

2EZ3.6D5 THRU 2EZ200D5

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2EZ3.6D5 THRU 2EZ200D5

2000mW Axial Lead Zener Diodes - 3.6V-200V

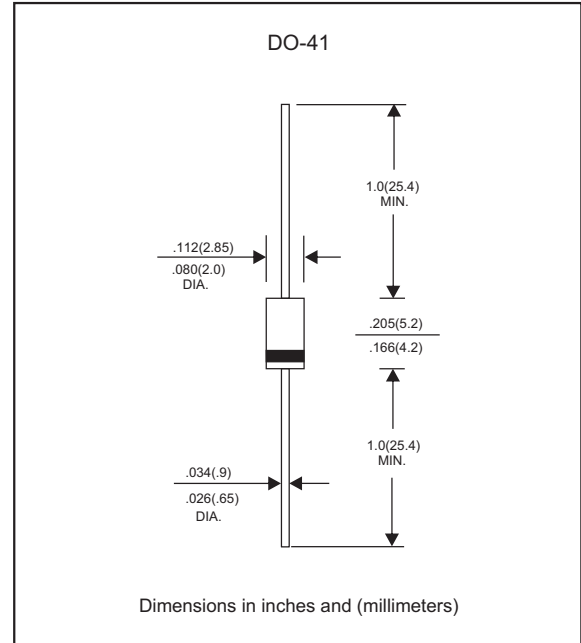
Features

- High reliability
- Very sharp reverse characteristic
- Wide zener reverse voltage range 3.6V to 200V.
- Low reverse current level
- Lead-free parts meet environmental standards of MIL-STD-19500 /228

Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : Molded plastic, DO-41
- Lead : Axial leads, solderable per MIL-STD-202, Method 208 guaranteed
- Polarity: Color band denotes cathode end
- Mounting Position : Any
- Weight : Approximated 0.33 gram

Package outline

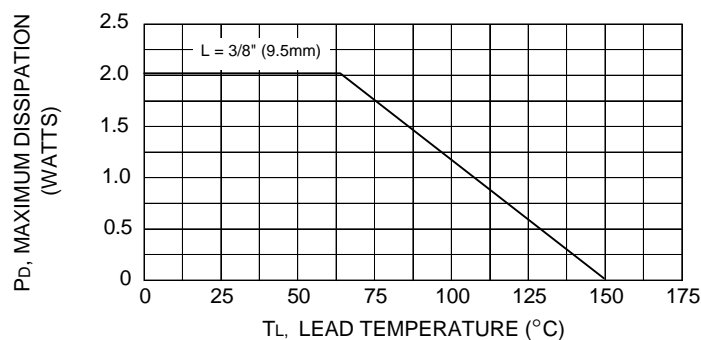


MAXIMUM RATINGS (at $T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 200 \text{ mA}$	V_F			1.20	V
Power dissipation	$T_{amb} \leq 50^\circ\text{C}$	P_D			2.0	W
Thermal resistance	Junction ambient	$R_{\theta JA}$		60		$^\circ\text{C/W}$
Operating junction temperature		T_J			+150	$^\circ\text{C}$
Storage temperature range		T_{STG}	-65		+175	$^\circ\text{C}$

These ratings are limiting values above which the serviceability of the diode may be impaired

