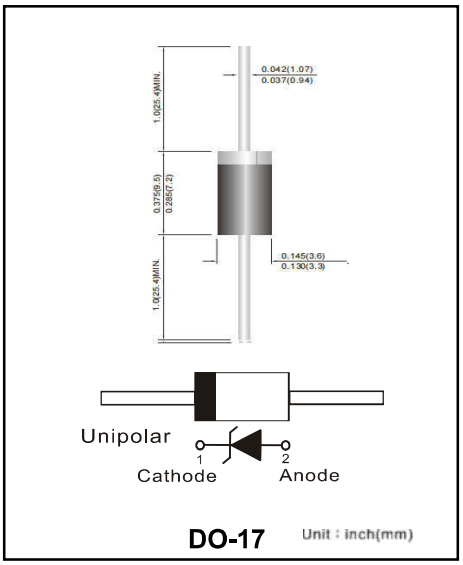
Zener Diodes

Reverse Voltage – 3.3 to 200V
Power Dissipation - 5 W



Features

- Low profile package
- Built-in strain relief
- Low inductance
- Typical I_D less than 1.0μA above 13V
- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- In compliance with EU RoHS 2002/95/EC directives

Mechanical Data

- Case: JEDEC DO-17 molded plastic
- Terminals: Axial leads, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Weight: 0.04 ounce, 1.12 gram

Maximum Ratings And Electrical Characteristics

Ratings at 25 °C ambient temperature unless otherwise specified.

Parameter	Symbols	Value	Units
DC Power Dissipation at TL = 75 °C Lead Length = 3/8" Derate above 75°C	PD	5.0	Watts
		40	mW/°C
Junction Temperature Range	T_j	-65 ~ +200	°C
Storage Temperature Range	T_{stg}	-65 ~ +200	°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted, V_F = 1.2 Max @ I_F = 1 A for all types)

JEDEC Type No. (Note 1)	Nominal Zener Voltage V_Z @ I_{ZT} Volts (Note 2)	Test Current I_{ZT} mA	Max Zener Impedance		Max Reverse Leakage Current		Max Surge Current i_r, Amps (Note 3)	Max Voltage Regulation ΔV_Z, Volt (Note 4)	Maximum Regulator Current I_{ZM} mA (Note 5)
			Z_{ZT} @ I_{ZT} Ohms (Note 2)	Z_{ZK} @ I_{ZK} = 1 mA Ohms (Note 2)	I_R μA	@ V_R Volts			
1N5333BE	*3.3*	*380*	*3*	*400*	*300*	*1*	*20*	*0.85*	*1440*
1N5334BE	3.6	350	2.5	500	150	1	18.7	0.8	1320
1N5335BE	3.9	320	2	500	50	1	17.6	0.54	1220
1N5336BE	4.3	290	2	500	10	1	16.4	0.49	1100
1N5337BE	*4.7*	*260*	*2*	*450*	*5*	*1*	*15.3*	*0.44*	*1010*
1N5338BE	*5.1*	*240*	*1.5*	*400*	*1*	*1*	*14.4*	*0.39*	*930*
1N5339BE	*5.6*	*220*	*1*	*400*	*1*	*2*	*13.4*	*0.25*	*865*
1N5340BE	6	200	1	300	1	3	12.7	0.19	790
1N5341BE	*6.2*	*200*	*1*	*200*	*1*	*3*	*12.4*	*0.1*	*765*
1N5342BE	*6.8*	*175*	*1*	*200*	*10*	*5.2*	*11.5*	*0.15*	*700*
1N5343BE	7.5	175	1.5	200	10	5.7	10.7	0.15	630
1N5344BE	8.2	150	1.5	200	10	6.2	10	0.2	580
1N5345BE	8.7	150	2	200	10	6.6	9.5	0.2	545
1N5346BE	9.1	150	2	150	7.5	6.9	9.2	0.22	520
1N5347BE	*10*	*125*	*2*	*125*	*5*	*7.6*	*8.6*	*0.22*	*475*
1N5348BE	11	125	2.5	125	5	8.4	8	0.25	430
1N5349BE	*12*	*100*	*2.5*	*125*	*2*	*9.1*	*7.5*	*0.25*	*395*
1N5350BE	*13*	*100*	*2.5*	*100*	*1*	*9.9*	*7*	*0.25*	*365*
1N5351BE	14	100	2.5	75	1	10.6	6.7	0.25	340
1N5352BE	*15*	*75*	*2.5*	*75*	*1*	*11.5*	*6.3*	*0.25*	*315*
1N5353BE	*16*	*75*	*2.5*	*75*	*1*	*12.2*	*6*	*0.3*	*295*
1N5354BE	17	70	2.5	75	0.5	12.9	5.8	0.35	280
1N5355BE	18	65	2.5	75	0.5	13.7	5.5	0.4	265
1N5356BE	19	65	3	75	0.5	14.4	5.3	0.4	250
1N5357BE	20	65	3	75	0.5	15.2	5.1	0.4	237
1N5358BE	*22*	*50*	*3.5*	*75*	*0.5*	*16.7*	*4.7*	*0.45*	*216*
1N5359BE	*24*	*50*	*3.5*	*100*	*0.5*	*18.2*	*4.4*	*0.55*	*198*
1N5360BE	25	50	4	110	0.5	19	4.3	0.55	190
1N5361BE	*27*	*50*	*5*	*120*	*0.5*	*20.6*	*4.1*	*0.6*	*176*
1N5362BE	28	50	6	130	0.5	21.2	3.9	0.6	170
1N5363BE	30	40	8	140	0.5	22.8	3.7	0.6	158
1N5364BE	33	40	10	150	0.5	25.1	3.5	0.6	144
1N5365BE	*36*	*30*	*11*	*160*	*0.5*	*27.4*	*3.3*	*0.65*	*132*
1N5366BE	39	30	14	170	0.5	29.7	3.1	0.65	122
1N5367BE	43	30	20	190	0.5	32.7	2.8	0.7	110
1N5368BE	*47*	*25*	*25*	*210*	*0.5*	*35.8*	*2.7*	*0.8*	*100*
1N5369BE	51	25	27	230	0.5	38.8	2.5	0.9	93
1N5370BE	56	20	35	280	0.5	42.6	2.3	1	86
1N5371BE	60	20	40	350	0.5	42.5	2.2	1.2	79
1N5372BE	62	20	42	400	0.5	47.1	2.1	1.35	76
1N5373BE	68	20	44	500	0.5	51.7	2	1.5	70

