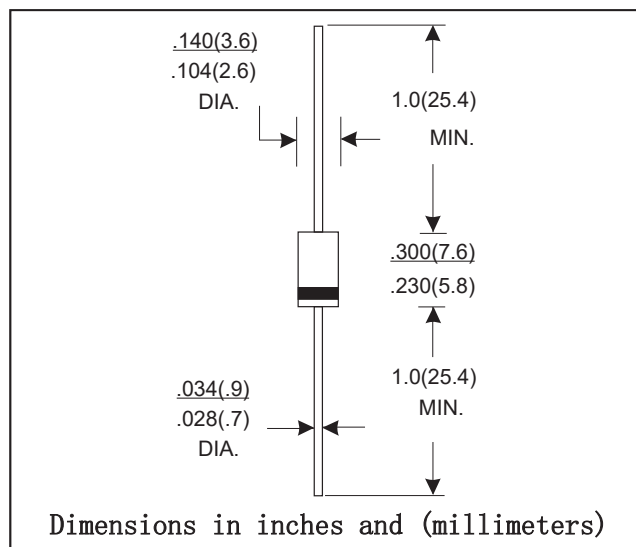
ZENER VOLTAGE RANGE: 3.3 --- 200V PEAK PULSE POWER:5000mW

FEATURES

- Low Reverse Leakage
- Low Zener Impedance
- High Stability and High Reliability

MECHANICAL DATA

- Case: DO-15
- Molding material: UL94V-O approved flame retardant epoxy
- Lead: Plating Solderability in accordance with MIL-STD-202E, Method 208C



MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at 25 C ambient temperature unless otherwise specified

Parameters	SYMBOLS	VALUE	UNITS
Zener current	I_Z MAX	See table	mA
Dissipated power @TL=75°C (Note 1)	P_t	5	W
Forward voltage @IF=1.0A	V_F	1.2	V
Thermal impedance (knot to the surrounding environment, note 1)	$R_{\theta(ja)}$	20	°C/W
Use and storage temperature range (patch)	T_J, T_{STG}	-55~+150	°C
Use and storage temperature range (axial)		-55~+175	

Note: The temperature at the 9.5mm (axial) lead from the tube is set to the ambient temperature.

Electrical Specification (TA=25°C unless otherwise specified)

Model (Note 1)	Zener voltage	Measuring current	Maximum Zener impedance			Maximum reverse leakage current		Maximum DC Zener current @V(BR)
	V _{Z@I_{ZT}}	I _{ZT}	Z _{ZT} @I _{ZT} (Note2)	Z _{ZK} @I _{ZK} (Note 3)	I _{ZK}	I _R @V _R	@V _R	I _{ZM} @50°C (注释 4)
	V	mA	Ω	Ω	mA	μA	V	mA
1N5333	3.3	380	3	400	1	300	1.0	1440
1N5334	3.6	350	2.5	500	1	150	1.0	1320
1N5335	3.9	320	2	500	1	50	1.0	1220
1N5336	4.3	290	2	500	1	10	1.0	1100
1N5337	4.7	260	2	450	1	5	1.0	1010
1N5338	5.1	240	1.5	400	1	1	1.0	930
1N5339	5.6	220	1	400	1	1	2.0	856
1N5340	6.0	200	1	300	1	1	3.0	790
1N5341	6.2	200	1	200	1	1	4.0	765
1N5342	6.8	175	1	200	1	10	4.9	700
1N5343	7.5	175	1.5	200	1	10	5.4	630
1N5344	8.2	150	1.5	200	1	10	5.9	580
1N5345	8.7	150	2	200	1	10	6.3	545
1N5346	9.1	150	2	150	1	7.5	6.6	520
1N5347	10	125	2	125	1	5	7.2	475
1N5348	11	125	2.5	125	1	5	8	430
1N5349	12	100	2.5	125	1	2	8.6	395
1N5350	13	100	2.5	100	1	1	9.4	365
1N5351	14	100	2.5	75	1	1	10.1	340
1N5352	15	75	2.5	75	1	1	10.8	315
1N5353	16	75	2.5	75	1	1	11.5	295
1N5354	17	70	2.5	75	1	0.5	12.2	280
1N5355	18	65	2.5	75	1	0.5	13	265
1N5356	19	65	3	75	1	0.5	13.7	250
1N5357	20	50	3	75	1	0.5	14.4	237
1N5358	22	50	3.5	75	1	0.5	15.8	216
1N5359	24	50	3.5	100	1	0.5	17.3	198
1N5360	25	50	4	110	1	0.5	18	190
1N5361	27	50	5	120	1	0.5	19.4	176
1N5362	28	50	6	130	1	0.5	20.1	170
1N5363	30	40	8	140	1	0.5	21.6	158
1N5364	33	40	10	150	1	0.5	23.8	144
1N5365	36	30	11	160	1	0.5	25.9	132
1N5366	39	30	14	170	1	0.5	28.1	122
1N5367	43	30	20	190	1	0.5	31	110
1N5368	47	25	25	210	1	0.5	33.8	100
1N5369	51	25	27	230	1	0.5	36.7	93
1N5370	56	20	35	280	1	0.5	40.3	86
1N5371	60	20	40	350	1	0.5	43	79
1N5372	62	20	42	400	1	0.5	44.6	76
1N5373	68	20	44	500	1	0.5	49	70
1N5374	75	20	45	620	1	0.5	54	63

