



Micro Commercial Components



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20736 Marilla Street Chatsworth  
CA 91311  
Phone: (818) 701-4933  
Fax: (818) 701-4939

# SMB2EZ5.1D5 THRU SMB2EZ75D5

## Features

- Lead Free Finish/Rohs Compliant (Note1) ("P" Suffix designates Compliant. See ordering information)
- Glass Passivated Junction
- Excellent Clamping Capability
- Built-in Strain Relief
- Low Inductance
- Halogen free available upon request by adding suffix "-HF"

## Mechanical Data

- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- TERMINALS : Solder plated, solderable per MIL-STD-750, method 2026
- POLARITY : Color band denotes positive end (cathode)

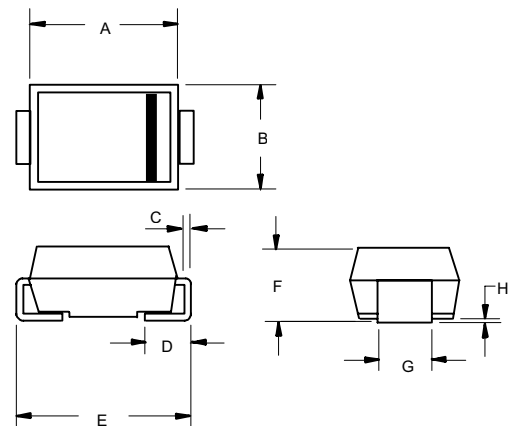
## Maximum Ratings @ 25°C Unless Otherwise Specified

Peak Pulse Power Dissipation (Note 2) Derate above 75°C	<b>P<sub>D</sub></b>	<b>2 24</b>	<b>Watts mW/°C</b>
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) (Note 3)	<b>I<sub>FSM</sub></b>	<b>15</b>	<b>Amps</b>
Operating And Storage Temperature Range	<b>T<sub>J</sub>, T<sub>STG</sub></b>	<b>-55°C to +150°C</b>	

- NOTES: 1. High Temperature Solder Exemptions Applied, see EU Directive Annex 7.  
2. Mounted on 5.0mm<sup>2</sup> (.013mm thick) land areas.  
3. Measured on 8.3ms, single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.

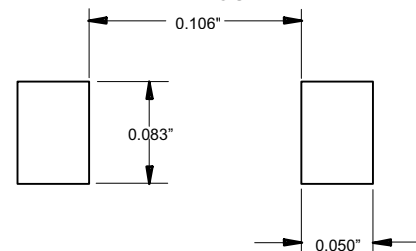
## 2 W Glass Passivated Junction Silicon Zener Diode 5.1-75 Volts

### DO-214AA (SMB) (LEAD FRAME)



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.160	.185	4.06	4.70	
B	.130	.155	3.30	3.94	
C	.006	.012	0.15	0.31	
D	.030	.060	0.76	1.52	
E	.200	.220	5.08	5.59	
F	.079	.096	2.00	2.44	
G	.075	.087	1.91	2.21	
H	.002	.008	0.05	0.203	

### SUGGESTED SOLDER PAD LAYOUT



**SMB2EZ5.1D5 THRU SMB2EZ75D5**

ELECTRICAL CHARACTERISTICS( $T_A=25^{\circ}C$  unless otherwise noted) $V_F=1.5V$  max, $I_F=200mA$  for all types.

