



Micro Commercial Components



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**SMA1EZ110D5HE3
 THRU
 SMA1EZ330D5HE3**

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
- AEC-Q101 Qualified
- Halogen free

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)

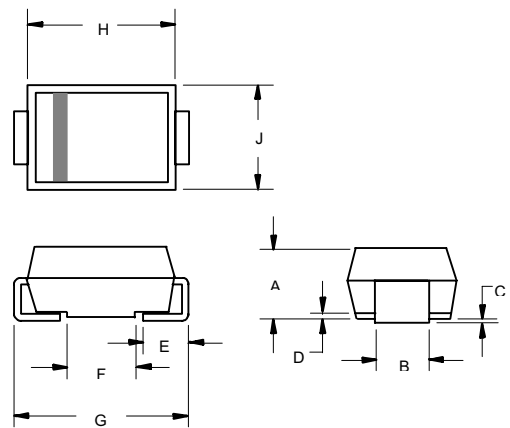
Maximum Ratings @ 25°C Unless Otherwise Specified

| | | | |
|---|---------------------------------------|------------------------|--------------|
| DC Power Dissipation at T _L = 50°C (Note 2) | P_D | 1.0 | Watts |
| Maximum forward voltage at I _F =200mA | V_F | 1.2 | Volts |
| Maximum thermal resistance junction to ambient air(Note3) | R_{thJA} | 170 | K/W |
| Operating And Storage Temperature Range | T_J, T_{STG} | -55°C to +175°C | |

- NOTES: 1. High Temperature Solder Exemptions Applied, see EU Directive Annex 7.
 2. T_L=Lead temperature at 3/8"(9.5mm) from body
 3. Valid provided that leads are kept at ambient temperature at a distance of 10 mm from case

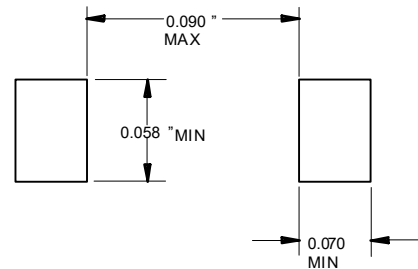
**1 W Glass Passivated
 Junction Silicon
 Zener Diode
 110-330 Volts**

**DO-214AC
 (SMA) (LEAD FRAME)**



| DIM | INCHES | | MM | | NOTE |
|-----|--------|------|------|------|------|
| | MIN | MAX | MIN | MAX | |
| A | .079 | .096 | 2.00 | 2.44 | |
| B | .050 | .064 | 1.27 | 1.63 | |
| C | .002 | .008 | .05 | .20 | |
| D | --- | .02 | --- | .51 | |
| E | .030 | .060 | .76 | 1.52 | |
| F | .065 | .091 | 1.65 | 2.32 | |
| G | .189 | .220 | 4.80 | 5.59 | |
| H | .157 | .181 | 4.00 | 4.60 | |
| J | .090 | .115 | 2.25 | 2.92 | |

**SUGGESTED SOLDER
 PAD LAYOUT**



SMA1EZ110D5HE3 THRU SMA1EZ330D5HE3

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

| Type No. | Nominal Zener Voltage $V_Z @ I_{ZT}$ Volts (Note 1,2) | Test Current I_{ZT} mA | Maximum Zener Impedance (Note 3) | | | Leakage Current | | Maximum Zener Current I_{ZM} mA | Surge Current @ $T_A=25^\circ\text{C}$ $I_{ZSM}-A$ | Device Marking |
|----------------|---|--------------------------------|----------------------------------|-------------------|----------|-------------------|-------|---|--|----------------|
| | | | $Z_{ZT} @ I_{ZT}$ | $Z_{ZK} @ I_{ZK}$ | I_{ZK} | I_R | V_R | | | |
| | | | Ohms | Ohms | mA | $\mu\text{A Max}$ | Volts | | | |
| SMA1EZ110D5HE3 | 110 | 2.3 | 450 | 4000 | 0.25 | 0.1 | 83.6 | 8.6 | 40 | 11Z |
| SMA1EZ120D5HE3 | 120 | 2.0 | 550 | 4500 | 0.25 | 0.1 | 91.2 | 7.8 | 37 | 12Z |
| SMA1EZ130D5HE3 | 130 | 1.9 | 700 | 5000 | 0.25 | 0.1 | 98.8 | 7.0 | 34 | 13Z |
| SMA1EZ150D5HE3 | 150 | 1.7 | 1000 | 6000 | 0.25 | 0.1 | 114.0 | 6.4 | 30 | 15Z |
| SMA1EZ160D5HE3 | 160 | 1.6 | 1100 | 6500 | 0.25 | 0.1 | 121.6 | 5.8 | 28 | 16Z |
| SMA1EZ180D5HE3 | 180 | 1.4 | 1200 | 7000 | 0.25 | 0.1 | 136.8 | 5.2 | 25 | 18Z |
| SMA1EZ200D5HE3 | 200 | 1.2 | 1900 | 9990 | 0.25 | 0.1 | 152.0 | 4.7 | 22 | 20Z |
| SMA1EZ220D5HE3 | 220 | 1.0 | 1600 | 8000 | 0.25 | 0.1 | 167.2 | 4.0 | 20 | 22Z |
| SMA1EZ240D5HE3 | 240 | 0.9 | 1800 | 8500 | 0.25 | 0.1 | 182.4 | 3.8 | 19 | 24Z |
| SMA1EZ250D5HE3 | 250 | 0.9 | 2000 | 9000 | 0.25 | 0.1 | 190.0 | 3.6 | 18 | 25Z |
| SMA1EZ270D5HE3 | 270 | 0.8 | 2100 | 9000 | 0.25 | 0.1 | 205.0 | 3.3 | 16 | 27Z |
| SMA1EZ300D5HE3 | 300 | 0.8 | 2300 | 9500 | 0.25 | 0.1 | 228.0 | 3.0 | 15 | 30Z |
| SMA1EZ330D5HE3 | 330 | 0.7 | 2500 | 9500 | 0.25 | 0.1 | 250.2 | 2.7 | 13 | 33Z |