Electrical Specification (T_A=@25°C unless otherwise specified)

Model (Note 1)	Zener voltage	Measuring current	Maximum Zener impedance			Maximum reverse leakage current		Maximum DC Zener current @V(BR)
	V _{Z@I_{ZT}}	I _{ZT}	Z _{ZT} @I _{ZT} (Note2)	Z _{ZK} @I _{ZK} (Note 3)	I _{ZK}	I _R @V _R	@V _R	I _{ZM} @50°C (Note 4)
	V	mA	Ω	Ω	mA	μ A	V	mA
1N5375	82	15	65	720	1	0.5	59	58
1N5376	87	15	75	760	1	0.5	63	54.5
1N5377	91	15	75	760	1	0.5	65.5	52.5
1N5378	100	12	90	800	1	0.5	72	47.5
1N5379	110	12	125	1000	1	0.5	79.2	43
1N5380	120	10	170	1150	1	0.5	86.4	39.5
1N5381	130	10	190	1250	1	0.5	93.2	36.6
1N5382	140	8	230	1500	1	0.5	101	34
1N5383	150	8	330	1500	1	0.5	108	31.6
1N5384	160	8	350	1650	1	0.5	115	29.4
1N5385	170	8	380	1750	1	0.5	122	28
1N5386	180	5	430	1750	1	0.5	130	26.4
1N5387	190	5	450	1850	1	0.5	137	25
1N5388	200	5	480	1850	1	0.5	144	23.6

- Note :**
1. The standard type Zener voltage deviation is 10%; the special type with the subscript "B" is added with a deviation of 5%.
 2. For Zener impedance, I (ac rms) = 10% I_{ZT}
 3. For Zener knee impedance, I (ac rms) = 10% I_{ZK}
 4. The maximum Zener current value here is not absolute. In practical steady state applications, the product of voltage and current should not exceed the rated power value.

