



# SMB2EZ5.1D5 THRU SMB2EZ330D5

## ZENER DIODES

**REVERSE VOLTAGE:** 5.1 TO 330 VOLTS

**POWER DISSIPATION:** 2.0 WATTS

### FEATURES

- Glass passivation junction
- Low Leakage
- Built-in strain relief
- Low inductance
- High peak reverse power dissipation
- For use in stabilizing and clipping with high power rating
- RoHS compliant
- Suffix " H " indicated Halogen-free part, ex.SMB2EZ5.1D5H

### MECHANICAL DATA

Case : Molded plastic DO-214AA(SMB)

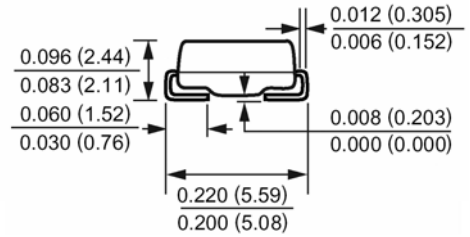
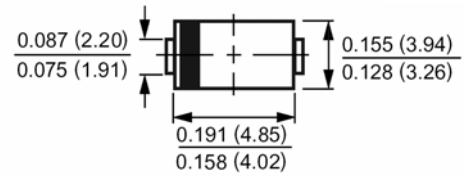
Epoxy : UL 94V-0 rate flame retardant

Lead : Solderable per MIL-STD-202, method 208 guaranteed

Polarity : Color band denotes cathode end

Mounting position : Any

### DO-214AA(SMB)



Dimensions in inches and (millimeters)

### Absolute Maximum Ratings

$T_A = 25\text{ }^\circ\text{C}$ , unless otherwise specified

Parameter	Symbol	Value	Unit
DC Power Dissipation at $T_L=50\text{ }^\circ\text{C}$ <sup>(1)</sup>	$P_D$	2.0	W
Maximum Forward Voltage at $I_F=200\text{mA}$	$V_F$	1.5	V
Junction Temperature Range	$T_J$	-55 to +150	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to +150	$^\circ\text{C}$

#### Note:

1.  $T_L$ =Lead temperature at 3/8"(9.5mm) from body



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### Electrical Characteristics

