

## SMB2EZ5.1D5~SMB2EZ75D5

### ZENER DIODES

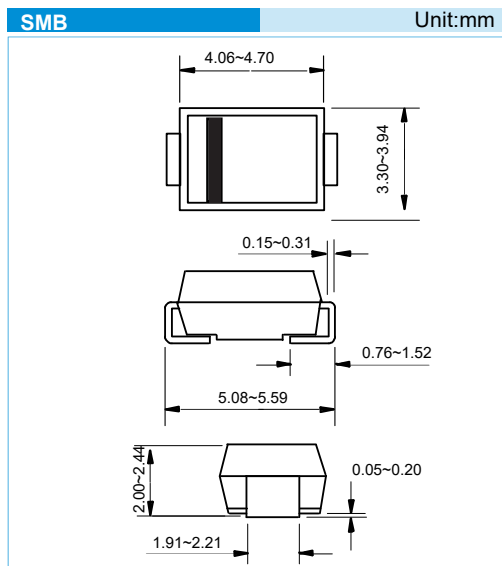
**VOLTAGE** 5.1 to 75 Volt **POWER** 2.0 Watt

#### FEATURES

- Excellent clamping capability
- Glass Passivated Junction
- Low Profile Package
- Low Zener Impedance
- Lead free in compliance with EU RoHS

#### MECHANICAL DATA

- Case Material: Molded Plastic.
- UL Flammability Classification Rating 94V-0



### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

| Characteristic                              | Symbol          | Value    | Unit |
|---------------------------------------------|-----------------|----------|------|
| Forward Voltage @ $I_F = 200\text{mA}$      | $V_F$           | 1.5      | V    |
| Power Dissipation                           | $P_d$           | 2.0      | W    |
| Thermal Resistance from Junction to Ambient | $R_{\theta JA}$ | 63       | °C/W |
| Junction Temperature                        | $T_j$           | 150      | °C   |
| Storage Temperature Range                   | $T_{stg}$       | -55~+150 | °C   |

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### ELECTRICAL CHARACTERISTICS @25°C

