

**2EZ2.7D5 THRU 2EZ200D5**

SILICON ZENER DIODES



**VOLTAGE:** 2.7~200 Volts

**POWER:** 2.0 Watts

**DO-41** **Marking and Polarity**

**FEATURES**

- Low Zener Impedance
- Power Dissipation of 2W
- High Stability and High Reliability
- Zener Voltage Tolerance: ± 5%

**MECHANICAL DATA**

- **Package:** DO-41
- **Epoxy UL:** 94V-0
- **Mounting position:** Any
- **Weight:** 0.012 ounce, 0.33 grams



Remark:

- ①. NH=niuhang trademark;
- ②. 2EZXXXD5=Model;XXX=2.7-200
- ③. FF=Production line,According to actual changes;

**Maximum Ratings & Thermal Characteristics** (Ratings at 25°C ambient temperature unless otherwise specified.)

Parameter	Symbol	Value	Unit
Power Dissipation (Note1)	P <sub>D</sub>	2.0	W
Maximum instantaneous forward voltage@IF=10mA (Note 1)	V <sub>F</sub>	1.2	V
Operating Temperature Range	T <sub>OPR</sub>	-55~+175	°C
Storage temperature range	T <sub>STG</sub>	-55~+175.	°C

Notes: 1.Pulse width < 10 ms

2.Mounted on P.C.B. with 0.2" x 0.2" (5.08 mm x 5.08 mm) copper pad areas

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Electrical Characteristic (Rating at 25°C ambient temperature unless otherwise specified).

Device	Zener Voltage Range				Maximum Zener Impedance			Maximum Reverse Current		Test Current IZTC
	V <sub>Z</sub> @I <sub>ZT</sub>			I <sub>ZT</sub>	Z <sub>zt</sub> @I <sub>zt</sub>	Z <sub>zk</sub> @I <sub>zk</sub>	I <sub>zk</sub>	IR	VR	
	Min(V)	Nom(V)	Max(V)	mA	Ω		mA	uA	V	mA
2EZ2.7D5	2.57	2.7	2.84	80	10	400	1	100	1	660
2EZ3.0D5	2.85	3.0	3.15	160	8	400	1	100	1	600
2EZ3.3D5	3.14	3.3	3.47	145	8	400	1	80	1	545
2EZ3.6D5	3.42	3.6	3.78	139	5	400	1	80	1	504
2EZ3.9D5	3.71	3.9	4.10	128	5	400	1	30	1	468
2EZ4.3D5	4.09	4.3	4.52	116	4.5	400	1	20	1	434
2EZ4.7D5	4.47	4.7	4.94	106	4.5	550	1	5	1	386
2EZ5.1D5	4.85	5.1	5.36	98	3.5	600	1	5	1	356
2EZ5.6D5	5.32	5.6	5.88	89.5	2.5	700	1	5	2	324
2EZ6.2D5	5.89	6.2	6.51	80.5	1.5	700	1	5	3	292
2EZ6.5D5	6.18	6.5	6.83	77	1.7	700	1	5	3.5	278
2EZ6.8D5	6.46	6.8	7.14	73.5	2	700	1	5	4	266
2EZ7.5D5	7.13	7.5	7.88	66.5	2	700	0.5	5	5	242
2EZ8.2D5	7.79	8.2	8.61	61	2.3	700	0.5	5	6	220
2EZ9.1D5	8.65	9.1	9.56	55	2.5	700	0.5	3	7	200
2EZ10D5	9.50	10.0	10.50	50	3.5	700	0.25	3	7.6	182
2EZ11D5	10.45	11.0	11.55	4.5	4	700	0.25	1	8.4	166
2EZ12D5	11.40	12.0	12.60	41.5	4.5	700	0.25	1	9.1	152
2EZ13D5	12.35	13.0	13.65	38.5	5	700	0.25	0.5	9.9	138
2EZ14D5	13.30	14.0	14.70	35.7	5.5	700	0.25	0.5	10.6	130
2EZ15D5	14.25	15.0	15.75	33.4	7	700	0.25	0.5	11.4	122
2EZ16D5	15.20	16.0	16.80	31.2	8	700	0.25	0.5	12.2	114
2EZ17D5	16.15	17.0	17.85	29.4	9	750	0.25	0.5	13	107
2EZ18D5	17.10	18.0	18.90	27.8	10	750	0.25	0.5	13.7	100
2EZ19D5	18.05	19.0	19.95	26.3	11	750	0.25	0.5	14.4	95
2EZ20D5	19.00	20.0	21.00	25	11	750	0.25	0.5	15.2	90
2EZ22D5	20.90	22.0	23.10	22.8	12	750	0.25	0.5	16.7	82
2EZ24D5	22.80	24.0	25.20	20.8	13	750	0.25	0.5	18.2	766
2EZ27D5	25.65	27.0	28.35	18.5	18	750	0.25	0.5	20.6	68
2EZ30D5	28.50	30.0	31.50	16.6	20	1000	0.25	0.5	22.5	60
2EZ33D5	31.35	33.0	34.65	15.1	23	1000	0.25	0.5	25.1	55
2EZ36D5	34.20	36.0	37.80	13.9	25	1000	0.25	0.5	27.4	50
2EZ39D5	37.05	39.0	40.95	12.8	30	1000	0.25	0.5	29.7	47
2EZ43D5	40.85	43.0	45.15	11.6	35	1500	0.25	0.5	32.7	43
2EZ47D5	44.65	47.0	49.35	10.6	40	1500	0.25	0.5	35.8	39
2EZ51D5	48.45	51.0	53.55	9.8	48	1500	0.25	0.5	38.8	36
2EZ56D5	53.20	56.0	58.80	9	55	2000	0.25	0.5	42.6	32
2EZ62D5	58.90	62.0	65.10	8.1	60	2000	0.25	0.5	47.1	29