T<sub>A</sub>=25°C unless otherwise noted

Type	Nominal Zener Voltage		Maximum Zener Impedance			Maximum Reverse Leakage Current		Maximum Zener Current
	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>	I <sub>R</sub> @V <sub>R</sub>		I <sub>ZM</sub>
	V	mA	Ohm		mA	uA	V	mA
SMB2EZ5.1D5	5.1	98.0	3.5	600	1.00	5.0	1.0	354
SMB2EZ5.6D5	5.6	89.5	2.5	500	1.00	5.0	2.0	323
SMB2EZ6.2D5	6.2	80.5	1.5	700	1.00	5.0	3.0	292
SMB2EZ6.8D5	6.8	73.5	2.0	700	1.00	5.0	4.0	266
SMB2EZ7.5D5	7.5	66.5	2.0	700	0.50	5.0	5.0	242
SMB2EZ8.2D5	8.2	61.0	2.3	700	0.50	5.0	6.0	220
SMB2EZ9.1D5	9.1	55.0	2.5	700	0.50	3.0	7.0	200
SMB2EZ10D5	10.0	50.0	3.5	700	0.25	3.0	7.6	182
SMB2EZ11D5	11.0	45.5	4.0	700	0.25	1.0	8.4	166
SMB2EZ12D5	12.0	41.5	4.5	700	0.25	1.0	9.1	152
SMB2EZ13D5	13.0	38.5	5.0	700	0.25	0.5	9.9	138
SMB2EZ14D5	14.0	35.7	5.5	700	0.25	0.5	10.6	130
SMB2EZ15D5	15.0	33.4	7.0	700	0.25	0.5	11.4	122
SMB2EZ16D5	16.0	31.2	8.0	700	0.25	0.5	12.2	114
SMB2EZ17D5	17.0	29.4	9.0	750	0.25	0.5	13.0	107
SMB2EZ18D5	18.0	27.8	10.0	750	0.25	0.5	13.7	100
SMB2EZ19D5	19.0	26.3	11.0	750	0.25	0.5	14.4	95.0
SMB2EZ20D5	20.0	25.0	11.0	750	0.25	0.5	15.2	90.0
SMB2EZ22D5	22.0	22.8	12.0	750	0.25	0.5	16.7	82.0
SMB2EZ24D5	24.0	20.8	13.0	750	0.25	0.5	18.2	76.0
SMB2EZ27D5	27.0	18.5	18.0	750	0.25	0.5	20.6	68.0
SMB2EZ30D5	30.0	16.6	20.0	1000	0.25	0.5	22.5	60.0
SMB2EZ33D5	33.0	15.1	23.0	1000	0.25	0.5	25.1	55.0
SMB2EZ36D5	36.0	13.9	25.0	1000	0.25	0.5	27.4	50.0
SMB2EZ39D5	39.0	12.8	30.0	1000	0.25	0.5	29.7	47.0
SMB2EZ43D5	43.0	11.6	35.0	1500	0.25	0.5	32.7	43.0
SMB2EZ47D5	47.0	10.6	40.0	1500	0.25	0.5	35.8	39.0
SMB2EZ51D5	51.0	9.8	48.0	1500	0.25	0.5	38.8	36.0
SMB2EZ56D5	56.0	9.0	55.0	2000	0.25	0.5	42.6	32.0
SMB2EZ62D5	62.0	8.1	60.0	2000	0.25	0.5	47.1	29.0
SMB2EZ68D5	68.0	7.4	75.0	2000	0.25	0.5	51.7	27.0
SMB2EZ75D5	75.0	6.7	90.0	2000	0.25	0.5	56.0	24.0
SMB2EZ82D5	82.0	6.1	100	3000	0.5	0.5	62.0	22.0
SMB2EZ91D5	91.0	5.5	125	3000	0.25	0.5	69.2	20.0



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	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>	I <sub>R</sub> @V <sub>R</sub>		I <sub>ZM</sub>
	V	mA	Ohm		mA	uA	V	mA
SMB2EZ100D5	100	5.0	175	3000	0.25	0.5	76.0	18.0
SMB2EZ110D5	110	4.5	250	4000	0.25	0.5	83.6	17.0
SMB2EZ120D5	120	4.2	325	4500	0.25	0.5	91.2	15.0
SMB2EZ130D5	130	3.8	400	5000	0.25	0.5	98.8	14.0
SMB2EZ140D5	140	3.6	500	5500	0.25	0.5	106.4	13.0
SMB2EZ150D5	150	3.3	575	6000	0.25	0.5	114.0	12.0
SMB2EZ160D5	160	3.1	650	6500	0.25	0.5	121.6	11.0
SMB2EZ170D5	170	2.9	675	7000	0.25	0.5	130.4	11.0
SMB2EZ180D5	180	2.8	725	7000	0.25	0.5	136.8	10.0
SMB2EZ190D5	190	2.6	825	8000	0.25	0.5	144.8	10.0
SMB2EZ200D5	200	2.5	1900	9990	0.25	0.5	152.0	9.0
SMB2EZ220D5	220	2.0	2000	8500	0.25	0.5	167.0	8.0
SMB2EZ270D5	270	1.6	2200	8500	0.25	0.5	205.0	6.7
SMB2EZ300D5	300	1.5	2200	9000	0.25	0.5	228.0	5.9
SMB2EZ330D5	330	1.4	2300	9000	0.25	0.5	250.0	5.4

- Note
- The type number listed have a standard tolerance on the nominal zener voltage of ± 5 %
  - The reverse surge current is a non-repetitive, 8.3ms pulse width square wave or equivalent sine-wave superimposed on I<sub>T</sub> per JEDEC method



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### RATINGS AND CHARACTERISTIC CURVES