| Type No.<br>(Note 1.) | Nominal Zener<br>Voltage<br>V <sub>Z</sub> @I <sub>ZT</sub><br>volts<br>(Note 2.) | Test<br>current<br>I <sub>ZT</sub><br>mA | Maximum Zener Impedance (Note 3)  |                                   |                 | Leakage Current |                | Maximum<br>Zener Current<br>I <sub>ZM</sub><br>m A |
|-----------------------|-----------------------------------------------------------------------------------|------------------------------------------|-----------------------------------|-----------------------------------|-----------------|-----------------|----------------|----------------------------------------------------|
|                       |                                                                                   |                                          | 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> |                                                    |
|                       |                                                                                   |                                          | Ohms                              | Ohms                              | mA              | uA Max          | Volts          |                                                    |
| SMB2EZ5.1D5           | 5.1                                                                               | 98                                       | 3.5                               | 600                               | 1               | 5.0             | 1.0            | 356                                                |
| SMB2EZ5.6D5           | 5.6                                                                               | 89.5                                     | 2.5                               | 500                               | 1               | 5.0             | 2.0            | 324                                                |
| SMB2EZ6.2D5           | 6.2                                                                               | 80.5                                     | 1.5                               | 700                               | 1               | 5.0             | 3.0            | 292                                                |
| SMB2EZ6.8D5           | 6.8                                                                               | 73.5                                     | 2.0                               | 700                               | 1               | 5.0             | 4.0            | 266                                                |
| SMB2EZ7.5D5           | 7.5                                                                               | 66.5                                     | 2.0                               | 700                               | 0.5             | 5.0             | 5.0            | 242                                                |
| SMB2EZ8.2D5           | 8.2                                                                               | 61                                       | 2.3                               | 700                               | 0.5             | 5.0             | 6.0            | 220                                                |
| SMB2EZ9.1D5           | 9.1                                                                               | 55                                       | 2.5                               | 700                               | 0.5             | 3.0             | 7.0            | 200                                                |
| SMB2EZ10D5            | 10                                                                                | 50                                       | 3.5                               | 700                               | 0.25            | 3.0             | 7.6            | 182                                                |
| SMB2EZ11D5            | 11                                                                                | 45.5                                     | 4.0                               | 700                               | 0.25            | 1.0             | 8.4            | 166                                                |
| SMB2EZ12D5            | 12                                                                                | 41.5                                     | 4.5                               | 700                               | 0.25            | 1.0             | 9.1            | 152                                                |
| SMB2EZ13D5            | 13                                                                                | 38.5                                     | 5.0                               | 700                               | 0.25            | 0.5             | 9.9            | 138                                                |
| SMB2EZ14D5            | 14                                                                                | 35.7                                     | 5.5                               | 700                               | 0.25            | 0.5             | 10.6           | 130                                                |
| SMB2EZ15D5            | 15                                                                                | 33.4                                     | 7.0                               | 700                               | 0.25            | 0.5             | 11.4           | 122                                                |
| SMB2EZ16D5            | 16                                                                                | 31.2                                     | 8.0                               | 700                               | 0.25            | 0.5             | 12.2           | 114                                                |
| SMB2EZ17D5            | 17                                                                                | 29.4                                     | 9.0                               | 750                               | 0.25            | 0.5             | 13.0           | 107                                                |
| SMB2EZ18D5            | 18                                                                                | 27.8                                     | 10                                | 750                               | 0.25            | 0.5             | 13.7           | 100                                                |
| SMB2EZ19D5            | 19                                                                                | 26.3                                     | 11                                | 750                               | 0.25            | 0.5             | 14.4           | 95                                                 |
| SMB2EZ20D5            | 20                                                                                | 25                                       | 11                                | 750                               | 0.25            | 0.5             | 15.2           | 90                                                 |
| SMB2EZ22D5            | 22                                                                                | 22.8                                     | 12                                | 750                               | 0.25            | 0.5             | 16.7           | 82                                                 |
| SMB2EZ24D5            | 24                                                                                | 20.8                                     | 13                                | 750                               | 0.25            | 0.5             | 18.2           | 76                                                 |
| SMB2EZ27D5            | 27                                                                                | 18.5                                     | 18                                | 750                               | 0.25            | 0.5             | 20.6           | 68                                                 |
| SMB2EZ30D5            | 30                                                                                | 16.6                                     | 20                                | 1000                              | 0.25            | 0.5             | 22.5           | 60                                                 |
| SMB2EZ33D5            | 33                                                                                | 15.1                                     | 23                                | 1000                              | 0.25            | 0.5             | 25.1           | 55                                                 |
| SMB2EZ36D5            | 36                                                                                | 13.9                                     | 25                                | 1000                              | 0.25            | 0.5             | 27.4           | 50                                                 |
| SMB2EZ39D5            | 39                                                                                | 12.8                                     | 30                                | 1000                              | 0.25            | 0.5             | 29.7           | 47                                                 |
| SMB2EZ43D5            | 43                                                                                | 11.6                                     | 35                                | 1500                              | 0.25            | 0.5             | 32.7           | 43                                                 |
| SMB2EZ47D5            | 47                                                                                | 10.6                                     | 40                                | 1500                              | 0.25            | 0.5             | 35.8           | 39                                                 |
| SMB2EZ51D5            | 51                                                                                | 9.8                                      | 48                                | 1500                              | 0.25            | 0.5             | 38.8           | 36                                                 |
| SMB2EZ56D5            | 56                                                                                | 9.0                                      | 55                                | 2000                              | 0.25            | 0.5             | 42.6           | 32                                                 |
| SMB2EZ62D5            | 62                                                                                | 8.1                                      | 60                                | 2000                              | 0.25            | 0.5             | 47.1           | 29                                                 |
| SMB2EZ68D5            | 68                                                                                | 7.4                                      | 75                                | 2000                              | 0.25            | 0.5             | 51.7           | 27                                                 |
| SMB2EZ75D5            | 75                                                                                | 6.7                                      | 90                                | 2000                              | 0.25            | 0.5             | 56.0           | 24                                                 |

#### Notes:

1. TOLERANCES - Suffix indicates 5% tolerance any other tolerance will be considered as a special device.
2. ZENER VOLTAGE (V<sub>Z</sub>) MEASUREMENT - guarantees the zener voltage when measured at 40 ms from the diode body, and an ambient temperature of 25
3. ZENER IMPEDANCE (Z<sub>Z</sub>) DERIVATION - The zener impedance is derived from the 60 cycle ac voltage,

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### RATING AND CHARACTERISTIC CURVES