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Electrical Characteristic (Rating at 25°C ambient temperature unless otherwise specified).										
Device	Zener Voltage Range				Maximum Zener Impedance			Maximum Reverse Current		Test Current IZTC
	Vz@Izt			Izt	Zzt @Izt	Zzk @Izk	Izk	IR	VR	
	Min(V)	Nom(V)	Max(V)	mA	Ω		mA	uA	V	mA
2EZ68D5	64.6	68	71.4	7.4	75	2000	0.25	0.5	51.7	27.0
2EZ75D5	71.3	75	78.8	6.7	90	2000	0.25	0.5	56.0	24.0
2EZ82D5	77.9	82	86.1	6.1	100	3000	0.25	0.5	62.2	22.0
2EZ91D5	86.5	91	95.6	5.5	125	3000	0.25	0.5	69.2	20.0
2EZ100D5	95.0	100	105.0	5.0	175	3000	0.25	0.5	76.0	18.0
2EZ110D5	104.5	110	115.5	4.5	250	4000	0.25	0.5	83.6	17.0
2EZ120D5	114.0	120	126.0	4.2	325	4500	0.25	0.5	91.2	15.0
2EZ130D5	123.5	130	136.5	3.8	400	5000	0.25	0.5	98.8	14.0
2EZ140D5	133.0	140	147.0	3.6	500	5500	0.25	0.5	106.4	13.0
2EZ150D5	142.5	150	157.5	3.3	7575	6000	0.25	0.5	114.0	12.0
2EZ160D5	152.0	160	168.0	3.1	650	6500	0.25	0.5	121.6	11.0
2EZ170D5	161.5	170	178.5	2.9	675	7000	0.25	0.5	130.4	11.0
2EZ180D5	171.0	180	189.0	2.8	725	7000	0.25	0.5	136.8	10.0
2EZ190D5	180.5	190	199.5	2.6	825	8000	0.25	0.5	144.8	10.0
2EZ200D5	190.0	200	210.0	2.5	1900	9990	0.25	0.5	152.0	9.0

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RATING AND CHARACTERISTIC CURVES