Fig. A POWER TEMPERATURE DERATING CURVE



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ELECTRICAL CHARACTERISTICS

Rating at = 25 °C ambient temperature unless otherwise specified

TYPE	Nominal Zener Voltage		Maximum Zener Impedance			Maximum Reverse Leakage Current		Maximum DC Zener Current
	Vz @ IzT	IzT	ZzT @ IzT	Zzk @ Izk	Izk	IR @ VR		IzM
	(V)	(mA)	(Ω)	(Ω)	(mA)	(μA)	(V)	(mA)
2EZ3.6D5	3.6	139	5.0	400	1.0	80	1.0	504
2EZ3.9D5	3.9	128	5.0	400	1.0	30	1.0	468
2EZ4.3D5	4.3	116	4.5	400	1.0	20	1.0	434
2EZ4.7D5	4.7	106	4.5	550	1.0	5.0	1.0	386
2EZ5.1D5	5.1	98.0	3.5	600	1.0	5.0	1.0	356
2EZ5.6D5	5.6	89.5	2.5	500	1.0	5.0	2.0	324
2EZ6.2D5	6.2	80.5	1.5	700	1.0	5.0	3.0	292
2EZ6.8D5	6.8	73.5	2.0	700	1.0	5.0	4.0	266
2EZ7.5D5	7.5	66.5	2.0	700	0.5	50	5.0	242
2EZ8.2D5	8.2	61.0	2.3	700	0.5	50	6.0	220
2EZ9.1D5	9.1	55.0	2.5	700	0.5	50	7.0	200
2EZ10D5	10	50.0	3.5	700	0.25	50	7.6	182
2EZ11D5	11	45.5	4.0	700	0.25	50	8.4	166
2EZ12D5	12	41.5	4.5	700	0.25	1.0	9.1	152
2EZ13D5	13	38.5	5.0	700	0.25	0.5	9.9	138
2EZ14D5	14	35.7	5.5	700	0.25	0.5	10.6	130
2EZ15D5	15	33.4	7.0	700	0.25	0.5	11.4	122
2EZ16D5	16	31.2	8.0	700	0.25	0.5	12.2	114
2EZ17D5	17	29.4	9.0	750	0.25	0.5	13.0	107
2EZ18D5	18	27.8	10	750	0.25	0.5	13.7	100
2EZ19D5	19	26.3	11	750	0.25	0.5	14.4	95
2EZ20D5	20	25.0	11	750	0.25	0.5	15.2	90
2EZ22D5	22	22.8	12	750	0.25	0.5	16.7	82
2EZ24D5	24	20.8	13	750	0.25	0.5	18.2	76
2EZ27D5	27	18.5	18	750	0.25	0.5	20.6	68
2EZ30D5	30	16.6	20	1000	0.25	0.5	22.5	60
2EZ33D5	33	15.1	23	1000	0.25	0.5	25.1	55
2EZ36D5	36	13.9	25	1000	0.25	0.5	27.4	50
2EZ39D5	39	12.8	30	1000	0.25	0.5	29.7	47
2EZ43D5	43	11.6	35	1500	0.25	0.5	32.7	43
2EZ47D5	47	10.6	40	1500	0.25	0.5	35.8	39
2EZ51D5	51	9.8	48	1500	0.25	0.5	38.8	36
2EZ56D5	56	9.0	55	2000	0.25	0.5	42.6	32
2EZ62D5	62	8.1	60	2000	0.25	0.5	47.1	29
2EZ68D5	68	7.4	75	2000	0.25	0.5	51.7	27
2EZ75D5	75	6.7	90	2000	0.25	0.5	56.0	24
2EZ82D5	82	6.1	100	3000	0.25	0.5	62.2	22
2EZ91D5	91	5.5	125	3000	0.25	0.5	69.2	20
2EZ100D5	100	5.0	175	3000	0.25	0.5	76.0	18
2EZ110D5	110	4.5	250	4000	0.25	0.5	83.6	17
2EZ120D5	120	4.2	325	4500	0.25	0.5	91.2	15
2EZ130D5	130	3.8	400	5000	0.25	0.5	98.8	14
2EZ140D5	140	3.6	500	5500	0.25	0.5	106.4	13
2EZ150D5	150	3.3	575	6000	0.25	0.5	114.0	12
2EZ160D5	160	3.1	650	6500	0.25	0.5	121.6	11
2EZ170D5	170	2.9	675	7000	0.25	0.5	130.4	11
2EZ180D5	180	2.8	725	7000	0.25	0.5	136.8	10
2EZ190D5	190	2.6	825	8000	0.25	0.5	144.8	10
2EZ200D5	200	2.5	900	8000	0.25	0.5	152.0	9.0