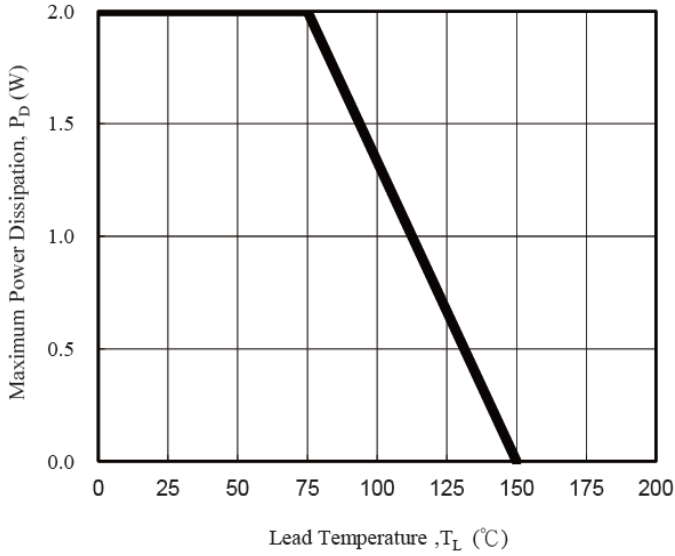


Fig. 1 - Power Temperature Derating Curve

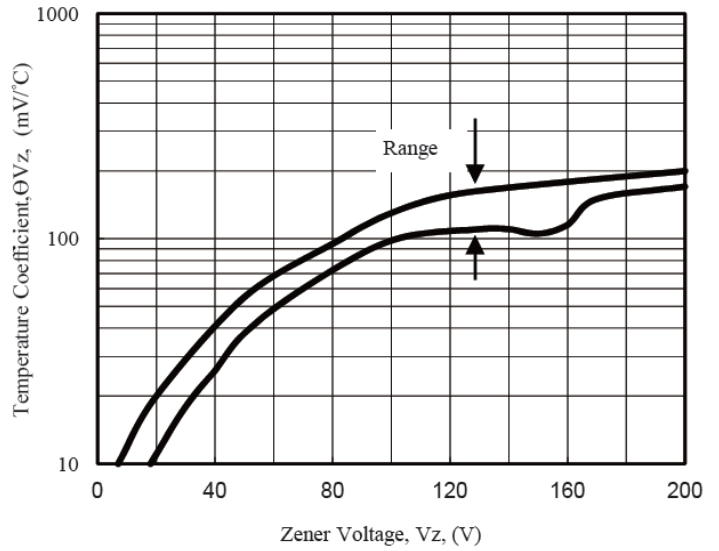


Fig. 2 - Temperature Coefficients v.s. Zener Voltage

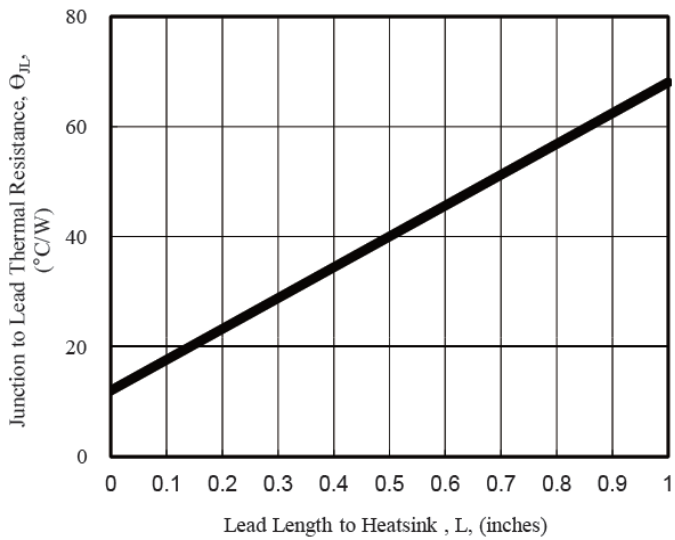


