

Silicon Planar Zener Diodes

FEATURES

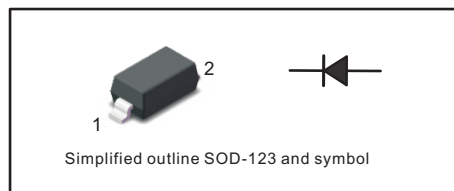
- Total power dissipation: Max. 1 W.
- Wide zener reverse voltage range 3.3V to 330V.
- Small plastic package suitable for surface mounted design.

MECHANICAL DATA

- Case: SOD-123
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 16mg 0.00056oz

PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1 | Cathode |
| 2 | Anode |



Absolute Maximum Ratings And Characteristics (Ta = 25 °C)

| Parameter | Symbol | Value | Unit |
|---|-----------------|------------|--------------------|
| Power Dissipation at $T_L=75^\circ\text{C}$ | P_D | 1 | W |
| Forward Voltage at $I_F = 200\text{ mA}$ | V_F | 1.2 | V |
| Typical thermal resistance junction to ambient ⁽¹⁾ | $R_{\theta JA}$ | 300 | $^\circ\text{C/W}$ |
| Operating and Storage Temperature Range | T_j, T_{stg} | -55 ~ +150 | $^\circ\text{C}$ |

(1) Thermal resistance from junction to ambient at P.C.B. mounted with 2.0" X 2.0" (5 X 5 cm) copper areas pads.

Fig.1 Maximum Continuous Power Derating

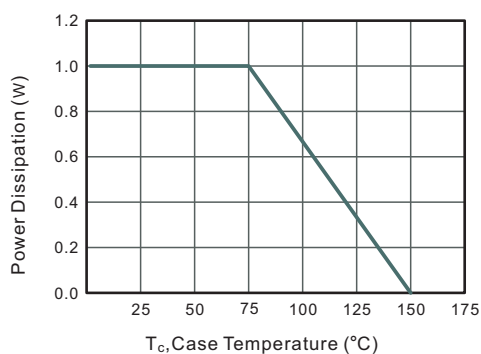
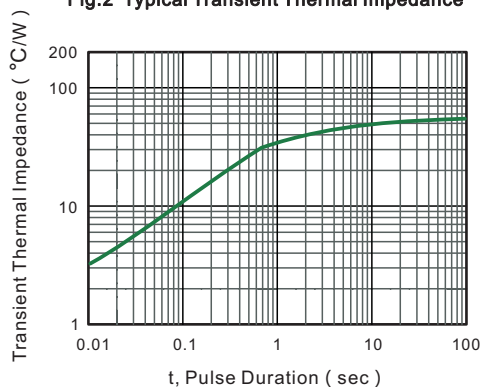