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted, V_F = 1.2 Max @ I_F = 1 A for all types)

JEDEC Type No. (Note 1)	Nominal Zener Voltage V_Z @ I_{ZT} Volts (Note 2)	Test Current I_{ZT} mA	Max Zener Impedance		Max Reverse Leakage Current		Max Surge Current i_r, Amps (Note 3)	Max Voltage Regulation ΔV_Z, Volt (Note 4)	Maximum Regulator Current I_{ZM} mA (Note 5)
			Z_{ZT} @ I_{ZT} Ohms (Note 2)	Z_{ZK} @ I_{ZK} = 1 mA Ohms (Note 2)	I_R µA	@ V_R Volts			
1N5374BE	75	20	45	620	0.5	56	1.9	1.6	63
1N5375BE	82	15	65	720	0.5	62.2	1.8	1.8	58
1N5376BE	87	15	75	760	0.5	66	1.7	2	54.5
1N5377BE	91	15	75	760	0.5	69.2	1.6	2.2	52.5
1N5378BE	100	12	90	800	0.5	76	1.5	2.5	47.5
1N5379BE	110	12	125	1000	0.5	83.6	1.4	2.5	43
1N5380BE	120	10	170	1150	0.5	91.2	1.3	2.5	39.5
1N5381BE	130	10	190	1250	0.5	98.8	1.2	2.5	36.6
1N5382BE	140	8	230	1500	0.5	106	1.2	2.5	34
1N5383BE	*150*	*8*	*330*	*1500*	*0.5*	*114*	*1.1*	*3*	*31.6*
1N5384BE	160	8	350	1650	0.5	122	1.1	3	29.4
1N5385BE	170	8	380	1750	0.5	129	1	3	28
1N5386BE	180	5	430	1750	0.5	137	1	4	26.4
1N5387BE	190	5	450	1850	0.5	144	0.9	5	25
1N5388BE	200	5	480	1850	0.5	152	0.9	5	23.6