Type No. (Note 1.)	Nominal Zener Voltage $V_Z$ @ $I_{ZT}$ Volts (Note 2.)	Test Current $I_{ZT}$ mA	Maximum Zener Impedance (Note 3)			Leakage Current		Maximum Zener Current $I_{ZM}$ mA	Surge Current @ $T_A=25$ $I_{ZSM}$ -A (Note 4.)	Device Marking
			$Z_{ZT}$ @ $I_{ZT}$	$Z_{ZK}$ @ $I_{ZK}$	$I_{ZK}$	$I_R$	$V_R$			
			Ohms	Ohms	mA	$\mu A$ Max	Volts			
SMB2EZ5.1D5	5.1	98.0	3.5	600	1	5	1	356	3.5	2E5.1/2C5V1
SMB2EZ5.6D5	5.6	89.5	2.5	500	1	5	2	324	3.3	2E5.6/2C5V6
SMB2EZ6.2D5	6.2	80.5	1.5	700	1	5	3	292	3.1	2E6.2/2C6V2
SMB2EZ6.8D5	6.8	73.5	2	700	1	5	4	266	2.9	2E6.8/2C6V8
SMB2EZ7.5D5	7.5	66.5	2	700	0.5	5	5	242	2.66	2E7.5/2C7V5
SMB2EZ8.2D5	8.2	61	2.3	700	0.5	5	6	220	2.44	2E8.2/2C8V2
SMB2EZ9.1D5	9.1	55	2.5	700	0.5	3	7	200	2.2	2E9.1/2C9V1
SMB2EZ10D5	10	50	3.5	700	0.25	3	7.6	182	2.0	2E10/2C10
SMB2EZ11D5	11	45.5	4	700	0.25	1	8.4	166	1.82	2E11/2C11
SMB2EZ12D5	12	41.5	4.5	700	0.25	1	9.1	152	1.66	2E12/2C12
SMB2EZ13D5	13	38.5	5	700	0.25	0.5	9.9	138	1.54	2E13/2C13
SMB2EZ14D5	14	35.7	5.5	700	0.25	0.5	10.6	130	1.43	2E14/2C14
SMB2EZ15D5	15	33.4	7	700	0.25	0.5	11.4	122	1.33	2E15/2C15
SMB2EZ16D5	16	31.2	8	700	0.25	0.5	12.2	114	1.25	2E16/2C16
SMB2EZ17D5	17	29.4	9	750	0.25	0.5	13	107	1.18	2E17/2C17
SMB2EZ18D5	18	27.8	10	750	0.25	0.5	13.7	100	1.11	2E18/2C18
SMB2EZ19D5	19	26.3	11	750	0.25	0.5	14.4	95	1.05	2E19/2C19
SMB2EZ20D5	20	25	11	750	0.25	0.5	15.2	90	1	2E20/2C20
SMB2EZ22D5	22	22.8	12	750	0.25	0.5	16.7	82	0.91	2E22/2C22
SMB2EZ24D5	24	20.8	13	750	0.25	0.5	18.2	76	0.83	2E24/2C24
SMB2EZ27D5	27	18.5	18	750	0.25	0.5	20.6	68	0.74	2E27/2C27
SMB2EZ30D5	30	16.6	20	1000	0.25	0.5	22.5	60	0.67	2E30/2C30
SMB2EZ33D5	33	15.1	23	1000	0.25	0.5	25.1	55	0.61	2E33/2C33
SMB2EZ36D5	36	13.9	25	1000	0.25	0.5	27.4	50	0.56	2E36/2C36
SMB2EZ39D5	39	12.8	30	1000	0.25	0.5	29.7	47	0.51	2E39/2C39
SMB2EZ43D5	43	11.6	35	1500	0.25	0.5	32.7	43	0.45	2E43/2C43
SMB2EZ47D5	47	10.6	40	1500	0.25	0.5	35.8	39	0.42	2E47/2C47
SMB2EZ51D5	51	9.8	48	1500	0.25	0.5	38.8	36	0.39	2E51/2C51
SMB2EZ56D5	56	9	55	2000	0.25	0.5	42.6	32	0.36	2E56/2C56
SMB2EZ62D5	62	8.1	60	2000	0.25	0.5	47.1	29	0.32	2E62/2C62
SMB2EZ68D5	68	7.4	75	2000	0.25	0.5	51.7	27	0.29	2E68/2C68
SMB2EZ75D5	75	6.7	90	2000	0.25	0.5	56	24	0.27	2E75/2C75

