

SMB2EZ2.7D5 - SMB2EZ330D5

V_Z: 2.7 to 330 V

P_D: 2 W

Surface Mount Zener Diodes

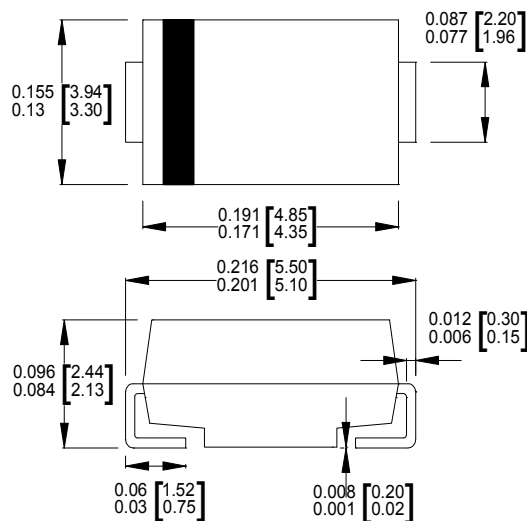
Features

- Glass passivated chip
- Low leakage
- Built-in strain relief
- Low inductance
- High peak reverse power dissipation
- Lead (Pb)-free component
- For use in stabilizing and clipping with high power rating

Mechanical Data

- Case: Molded plastic
- Epoxy: UL 94V-0 rate flame retardant
- Lead: Solderable per MIL-STD-750, method 2026
- Polarity: Color band denotes cathode end
- Mounting position: Any

SMB/ DO-214AA



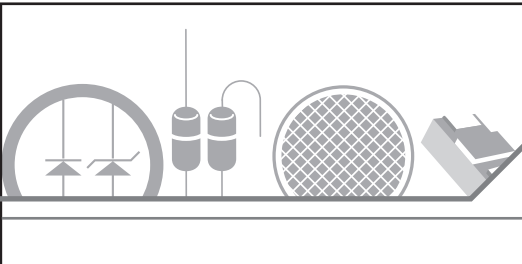
Dimensions : inch [mm]

Maximum Ratings(T_A=25°C unless otherwise noted)

| Parameter | Symbol | Value | UNIT |
|---|------------------|---------------|------|
| DC power dissipation at T _L = 50 °C ⁽¹⁾ | P _D | 2 | W |
| Maximum forward voltage at I _F = 200 mA | V _F | 1.5 | V |
| Junction temperature range | T _J | - 55 to + 175 | °C |
| Storage temperature range | T _{STG} | - 55 to + 175 | °C |

Note:

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



Ratings and Characteristics Curves ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

