



# SMB3EZ5.6D5 THRU SMB3EZ200D5

## ZENER DIODES

**REVERSE VOLTAGE:** 5.6 TO 200 VOLTS

**POWER DISSIPATION:** 3.0 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.SMB3EZ5.6D5H

### MECHANICAL DATA

Case : Molded plastic DO-214AA(SMB)

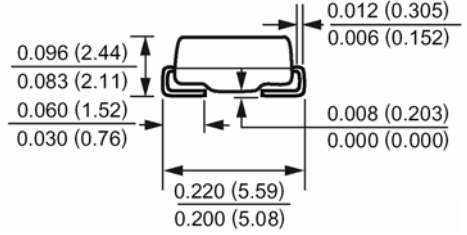
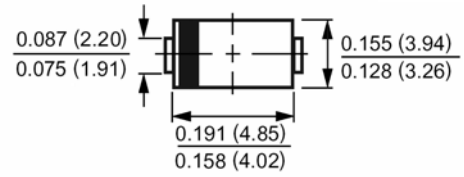
Epoxy : UL 94V-0 rate flame retardant

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

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>	$P_D$	3.0	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
SMB3EZ5.6D5	5.6	134.0	2.5	600	1.00	5.0	2.0	481
SMB3EZ6.2D5	6.2	121.0	1.5	700	1.00	5.0	3.0	435
SMB3EZ6.8D5	6.8	110.0	2.0	700	1.00	5.0	4.0	393
SMB3EZ7.5D5	7.5	100.0	2.0	700	0.50	5.0	5.0	360
SMB3EZ8.2D5	8.2	91.0	2.3	700	0.50	5.0	6.0	330
SMB3EZ9.1D5	9.1	82.0	2.5	700	0.50	3.0	7.0	297
SMB3EZ10D5	10.0	75.0	3.5	700	0.25	3.0	7.6	270
SMB3EZ11D5	11.0	68.0	4.0	700	0.25	1.0	8.4	225
SMB3EZ12D5	12.0	63.0	4.5	700	0.25	1.0	9.1	246
SMB3EZ13D5	13.0	58.0	4.5	700	0.25	0.5	9.9	208
SMB3EZ14D5	14.0	53.0	5.0	700	0.25	0.5	10.6	193
SMB3EZ15D5	15.0	50.0	5.5	700	0.25	0.5	11.4	180
SMB3EZ16D5	16.0	47.0	5.5	700	0.25	0.5	12.2	169
SMB3EZ17D5	17.0	44.0	6.0	750	0.25	0.5	13.0	159
SMB3EZ18D5	18.0	42.0	6.0	750	0.25	0.5	13.7	150
SMB3EZ19D5	19.0	40.0	7.0	750	0.25	0.5	14.4	142.0
SMB3EZ20D5	20.0	37.0	7.0	750	0.25	0.5	15.2	135.0
SMB3EZ22D5	22.0	34.0	8.0	750	0.25	0.5	16.7	123.0
SMB3EZ24D5	24.0	31.0	9.0	750	0.25	0.5	18.2	112.0
SMB3EZ27D5	27.0	28.0	10.0	750	0.25	0.5	20.6	100.0
SMB3EZ28D5	28.0	27.0	12.0	750	0.25	0.5	21.0	96.0
SMB3EZ30D5	30.0	25.0	16.0	1000	0.25	0.5	22.5	90.0
SMB3EZ33D5	33.0	23.0	20.0	1000	0.25	0.5	25.1	82.0
SMB3EZ36D5	36.0	21.0	22.0	1000	0.25	0.5	27.4	75.0
SMB3EZ39D5	39.0	19.0	28.0	1000	0.25	0.5	29.7	69.0
SMB3EZ43D5	43.0	17.0	33.0	1500	0.25	0.5	32.7	63.0
SMB3EZ47D5	47.0	16.0	38.0	1500	0.25	0.5	35.6	57.0
SMB3EZ51D5	51.0	15.0	45.0	1500	0.25	0.5	38.8	53.0
SMB3EZ56D5	56.0	13.0	50.0	2000	0.25	0.5	42.6	48.0
SMB3EZ62D5	62.0	12.0	55.0	2000	0.25	0.5	47.1	44.0
SMB3EZ68D5	68.0	11.0	70.0	2000	0.25	0.5	51.7	40.0
SMB3EZ75D5	75.0	10.0	85.0	2000	0.25	0.5	56.0	36.0
SMB3EZ82D5	82.0	9.1	95	3000	0.25	0.5	62.2	33.0
SMB3EZ91D5	91.0	8.2	115	3000	0.25	0.5	69.2	30.0



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### Electrical Characteristics