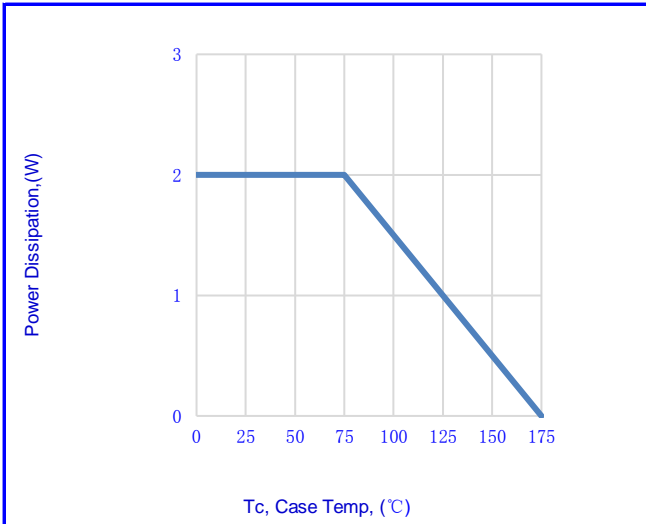


Fig.1-POWER DISSIPATION VS. AMBIENT TEMP.

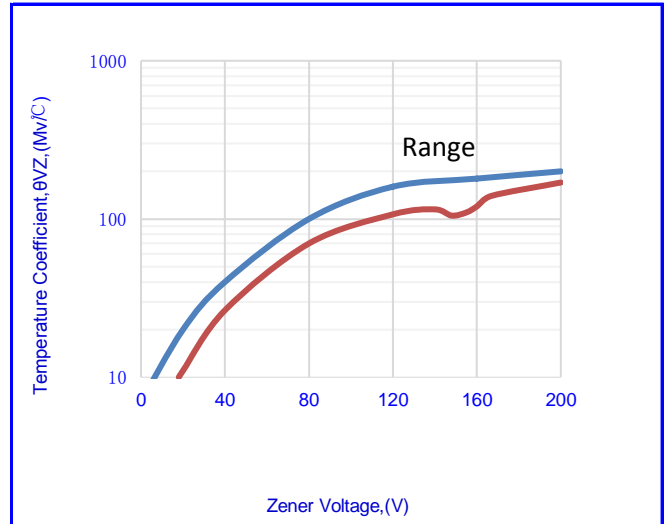


Fig.2- Temperature Coefficient VS. Zener Voltage

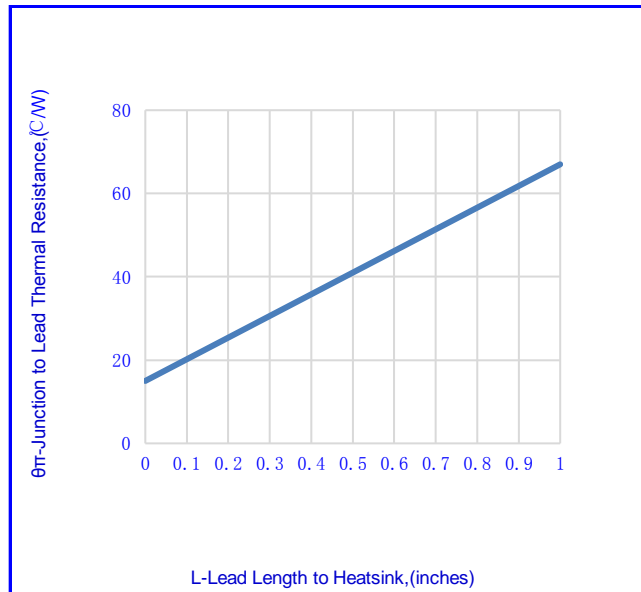


Fig.3- TYPICAL THERMALE RESISTANCE VS.LEAD LENGTH

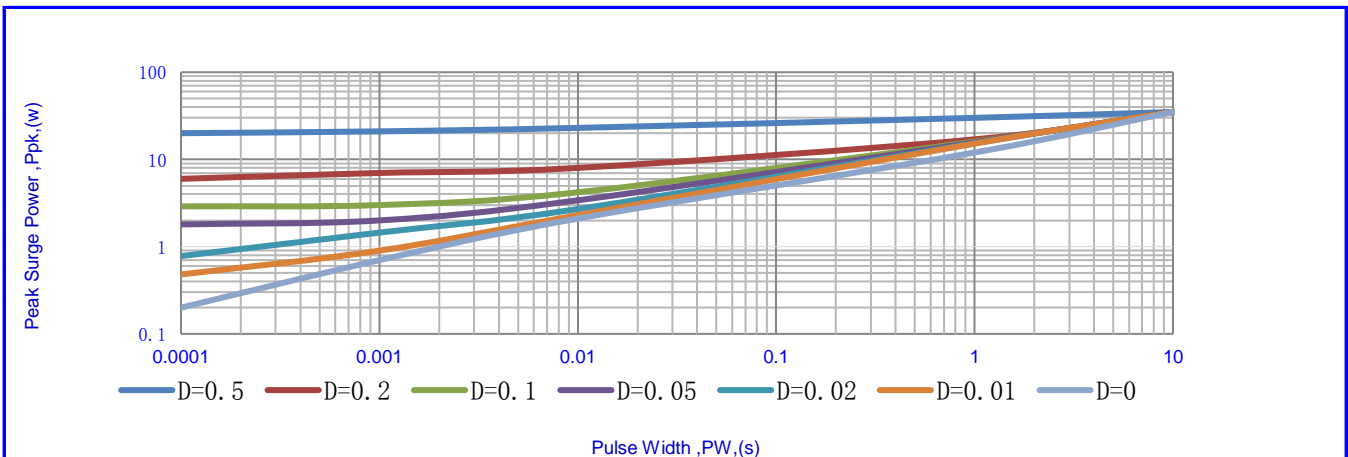


Fig.4-Maximum Surge Power

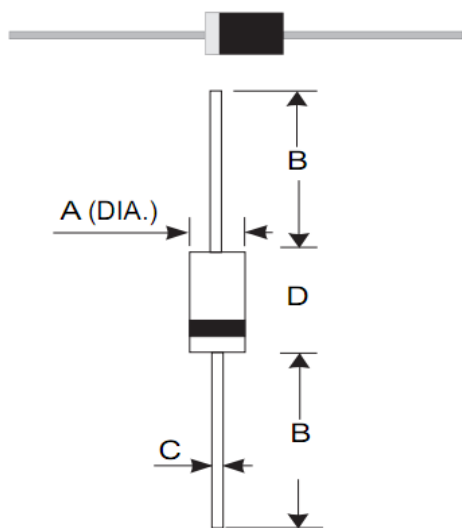
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OUTLINE DRAWINGS

DO-41



OUTLINE DIMENSIONS

Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.0	-	2.8	0.079	-	0.110
B	25.1	-	-	0.988	-	-
C	0.6	-	0.9	0.024	-	0.035
D	4.2	-	5.2	0.165	-	0.205

Packing Information

Package	Pack	Box Size LxWxH(mm)	Quantity (pcs/box)	Carton Size LxWxH(mm)	Quantity (pcs/carton)
D0-41	B/G	250*75*140	5000	420*280*310	50000