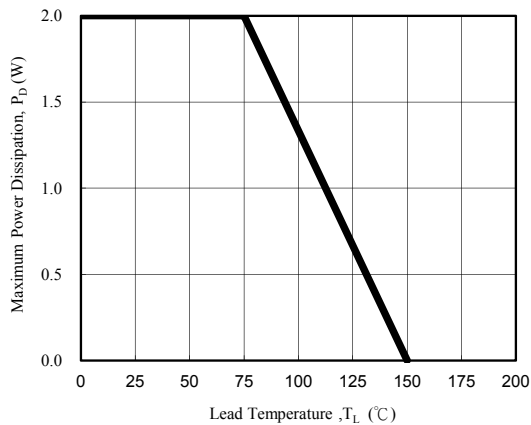


Fig. 1 - Power Temperature Derating Curve

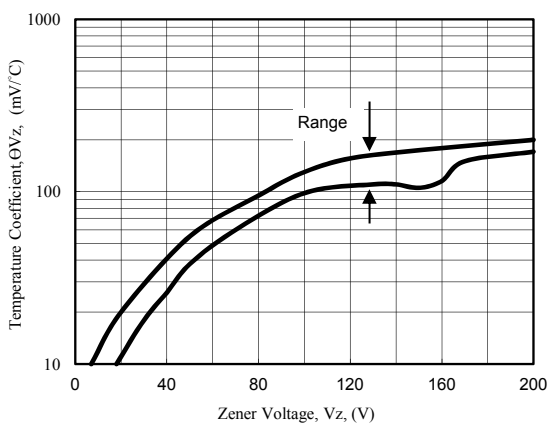


Fig. 2 - Temperature Coefficients v.s. Zener Voltage

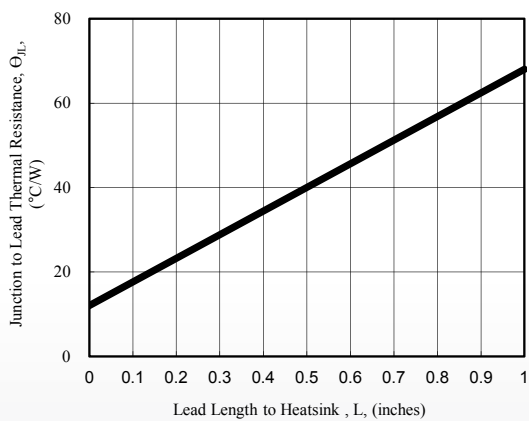


Fig. 3 - Typical Thermal Resistance v.s. Lead Length

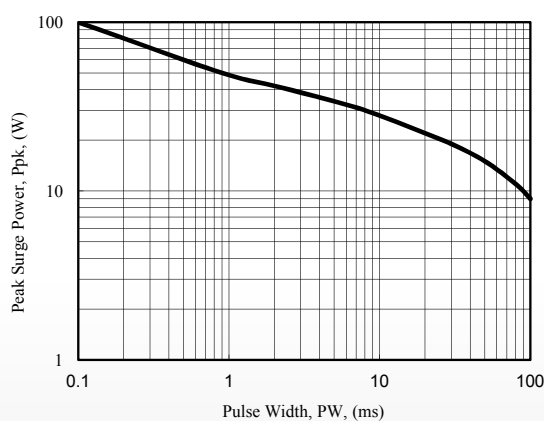


Fig. 4 - Maximum Surge Power

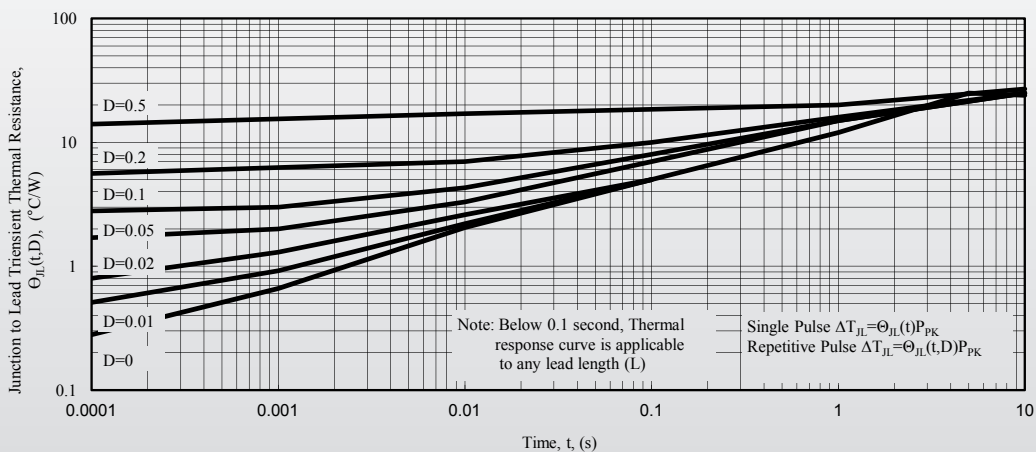
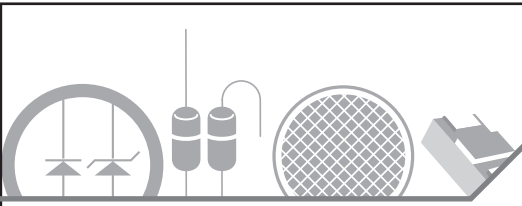


Fig. 5 - Typical Thermal Response L, Lead Length=3/8inch

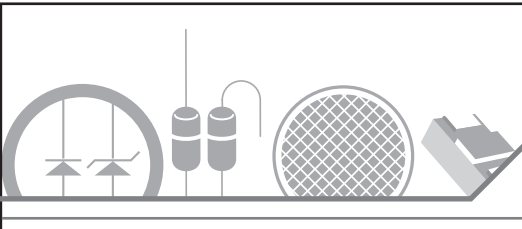


Electrical Characteristics($T_A=25^{\circ}\text{C}$ unless otherwise noted)