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

Type	Nominal Zener Voltage		Maximum Zener Impedance			Maximum Reverse Leakage Current		Maximum Zener Current
	$V_Z @ I_{ZT}$	$I_{ZT}$	$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	$I_{ZK}$	$I_R @ V_R$		$I_{ZM}$
	V	mA	Ohm		mA	uA	V	mA
SMB3EZ100D5	100	7.5	160	3000	0.25	0.5	76.0	27.0
SMB3EZ110D5	110	6.8	225	4000	0.25	0.5	83.6	25.0
SMB3EZ120D5	120	6.3	300	4500	0.25	0.5	91.2	22.0
SMB3EZ130D5	130	5.8	375	5000	0.25	0.5	98.8	21.0
SMB3EZ140D5	140	5.3	475	5000	0.25	0.5	106.4	19.0
SMB3EZ150D5	150	5.0	550	6000	0.25	0.5	114.0	18.0
SMB3EZ160D5	160	4.7	625	6500	0.25	0.5	121.6	17.0
SMB3EZ170D5	170	4.4	650	7000	0.25	0.5	130.4	16.0
SMB3EZ180D5	180	4.2	700	7000	0.25	0.5	136.8	15.0
SMB3EZ190D5	190	4.0	800	8000	0.25	0.5	144.8	14.0
SMB3EZ200D5	200	3.7	875	8000	0.25	0.5	152.0	13.0

#### Note

- The type number listed have a standard tolerance on the nominal zener voltage of  $\pm 5\%$
- The reverse surge current is a non-repetitive, 8.3ms pulse width square wave or equivalent sine-wave superimposed on  $I_T$  per JEDEC method



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### RATINGS AND CHARACTERISTIC CURVES