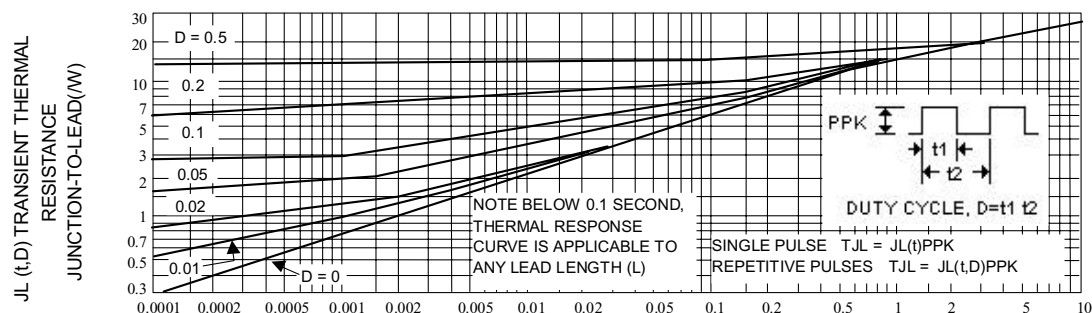


Fig. 1-TYPICAL THERMAL RESPONSE

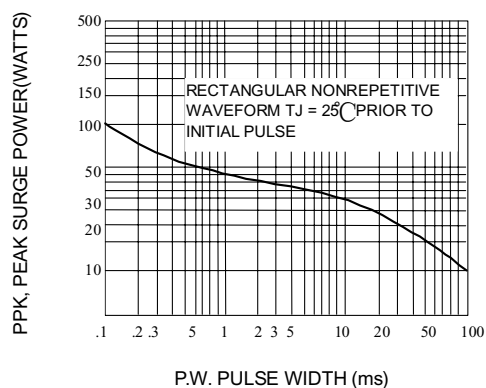


Fig. 2-MAXIMUM SURGE POWER

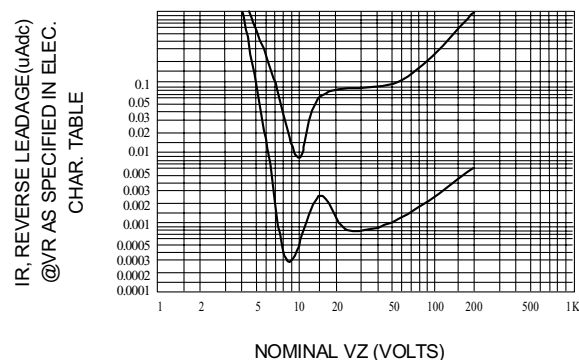


Fig. 3-TYPICAL REVERSE LEAKAGE

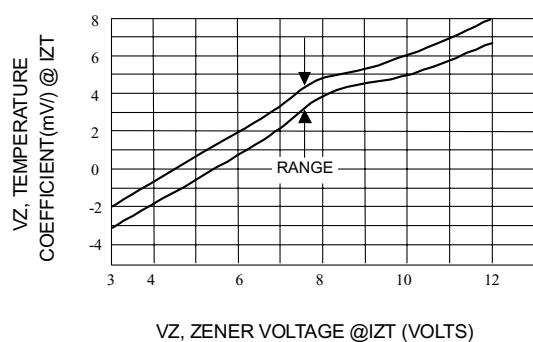


Fig. 4-UNITS 5.1 TO 12 VOLTS

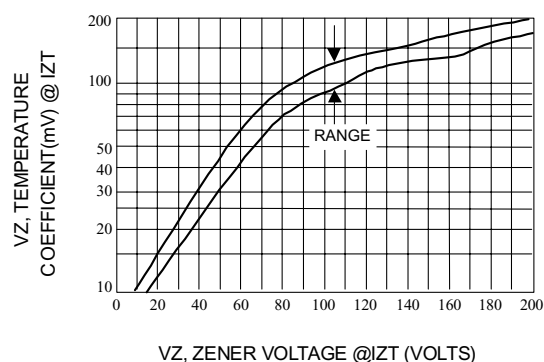


Fig. 5-UNITS 10 TO 200 VOLTS

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### ORDER INFORMATION

- Packing information

| Part Number            | Case | Reel Size | QUANTITY |
|------------------------|------|-----------|----------|
| SMB2EZ5.1D5~SMB2EZ75D5 | SMB  | 13 Inch   | 3000     |