Note: (1) Suffix " 5 " indicates $\pm 5.0\%$ tolerance, suffix " 10 " indicates $\pm 10.0\%$ tolerance.
(2) " EZ " will be omitted in marking on the diode

Rating and characteristic curves (2EZ3.6D5 THRU 2EZ200D5)

FIG. 1-TYPICAL THERMAL RESPONSE L

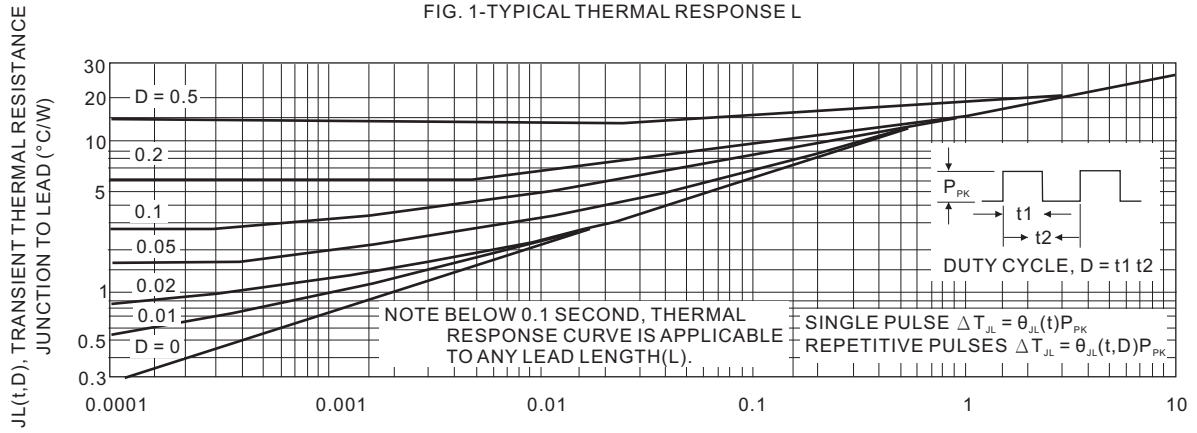