TEMPERATURE COEFFICIENTS

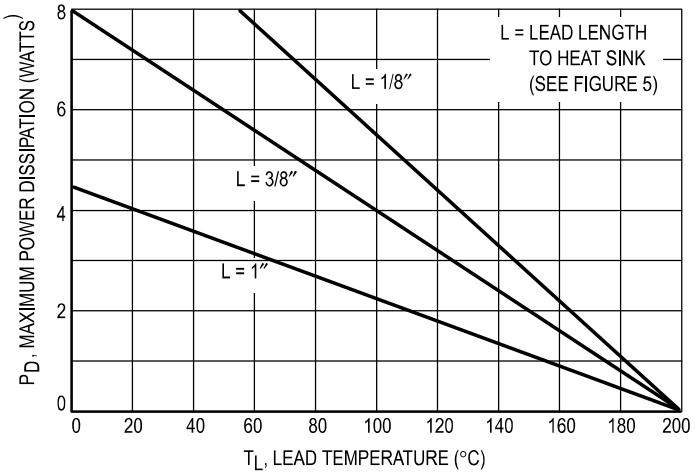


Figure 1. Power Temperature Derating Curve

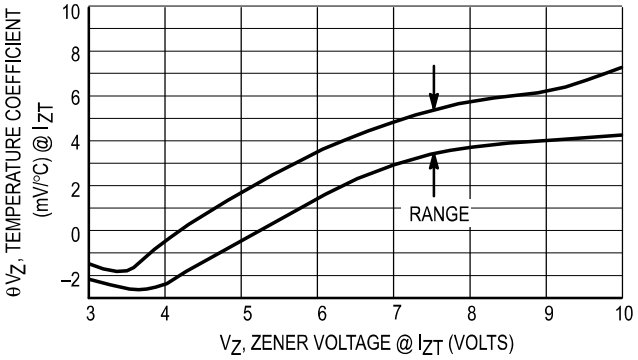


Figure 2. Temperature Coefficient-Range for Units 3 to 10 Volts

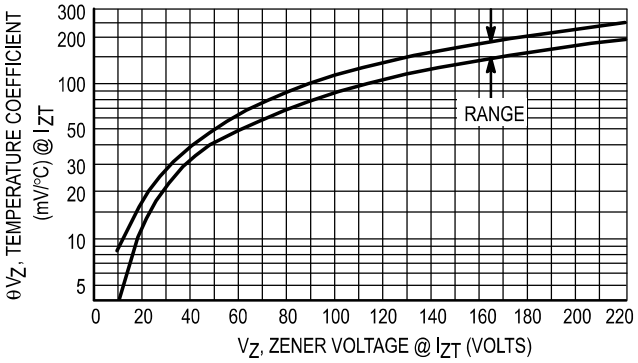


Figure 3. Temperature Coefficient-Range for Units 10 to 220 Volts

TEMPERATURE COEFFICIENTS

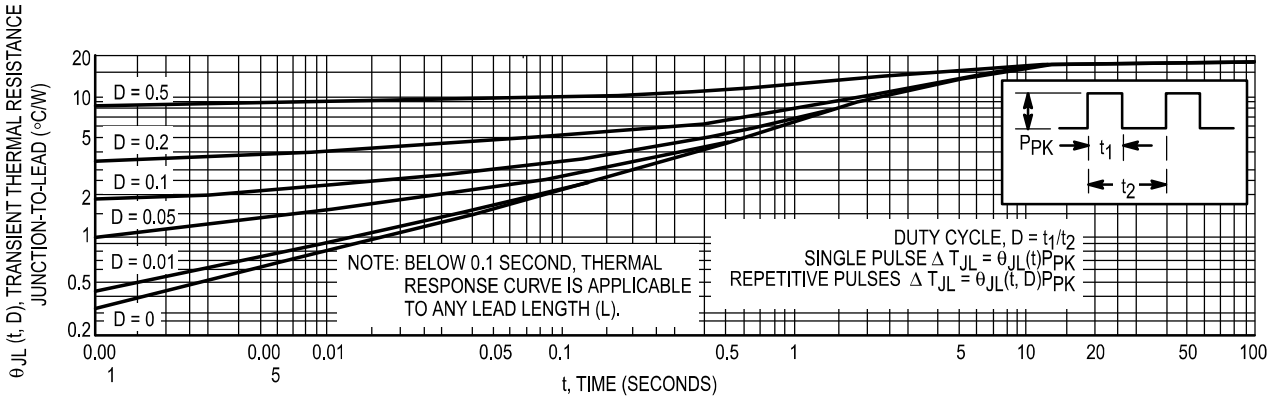


Figure 4. Typical Thermal Response
L, Lead Length = 3/8 Inch

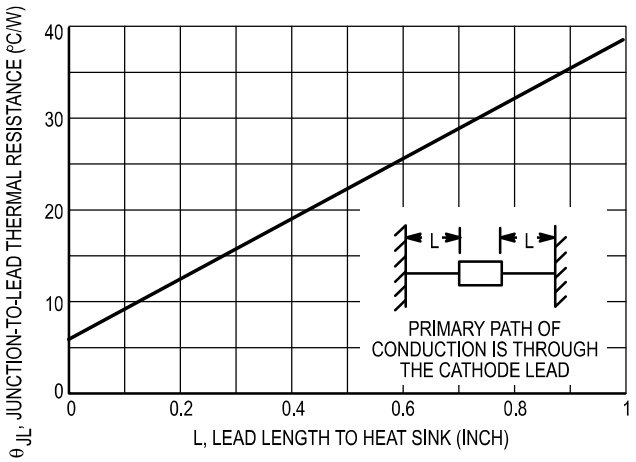


Figure 5. Typical Thermal Resistance