Fig.2 Typical Transient Thermal Impedance



Characteristics at Ta = 25°C

| Type | Marking | Zener Voltage Range ⁽¹⁾ | | | I _{ZT} | Dynamic Impedance | Reverse Current | | Admissible Zener Current |
|---------|---------|--|-----------|-----------|-----------------|-------------------|--|----------------|--------------------------|
| | | V _{ZT} (at I _{ZT}) | | | | | Z _{ZT} (at I _{ZT}) | I _R | |
| | | Min (V) | Nom (V) | Max (V) | (mA) | Max (Ω) | Max (μA) | (V) | I _{ZM} (mA) |
| MM1W3V3 | FHD | 3.10 | 3.3 | 3.50 | 75 | 10 | 100 | 1 | 285 |
| MM1W3V6 | FHE | 3.40 | 3.6 | 3.80 | 69 | 10 | 100 | 1 | 263 |
| MM1W3V9 | FHF | 3.70 | 3.9 | 4.10 | 64 | 9.0 | 50 | 1 | 243 |
| MM1W4V3 | FHG | 4.06 | 4.3 | 4.56 | 58 | 9.0 | 25 | 1 | 219 |
| MM1W4V7 | FHJ | 4.50 | 4.7 | 4.93 | 53 | 8.0 | 10 | 1 | 203 |
| MM1W5V1 | FHK | 4.84 | 5.1 | 5.36 | 49 | 7.0 | 10 | 1 | 186 |
| MM1W5V6 | FHL | 5.32 | 5.6 | 5.92 | 45 | 5.0 | 10 | 2 | 170 |
| MM1W6V2 | FHN | 5.86 | 6.2 | 6.51 | 41 | 2.0 | 10 | 3 | 154 |
| MM1W6V8 | FHO | 6.46 | 6.8 | 7.18 | 37 | 3.5 | 10 | 4 | 140 |
| MM1W7V5 | FHQ | 7.12 | 7.5 | 7.88 | 34 | 4.0 | 10 | 5 | 127 |
| MM1W8V2 | FHR | 7.79 | 8.2 | 8.67 | 31 | 4.5 | 10 | 6 | 116 |
| MM1W9V1 | FHT | 8.60 | 9.1 | 9.59 | 28 | 5.0 | 10 | 7 | 104 |
| MM1W10 | FHU | 9.50 | 10 | 10.5 | 25 | 7.0 | 10 | 7 | 95 |
| MM1W11 | FHV | 10.4 | 11 | 11.6 | 23 | 8.0 | 5 | 8 | 86 |
| MM1W12 | FHW | 11.4 | 12 | 12.6 | 21 | 9.0 | 5 | 9 | 79 |
| MM1W13 | FHX | 12.4 | 13 | 14.1 | 19 | 10 | 5 | 10 | 71 |
| MM1W15 | FHZ | 13.8 | 15 | 15.8 | 17 | 14 | 5 | 11 | 63 |
| MM1W16 | FJA | 15.2 | 16 | 17.1 | 16 | 16 | 5 | 12 | 58 |
| MM1W18 | FJF | 16.8 | 18 | 19.2 | 14 | 20 | 5 | 13 | 52 |
| MM1W20 | FJG | 19.0 | 20 | 21.2 | 13 | 22 | 5 | 15 | 47 |
| MM1W22 | FJK | 20.8 | 22 | 23.3 | 12 | 23 | 5 | 17 | 43 |
| MM1W24 | FJL | 22.8 | 24 | 26.0 | 11 | 25 | 5 | 18 | 38 |
| MM1W27 | FJN | 25.3 | 27 | 28.9 | 9.5 | 35 | 5 | 21 | 35 |
| MM1W30 | FJQ | 28.2 | 30 | 32.0 | 8.5 | 40 | 5 | 23 | 31 |
| MM1W33 | FJR | 31.3 | 33 | 34.9 | 7.5 | 45 | 5 | 25 | 28 |
| MM1W36 | FJS | 34.2 | 36 | 37.9 | 7.0 | 50 | 5 | 27 | 26 |
| MM1W39 | FJT | 37.2 | 39 | 41.5 | 6.5 | 60 | 5 | 30 | 24 |
| MM1W43 | FLG | 40.9 | 43 | 45.6 | 6.0 | 70 | 1 | 32 | 22 |
| MM1W47 | FLJ | 44.9 | 47 | 49.8 | 5.5 | 80 | 1 | 35 | 20 |
| MM1W51 | FLK | 48.6 | 51 | 54.0 | 5.0 | 95 | 1 | 38 | 18 |
| MM1W56 | FLL | 53.6 | 56 | 58.8 | 4.5 | 110 | 1 | 42 | 17 |
| MM1W62 | FLN | 58.9 | 62 | 65.6 | 4.0 | 125 | 1 | 47 | 15 |
| MM1W68 | FLO | 64.6 | 68 | 71.7 | 3.7 | 150 | 1 | 52 | 14 |
| MM1W75 | FLQ | 71.2 | 75 | 78.8 | 3.3 | 175 | 1 | 56 | 12 |
| MM1W82 | FLR | 77.9 | 82 | 87.0 | 3.0 | 200 | 1 | 62 | 11 |
| MM1W91 | FLT | 86.0 | 91 | 96.0 | 2.8 | 250 | 1 | 69 | 10 |
| MM1W100 | FLU | 95.0 | 100 | 105 | 2.5 | 350 | 1 | 76 | 9.5 |
| MM1W110 | FLV | 104 | 110 | 116 | 2.3 | 450 | 1 | 84 | 8.6 |
| MM1W120 | FLW | 114 | 120 | 127 | 2.0 | 550 | 1 | 91 | 7.8 |
| MM1W135 | FLX | 125 | 135 | 142 | 1.9 | 700 | 1 | 100 | 7.0 |
| MM1W150 | FLZ | 140 | 150 | 157 | 1.7 | 900 | 1 | 110 | 6.3 |
| MM1W165 | FPA | 155 | 165 | 172 | 1.6 | 1100 | 1 | 120 | 5.8 |
| MM1W180 | FPF | 170 | 180 | 191 | 1.4 | 1200 | 1 | 135 | 5.2 |
| MM1W200 | FPG | 189 | 200 | 211 | 1.2 | 1400 | 1 | 150 | 4.7 |
| MM1W220 | FPK | 209 | 220 | 231 | 1.0 | 1600 | 1 | 165 | 4.3 |
| MM1W240 | FPL | 229 | 240 | 251 | 1.0 | 1800 | 1 | 180 | 3.9 |
| MM1W260 | FPM | 249 | 260 | 271 | 1.0 | 2000 | 1 | 190 | 3.7 |
| MM1W280 | FPN | 269 | 280 | 291 | 1.0 | 2100 | 1 | 205 | 3.4 |
| MM1W300 | FPQ | 289 | 300 | 315 | 1.0 | 2300 | 1 | 230 | 3.1 |
| MM1W330 | FLR | 313 | 330 | 346 | 1.0 | 2500 | 1 | 250 | 2.8 |