RATINGS AND CHARACTERISTIC CURVES

1N5333B Series

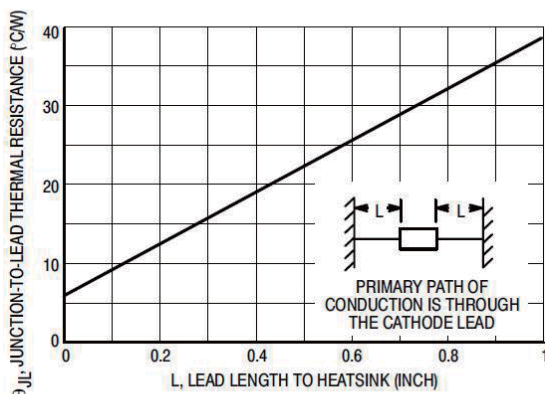


Figure 1. Typical Thermal Resistance

TEMPERATURE COEFFICIENTS

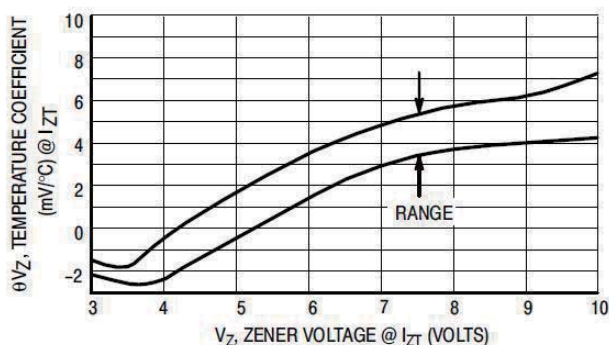


Figure 2. Temperature Coefficient-Range for Units 3 to 10 Volts

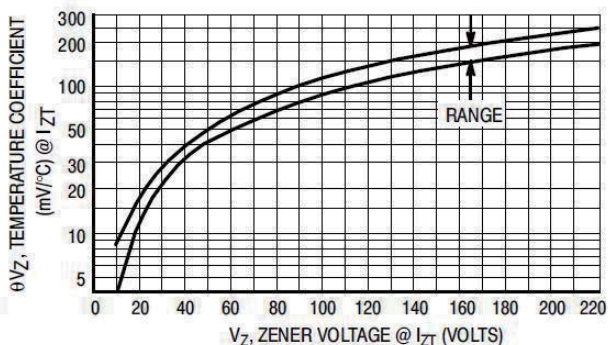


Figure 3. Temperature Coefficient-Range for Units 10 to 220 Volts

1N5333B Series

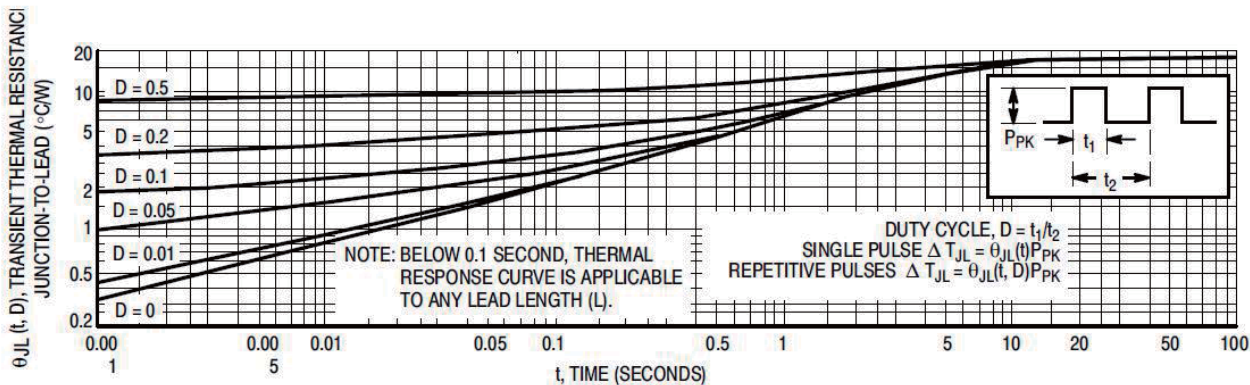


Figure 4. Typical Thermal Response
L, Lead Length = 3/8 Inch

RATINGS AND CHARACTERISTIC CURVES