Fig. 3 - Typical Thermal Resistance v.s. Lead Length

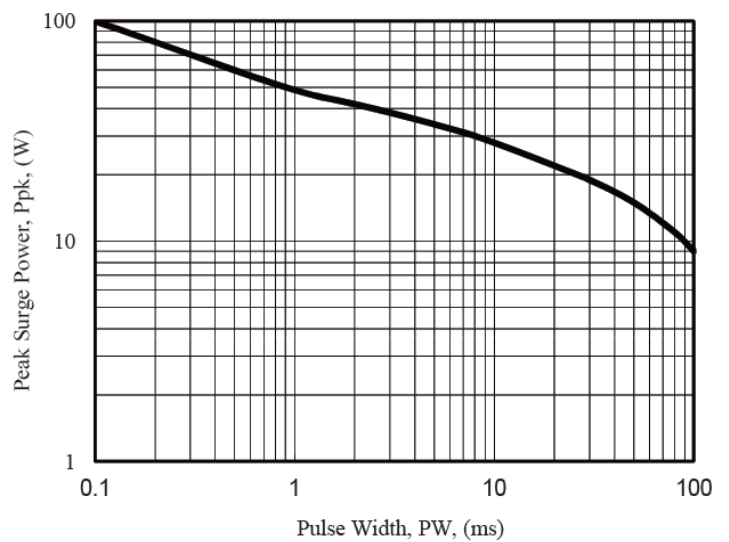


Fig. 4 - Maximum Surge Power

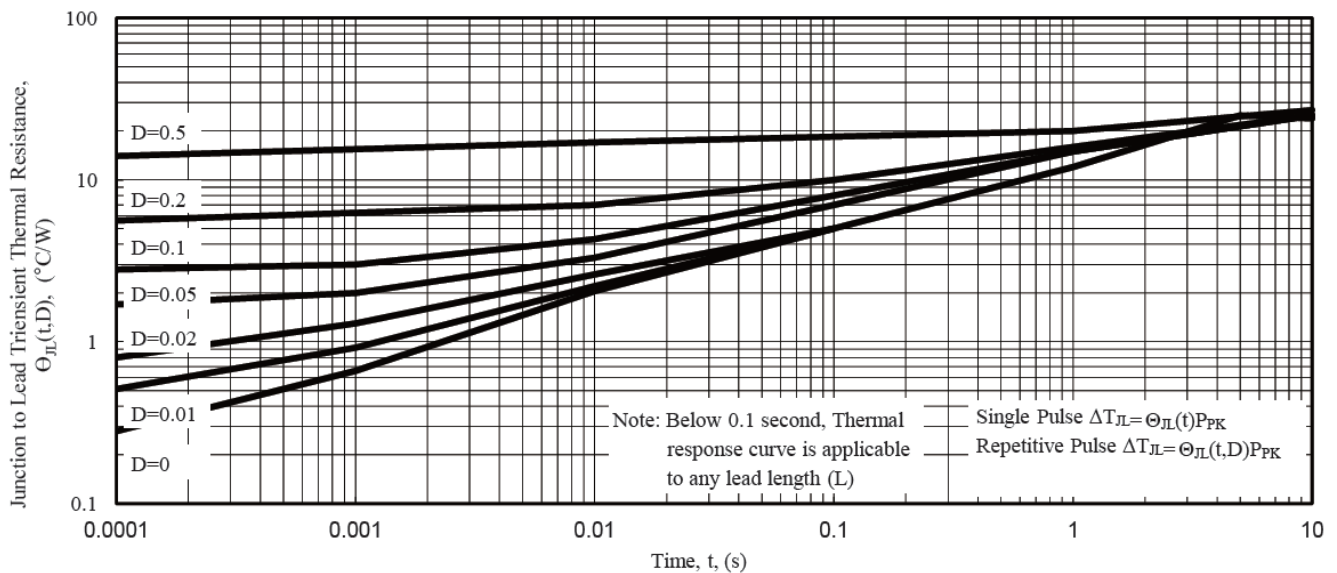


Fig. 5 - Typical Thermal Response L, Lead Length=3/8inch