| Part Number | Device Marking Code | Nominal Zener Voltage | | Maximum Zener Impedance | | | Maximum Reverse Leakage Current | | Maximum DC 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) | (Ω) | (Ω) | (mA) | (μA) | (V) | (mA) |
| SMB2EZ2.7D5 | 2H0 | 2.7 | 80.0 | 10.0 | 400 | 1.00 | 100 | 1.0 | 670 |
| SMB2EZ3.0D5 | 2H1 | 3.0 | 160.0 | 8.0 | 400 | 1.00 | 100 | 1.0 | 603 |
| SMB2EZ3.3D5 | 2H2 | 3.3 | 145.0 | 8.0 | 400 | 1.00 | 80 | 1.0 | 548 |
| SMB2EZ3.6D5 | 2H3 | 3.6 | 139.0 | 5.0 | 400 | 1.00 | 80 | 1.0 | 502 |
| SMB2EZ3.9D5 | 2H4 | 3.9 | 128.0 | 5.0 | 400 | 1.00 | 30 | 1.0 | 464 |
| SMB2EZ4.3D5 | 2H5 | 4.3 | 116.0 | 4.5 | 400 | 1.00 | 20 | 1.0 | 421 |
| SMB2EZ4.7D5 | 2H6 | 4.7 | 106.0 | 4.5 | 550 | 1.00 | 5.0 | 1.0 | 385 |
| SMB2EZ5.1D5 | 2H7 | 5.1 | 98.0 | 3.5 | 600 | 1.00 | 5.0 | 1.0 | 354 |
| SMB2EZ5.6D5 | 2H8 | 5.6 | 89.5 | 2.5 | 500 | 1.00 | 5.0 | 2.0 | 323 |
| SMB2EZ6.2D5 | 2A0 | 6.2 | 80.5 | 1.5 | 700 | 1.00 | 5.0 | 3.0 | 292 |
| SMB2EZ6.8D5 | 2A1 | 6.8 | 73.5 | 2.0 | 700 | 1.00 | 5.0 | 4.0 | 266 |
| SMB2EZ7.5D5 | 2A2 | 7.5 | 66.5 | 2.0 | 700 | 0.50 | 5.0 | 5.0 | 242 |
| SMB2EZ8.2D5 | 2A3 | 8.2 | 61.0 | 2.3 | 700 | 0.50 | 5.0 | 6.0 | 220 |
| SMB2EZ9.1D5 | 2A4 | 9.1 | 55.0 | 2.5 | 700 | 0.50 | 3.0 | 7.0 | 200 |
| SMB2EZ10D5 | 2A5 | 10 | 50.0 | 3.5 | 700 | 0.25 | 3.0 | 7.6 | 182 |
| SMB2EZ11D5 | 2A6 | 11 | 45.5 | 4.0 | 700 | 0.25 | 1.0 | 8.4 | 166 |
| SMB2EZ12D5 | 2A7 | 12 | 41.5 | 4.5 | 700 | 0.25 | 1.0 | 9.1 | 152 |
| SMB2EZ13D5 | 2A8 | 13 | 38.5 | 5.0 | 700 | 0.25 | 0.5 | 9.9 | 138 |
| SMB2EZ14D5 | 2A9 | 14 | 35.7 | 5.5 | 700 | 0.25 | 0.5 | 10.6 | 130 |
| SMB2EZ15D5 | 2B0 | 15 | 33.4 | 7.0 | 700 | 0.25 | 0.5 | 11.4 | 122 |
| SMB2EZ16D5 | 2B1 | 16 | 31.2 | 8.0 | 700 | 0.25 | 0.5 | 12.2 | 114 |
| SMB2EZ17D5 | 2B2 | 17 | 29.4 | 9.0 | 750 | 0.25 | 0.5 | 13.0 | 107 |
| SMB2EZ18D5 | 2B3 | 18 | 27.8 | 10.0 | 750 | 0.25 | 0.5 | 13.7 | 100 |
| SMB2EZ19D5 | 2B4 | 19 | 26.3 | 11.0 | 750 | 0.25 | 0.5 | 14.4 | 95 |
| SMB2EZ20D5 | 2B5 | 20 | 25.0 | 11.0 | 750 | 0.25 | 0.5 | 15.2 | 90 |
| SMB2EZ22D5 | 2B6 | 22 | 22.8 | 12.0 | 750 | 0.25 | 0.5 | 16.7 | 82 |
| SMB2EZ24D5 | 2B7 | 24 | 20.8 | 13.0 | 750 | 0.25 | 0.5 | 18.2 | 76 |
| SMB2EZ27D5 | 2B8 | 27 | 18.5 | 18.0 | 750 | 0.25 | 0.5 | 20.6 | 68 |
| SMB2EZ30D5 | 2B9 | 30 | 16.6 | 20.0 | 1000 | 0.25 | 0.5 | 22.5 | 60 |
| SMB2EZ33D5 | 2C0 | 33 | 15.1 | 23.0 | 1000 | 0.25 | 0.5 | 25.1 | 55 |
| SMB2EZ36D5 | 2C1 | 36 | 13.9 | 25.0 | 1000 | 0.25 | 0.5 | 27.4 | 50 |
| SMB2EZ39D5 | 2C2 | 39 | 12.8 | 30.0 | 1000 | 0.25 | 0.5 | 29.7 | 47 |
| SMB2EZ43D5 | 2C3 | 43 | 11.6 | 35.0 | 1500 | 0.25 | 0.5 | 32.7 | 43 |
| SMB2EZ47D5 | 2C4 | 47 | 10.6 | 40.0 | 1500 | 0.25 | 0.5 | 35.8 | 39 |
| SMB2EZ51D5 | 2C5 | 51 | 9.8 | 48.0 | 1500 | 0.25 | 0.5 | 38.8 | 36 |
| SMB2EZ56D5 | 2C6 | 56 | 9.0 | 55.0 | 2000 | 0.25 | 0.5 | 42.6 | 32 |
| SMB2EZ62D5 | 2C7 | 62 | 8.1 | 60.0 | 2000 | 0.25 | 0.5 | 47.1 | 29 |
| SMB2EZ68D5 | 2C8 | 68 | 7.4 | 75.0 | 2000 | 0.25 | 0.5 | 51.7 | 27 |
| SMB2EZ75D5 | 2C9 | 75 | 6.7 | 90.0 | 2000 | 0.25 | 0.5 | 56.0 | 24 |
| SMB2EZ82D5 | 2F0 | 82 | 6.1 | 100 | 3000 | 0.25 | 0.5 | 62.2 | 22 |
| SMB2EZ91D5 | 2F1 | 91 | 5.5 | 125 | 3000 | 0.25 | 0.5 | 69.2 | 20 |
| SMB2EZ100D5 | 2F2 | 100 | 5.0 | 175 | 3000 | 0.25 | 0.5 | 76.0 | 18.0 |
| SMB2EZ110D5 | 2F3 | 110 | 4.5 | 250 | 4000 | 0.25 | 0.5 | 83.6 | 17.0 |
| SMB2EZ120D5 | 2F4 | 120 | 4.2 | 325 | 4500 | 0.25 | 0.5 | 91.2 | 15.0 |