FIG. 2-MAXIMUM SURGE POWER

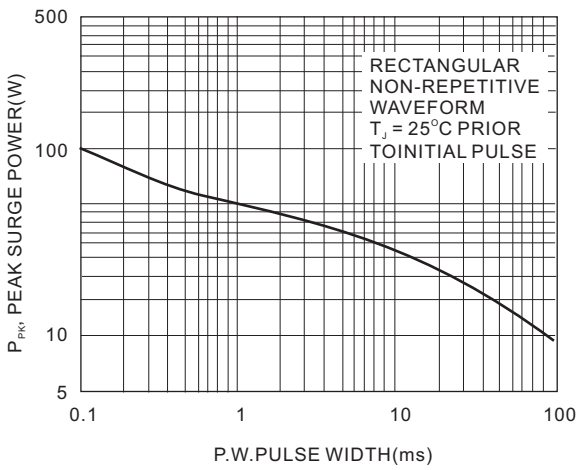


FIG. 3-TYPICAL REVERSE LEAKAGE

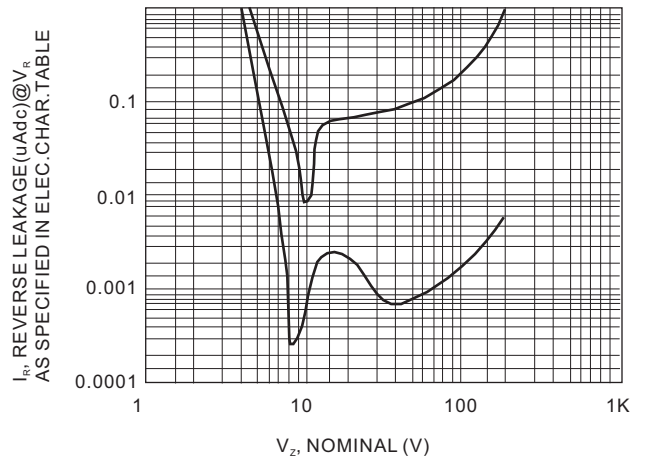


FIG. 4-UNITS TO 12 VOLTS

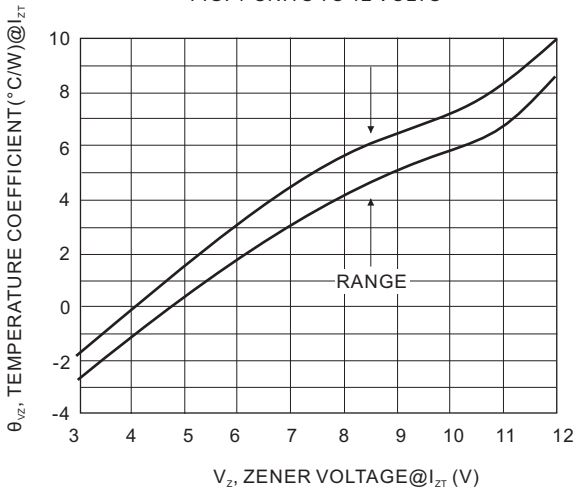
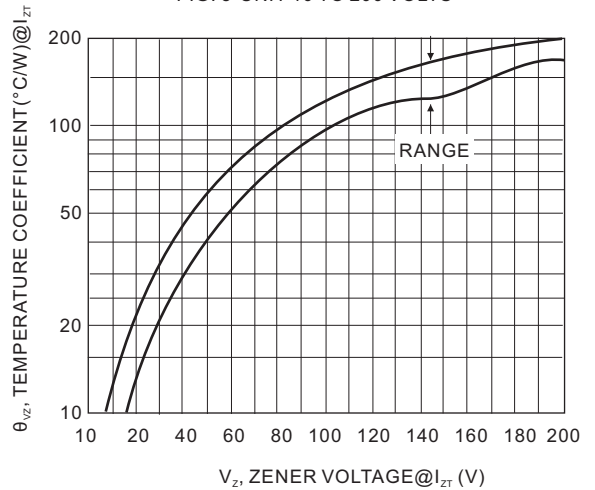