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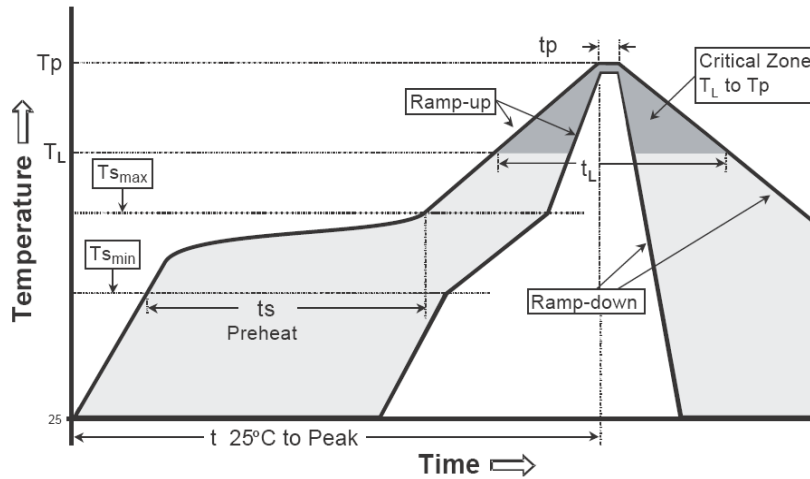
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**Recommended wave soldering condition**

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

**Recommended temperature profile for IR reflow**



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (Tsmmax to Tp)	3°C/second max.	3°C/second max.
Preheat -Temperature Min(TS min) -Temperature Max(TS max) -Time(ts min to ts max)	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: -Temperature (TL) - Time (tL)	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature(TP)	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(tp)	10-30 seconds	20-40 seconds
Ramp down rate	6°C/second max.	6°C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.

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