**Notes:**

1. TOLERANCES - Suffix indicates 5% tolerance any other tolerance will be considered as a special device.
2. ZENER VOLTAGE ( $V_Z$ ) MEASUREMENT - guarantees the zener voltage when measured at 40 ms from the diode body, and an ambient temperature of 25 centigrade degrees.
3. ZENER IMPEDANCE ( $Z_Z$ ) DERIVATION - The zener impedance is derived from the 60 cycle ac voltage, which results when an ac current having an rms value equal to 10% of the dc zener current ( $I_{ZT}$  or  $I_{ZK}$ ) is superimposed on  $I_{ZT}$  or  $I_{ZK}$
4. SURGE CURRENT ( $I_{ZSM}$ ) NON-REPETITIVE - The rating listed in the electrical characteristics table is maximum peak, non-repetitive, reverse surge current of 1/2 square wave or equivalent sine wave pulse of 1/120 second duration superimposed on the test current,  $I_{ZT}$ , per JEDEC standards, however, actual device capability is as described in Figure 3.

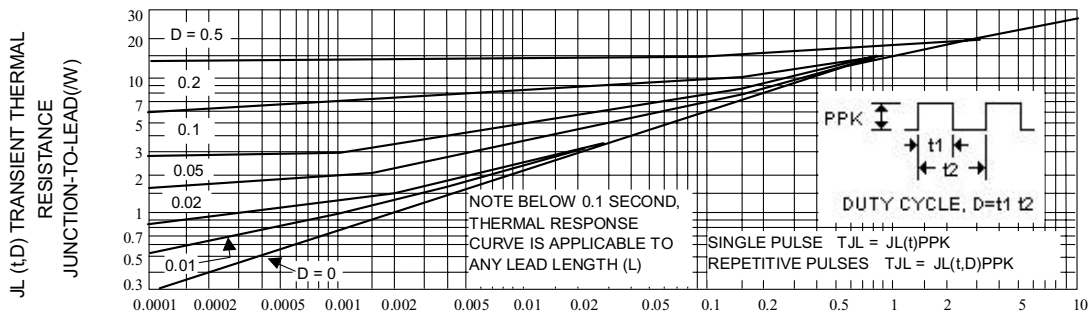


Fig. 2-TYPICAL THERMAL RESPONSE

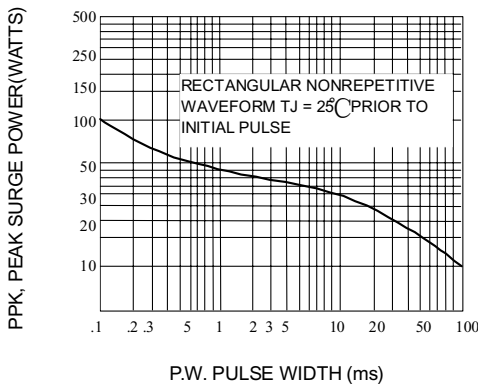


Fig. 3-MAXIMUM SURGE POWER

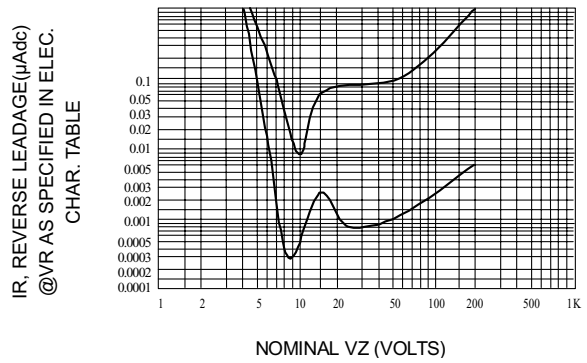


Fig. 4-TYPICAL REVERSE LEAKAGE

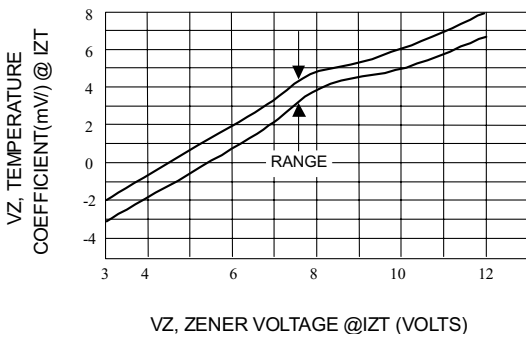


Fig. 5-UNITS 3.9 TO 12 VOLTS

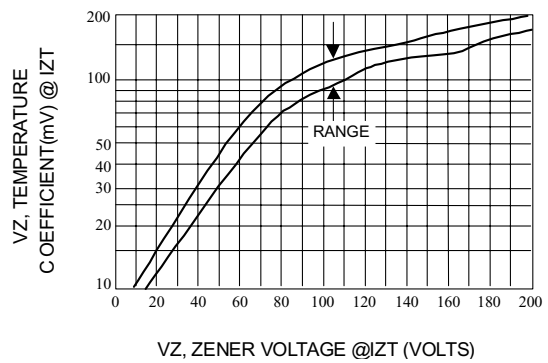


Fig. 6-UNITS 10 TO 200 VOLTS

RATING AND CHARACTERISTICS CURVES  
SMB2EZ5.1 D5 THRU SMB2EZ75D5

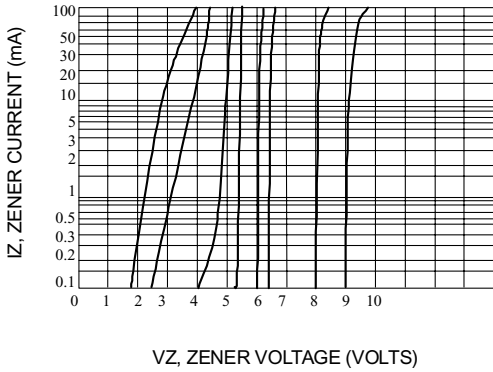


Fig. 7-V<sub>Z</sub> = 3.9 THRU 10 VOLTS

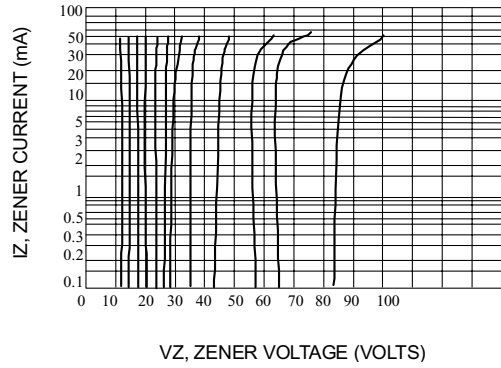


Fig. 8-V<sub>Z</sub> = 12 THRU 82 VOLTS

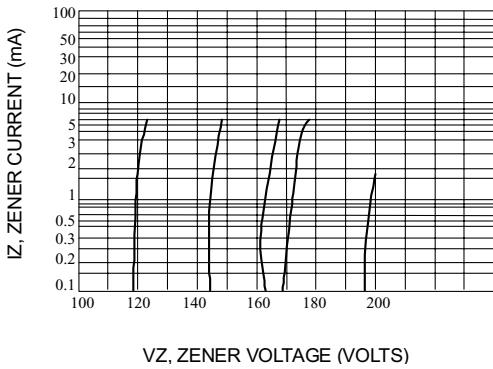


Fig. 9-V<sub>Z</sub> = 100 THRU 200 VOLTS

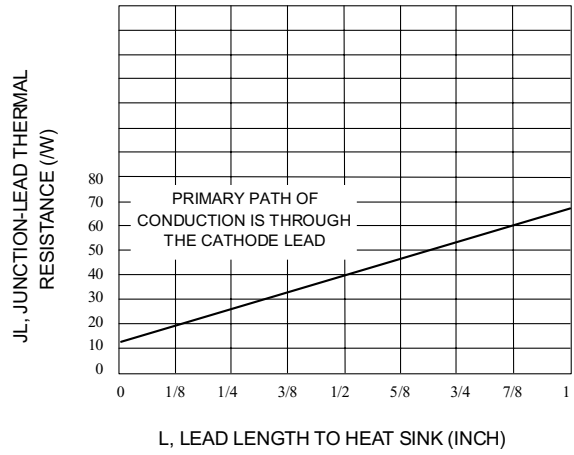


Fig. 10-TYPICAL THERMAL RESISTANCE



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Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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