FIG. 5-UNIT 10 TO 200 VOLTS



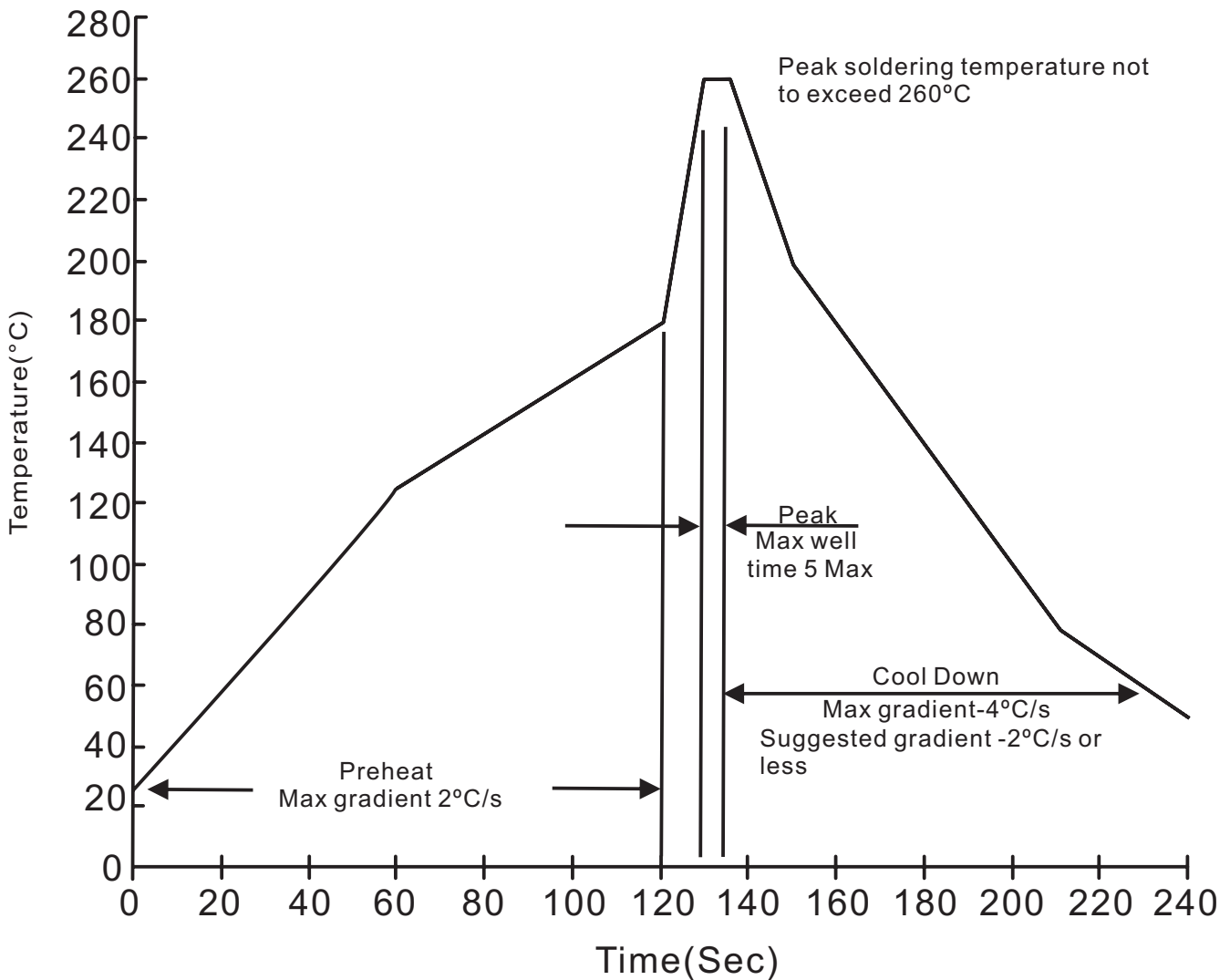
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Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Suggested thermal profiles for soldering processes

1. Lead free temperature profile wave-soldering



2EZ3.6D5 THRU 2EZ200D5**High reliability test capabilities**

Item Test	Conditions	Reference
1. Solder Resistance	at 260±5°C for 10±2sec. immerse body into solder 1/16"±1/32"	MIL-STD-750D METHOD-2031
2. Solderability	at 245±5°C for 5 sec.	MIL-STD-202F METHOD-208
3. Pull Test	1kg in axial lead direction for 10 sec.	MIL-STD-750D METHOD-2036
4. Bend Lead	1kg weight applied to each lead bending arc 90°±5° for 3 times.	MIL-STD-750D METHOD-2036
5. High Temperature Reverse Bias	$V_R=80\%$ rate at $T_j=175^\circ\text{C}$ for 168 hrs.	MIL-STD-750D METHOD-1038
6. Pressure Cooker	15P _{SIG} at $T_A=121^\circ\text{C}$ for 4 hrs.	JESD22-A102
7. Temperature Cycling	-55°C to +125°C dwelled for 30 min. and transferred for 5min. total 10 cycles.	MIL-STD-750D METHOD-1051
8. Humidity	at $T_A=85^\circ\text{C}$, RH=85% for 1000hrs.	MIL-STD-750D METHOD-1021
9. High Temperature Storage Life	at 175°C for 1000 hrs.	MIL-STD-750D METHOD-1031