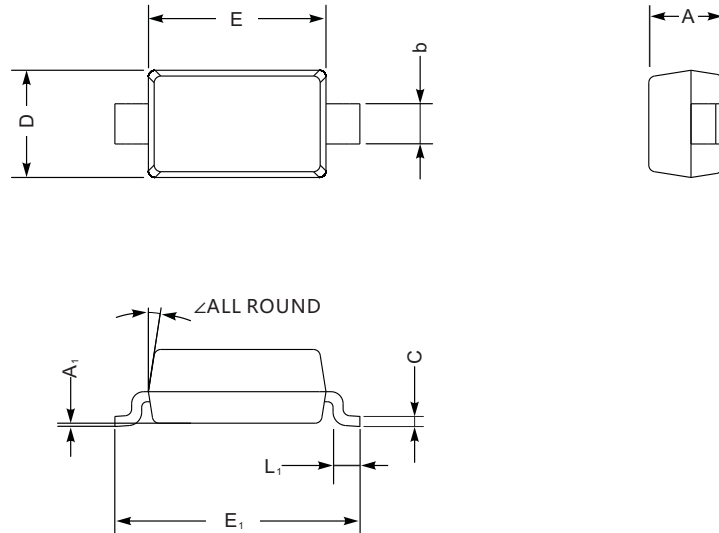
 (1) V_{ZT} is tested with pulses (20 ms)



PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD-123



SOD-123 mechanical data

| UNIT | | A | C | D | E | E ₁ | L ₁ | b | A ₁ | ∠ |
|------|-----|-----|------|-----|-----|----------------|----------------|-----|----------------|----|
| mm | max | 1.3 | 0.22 | 1.8 | 2.8 | 3.9 | 0.45 | 0.7 | 0.2 | 9° |
| | min | 0.9 | 0.09 | 1.5 | 2.5 | 3.6 | 0.25 | 0.5 | — | |
| mil | max | 51 | 8.7 | 71 | 110 | 154 | 18 | 28 | 8 | |
| | min | 35 | 3.5 | 59 | 98 | 142 | 10 | 20 | — | |

The recommended mounting pad size