Notes :

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



Electrical Characteristics($T_A=25^{\circ}\text{C}$ unless otherwise noted)

| Part Number | Device Marking Code | Nominal Zener Voltage | | Maximum Zener Impedance | | | Maximum Reverse Leakage Current | | Maximum DC 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) | (Ω) | (Ω) | (mA) | (μA) | (V) | (mA) |
| SMB2EZ130D5 | 2F5 | 130 | 3.8 | 400 | 5000 | 0.25 | 0.5 | 98.8 | 14.0 |
| SMB2EZ140D5 | 2F6 | 140 | 3.6 | 500 | 5500 | 0.25 | 0.5 | 106.4 | 13.0 |
| SMB2EZ150D5 | 2F7 | 150 | 3.3 | 575 | 6000 | 0.25 | 0.5 | 114.0 | 12.0 |
| SMB2EZ160D5 | 2F8 | 160 | 3.1 | 650 | 6500 | 0.25 | 0.5 | 121.6 | 11.0 |
| SMB2EZ170D5 | 2F9 | 170 | 2.9 | 675 | 7000 | 0.25 | 0.5 | 130.4 | 11.0 |
| SMB2EZ180D5 | 2G1 | 180 | 2.8 | 725 | 7000 | 0.25 | 0.5 | 136.8 | 10.0 |
| SMB2EZ190D5 | 2G2 | 190 | 2.6 | 825 | 8000 | 0.25 | 0.5 | 144.8 | 10.0 |
| SMB2EZ200D5 | 2G3 | 200 | 2.5 | 1900 | 9990 | 0.25 | 0.5 | 152.0 | 9.0 |
| SMB2EZ220D5 | 2G4 | 220 | 2.0 | 2000 | 8500 | 0.25 | 0.5 | 167.0 | 8.0 |
| SMB2EZ270D5 | 2G5 | 270 | 1.6 | 2200 | 8500 | 0.25 | 0.5 | 205.0 | 6.7 |
| SMB2EZ300D5 | 2G6 | 300 | 1.5 | 2200 | 9000 | 0.25 | 0.5 | 228.0 | 5.9 |
| SMB2EZ330D5 | 2G7 | 330 | 1.4 | 2300 | 9000 | 0.25 | 0.5 | 250.0 | 5.4 |