Note:

- (1) Specials Available Include:
 - A: Nominal zener voltages between the voltages shown and tighter voltage Tolerances.
 - B: Matched sets.
- (2) Zener Voltage (V_Z) Measurement. Guarantess the zener voltage when measured at 90 seconds while maintaining the lead temperature (T_L) at $30^\circ\text{C} + \text{or} - 1^\circ\text{C}$, from the diode body.
- (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} .

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

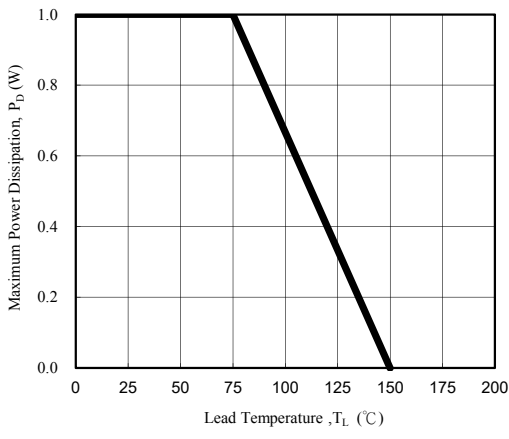


Fig. 1 - Power Temperature Derating Curve

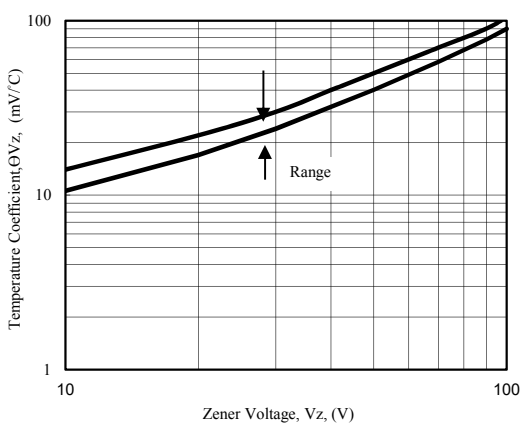


Fig. 2 - Temperature Coefficients v.s. Zener Voltage

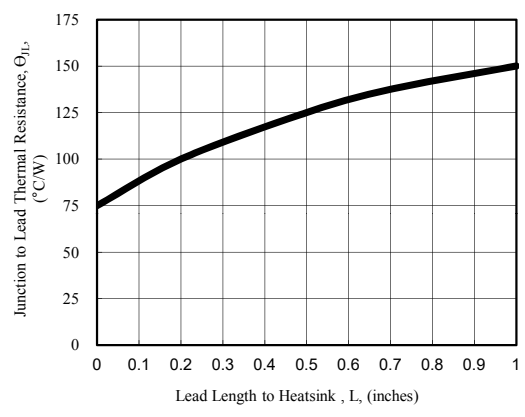


Fig. 3 - Typical Thermal Resistance v.s. Lead Length

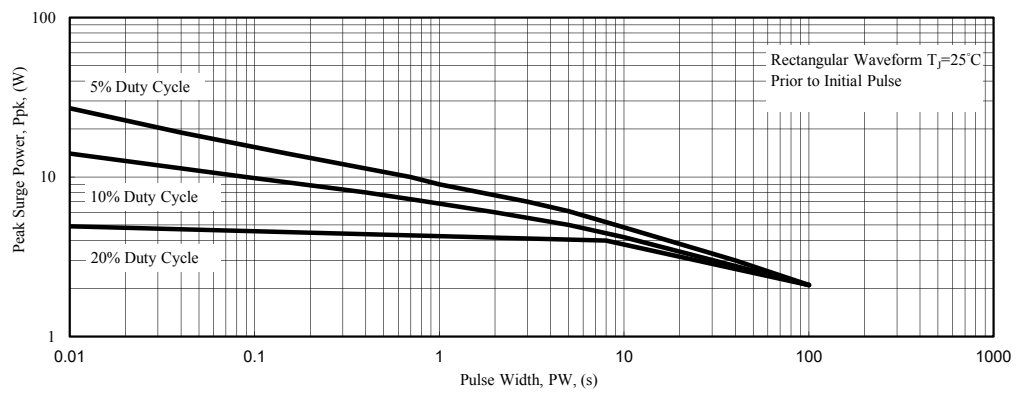


Fig. 4 - Maximum Surge Power



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Ordering Information :

| Device | Packing |
|----------------|-------------------------|
| Part Number-TP | Tape&Reel: 7.5Kpcs/Reel |

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