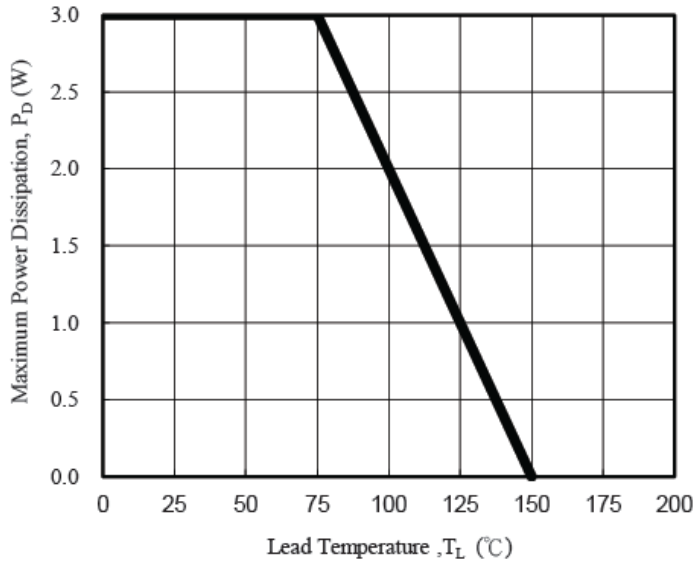


Fig. 1 - Power Temperature Derating Curve

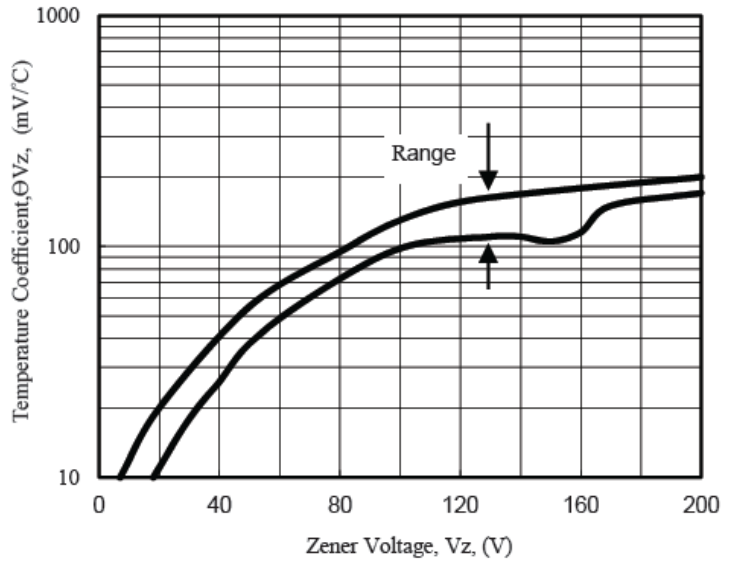


Fig. 2 - Temperature Coefficients v.s. Zener Voltage

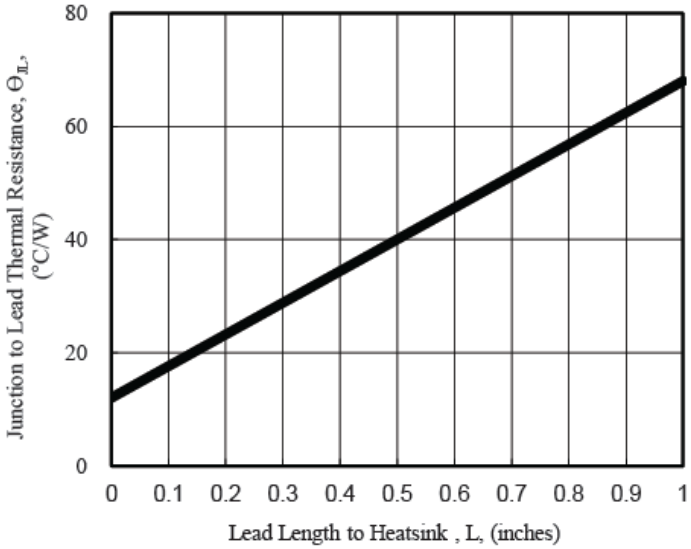


Fig. 3 - Typical Thermal Resistance v.s. Lead Length

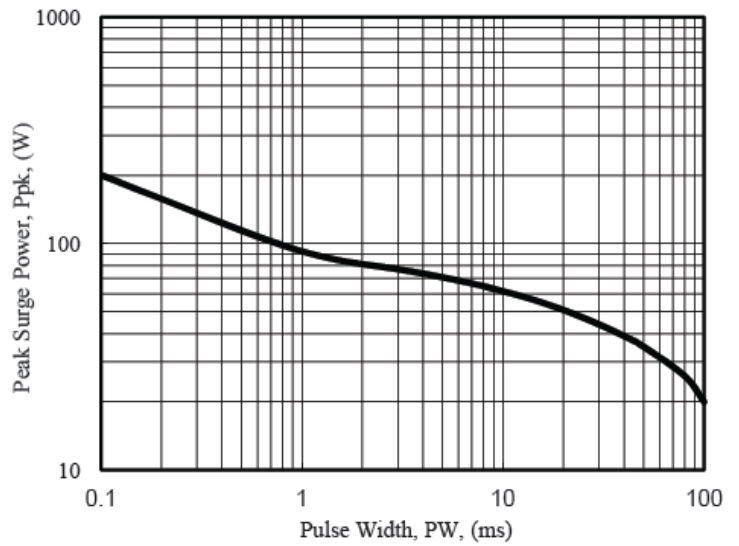


Fig. 4 - Maximum Surge Power

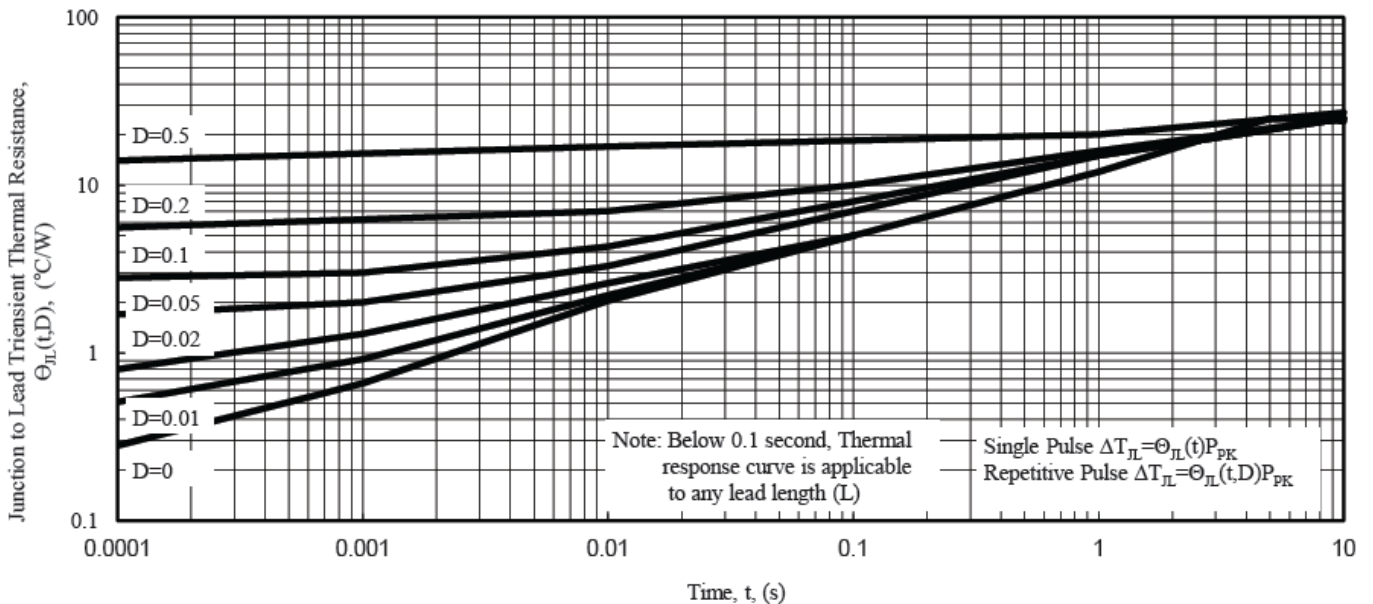


Fig. 5 - Typical Thermal Response L, Lead Length=3/8inch