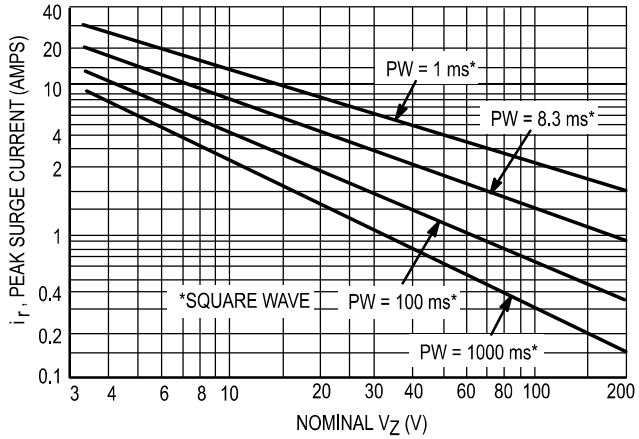


Figure 6. Maximum Non-Repetitive Surge Current versus Nominal Zener Voltage (See Note 3)

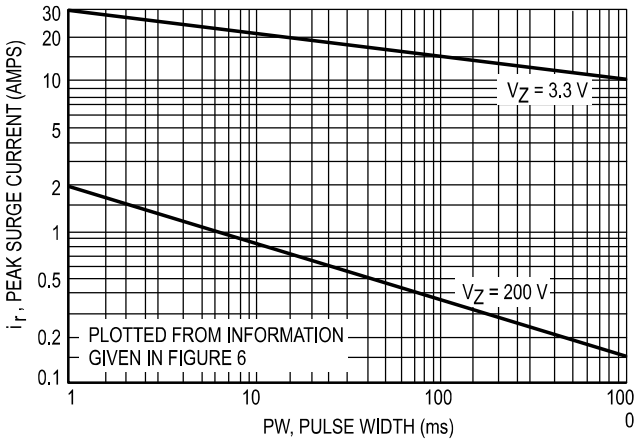


Figure 7. Peak Surge Current versus Pulse Width

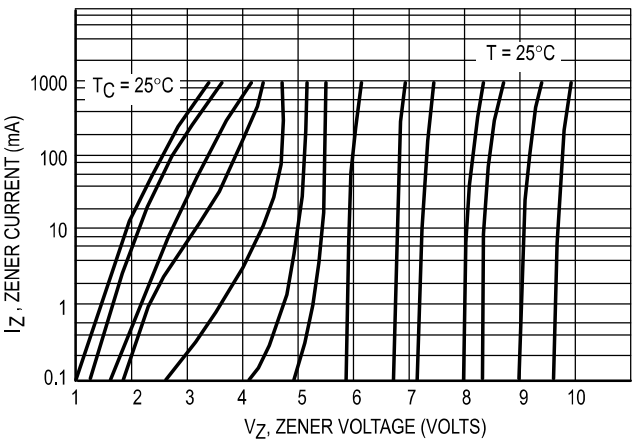
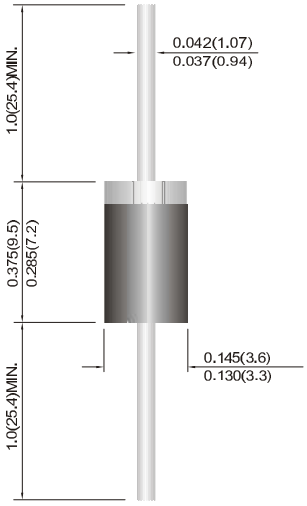


Figure 8. Zener Voltage versus Zener Current VZ = 3.3 thru 10 Volts

Devices listed in bold, italic are Motorola preferred devices.

Summary of Packing Options



Package	Packing Description	Packing Quantity	Industry Standard
DO-17	box	500	EIA-481-1
DO-17	Tape	2500	EIA-481-1