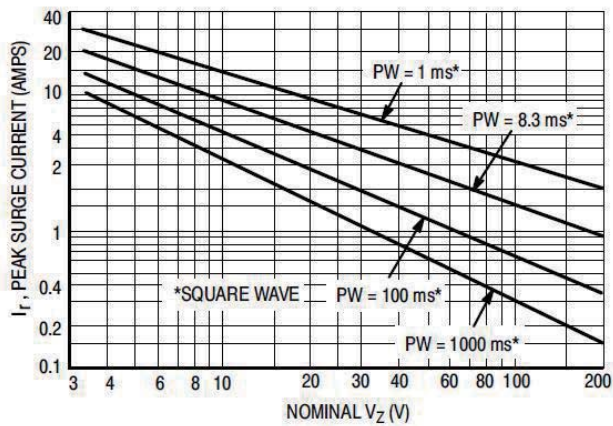


Figure 5. Maximum Non-Repetitive Surge Current versus Nominal Zener Voltage

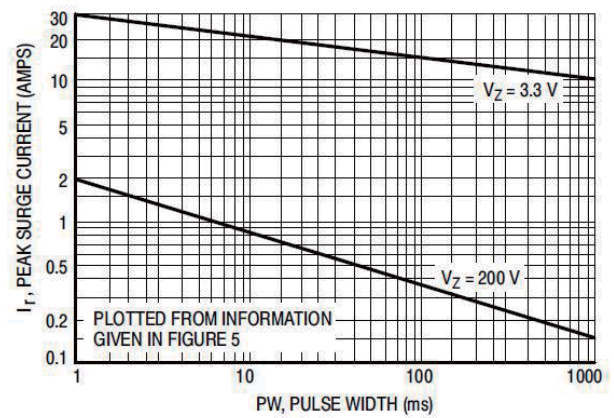


Figure 6. Peak Surge Current versus Pulse Width

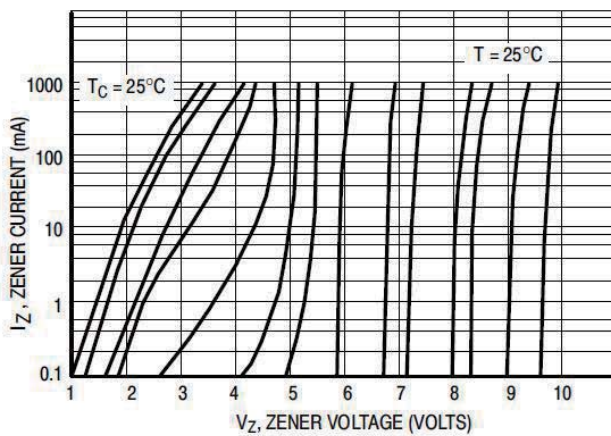


Figure 7. Zener Voltage versus Zener Current
 $V_Z = 3.3$ thru 10 Volts

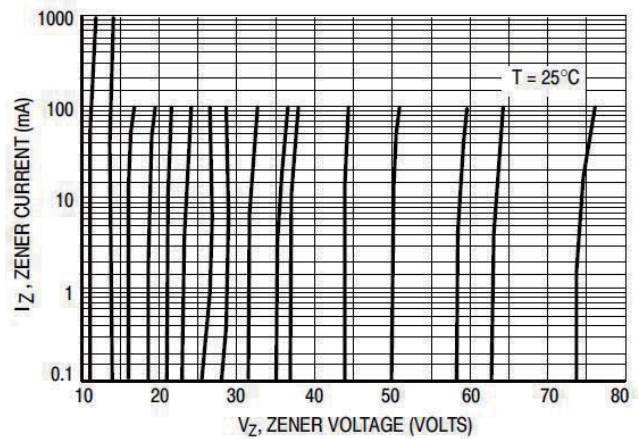


Figure 8. Zener Voltage versus Zener Current
 $V_Z = 11$ thru 75 Volts

1N5333B Series

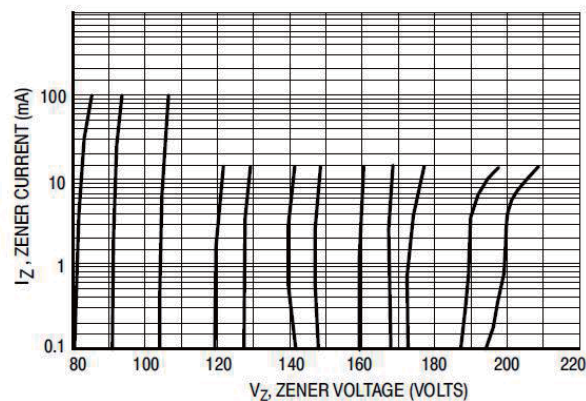


Figure 9. Zener Voltage versus Zener Current
 $V_Z = 82$ thru 200 Volts