

Silicon Planar Zener Diodes

**FEATURES**

- Total power dissipation: Max. 500mW.
- Wide zener reverse voltage range 2.0V to 75V.
- Small plastic package suitable for surface mounted design.
- Tolerance approximately  $\pm 5\%$

**MECHANICAL DATA**

- Case: SOD-123
- Terminals: Solderable per MIL-STD-750, Method 2026

**PINNING**

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

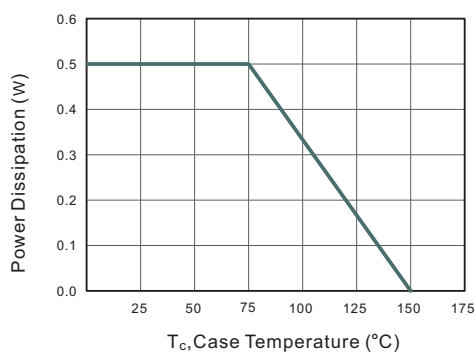


**Absolute Maximum Ratings And Characteristics ( Ta = 25 °C )**

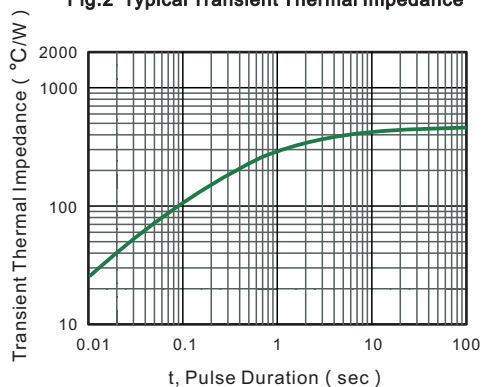
| Parameter   | Symbol          | Value      | Unit                        |
|---|-----------------|------------|-----------------------------|
| Power Dissipation   | $P_{tot}$       | 500        | mW                          |
| Forward Voltage at $I_F = 10\text{ mA}$                       | $V_F$           | 0.9        | V                           |
| Typical thermal resistance junction to ambient <sup>(1)</sup> | $R_{\theta JA}$ | 340        | $^{\circ}\text{C}/\text{W}$ |
| 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" (54 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 <sup>(1)</sup>    |         |         | I <sub>ZT</sub><br>(mA) | Dynamic Impedance<br>Z <sub>ZT</sub> (at I <sub>ZT</sub> )<br>Max (Ω) | Reverse Current            |                          |
|---------|---------|---------------------------------------|---------|---------|-------------------------|---|----------------------------|--------------------------|
|         |         | V <sub>ZT</sub> (at I <sub>ZT</sub> ) |         |         |                         |   | I <sub>R</sub><br>Max (μA) | at V <sub>R</sub><br>(V) |
|         |         | Min (V)                               | Nom (V) | Max (V) |                         |   |                            |                          |
| MM1Z2V0 | 4A      | 1.8                                   | 2.0     | 2.15    | 5                       | 100   | 120                        | 0.5                      |
| MM1Z2V2 | 4B      | 2.08                                  | 2.2     | 2.33    | 5                       | 100   | 120                        | 0.7                      |
| MM1Z2V4 | 4C      | 2.28                                  | 2.4     | 2.56    | 5                       | 100   | 120                        | 1                        |
| MM1Z2V7 | 4D      | 2.5                                   | 2.7     | 2.9     | 5                       | 110   | 120                        | 1                        |
| MM1Z3V0 | 4E      | 2.8                                   | 3.0     | 3.2     | 5                       | 120   | 50                         | 1                        |
| MM1Z3V3 | 4F      | 3.1                                   | 3.3     | 3.5     | 5                       | 130   | 20                         | 1                        |
| MM1Z3V6 | 4H      | 3.4                                   | 3.6     | 3.8     | 5                       | 130   | 10                         | 1                        |
| MM1Z3V9 | 4J      | 3.7                                   | 3.9     | 4.1     | 5                       | 130   | 5                          | 1                        |
| MM1Z4V3 | 4K      | 4                                     | 4.3     | 4.6     | 5                       | 130   | 5                          | 1                        |
| MM1Z4V7 | 4M      | 4.4                                   | 4.7     | 5       | 5                       | 130   | 2                          | 1                        |
| MM1Z5V1 | 4N      | 4.8                                   | 5.1     | 5.4     | 5                       | 130   | 2                          | 1.5                      |
| MM1Z5V6 | 4P      | 5.2                                   | 5.6     | 6       | 5                       | 80  | 1                          | 2.5                      |
| MM1Z6V2 | 4R      | 5.8                                   | 6.2     | 6.6     | 5                       | 50  | 1                          | 3                        |
| MM1Z6V8 | 4X      | 6.4                                   | 6.8     | 7.2     | 5                       | 30  | 0.5                        | 3.5                      |
| MM1Z7V5 | 4Y      | 7                                     | 7.5     | 7.9     | 5                       | 30  | 0.5                        | 4                        |
| MM1Z8V2 | 4Z      | 7.7                                   | 8.2     | 8.7     | 5                       | 30  | 0.5                        | 5                        |
| MM1Z9V1 | 5A      | 8.5                                   | 9.1     | 9.6     | 5                       | 30  | 0.5                        | 6                        |
| MM1Z10  | 5B      | 9.4                                   | 10      | 10.6    | 5                       | 30  | 0.1                        | 7                        |
| MM1Z11  | 5C      | 10.4                                  | 11      | 11.6    | 5                       | 30  | 0.1                        | 8                        |
| MM1Z12  | 5D      | 11.4                                  | 12      | 12.7    | 5                       | 35  | 0.1                        | 9                        |
| MM1Z13  | 5E      | 12.4                                  | 13      | 14.1    | 5                       | 35  | 0.1                        | 10                       |
| MM1Z15  | 5F      | 13.8                                  | 15      | 15.6    | 5                       | 40  | 0.1                        | 11                       |
| MM1Z16  | 5H      | 15.3                                  | 16      | 17.1    | 5                       | 40  | 0.1                        | 12                       |
| MM1Z18  | 5J      | 16.8                                  | 18      | 19.1    | 5                       | 45  | 0.1                        | 13                       |
| MM1Z20  | 5K      | 18.8                                  | 20      | 21.2    | 5                       | 50  | 0.1                        | 15                       |
| MM1Z22  | 5M      | 20.8                                  | 22      | 23.3    | 5                       | 55  | 0.1                        | 17                       |
| MM1Z24  | 5N      | 22.8                                  | 24      | 25.6    | 5                       | 60  | 0.1                        | 19                       |
| MM1Z27  | 5P      | 25.1                                  | 27      | 28.9    | 5                       | 70  | 0.1                        | 21                       |
| MM1Z30  | 5R      | 28                                    | 30      | 32      | 5                       | 80  | 0.1                        | 23                       |
| MM1Z33  | 5X      | 31                                    | 33      | 35      | 5                       | 80  | 0.1                        | 25                       |
| MM1Z36  | 5Y      | 34                                    | 36      | 38      | 5                       | 90  | 0.1                        | 27                       |
| MM1Z39  | 5Z      | 37                                    | 39      | 41      | 2.5                     | 100   | 2                          | 30                       |
| MM1Z43  | 6A      | 40                                    | 43      | 46      | 2.5                     | 130   | 2                          | 33                       |
| MM1Z47  | 6B      | 44                                    | 47      | 50      | 2.5                     | 150   | 2                          | 36                       |
| MM1Z51  | 6C      | 48                                    | 51      | 54      | 2.5                     | 180   | 1                          | 39                       |
| MM1Z56  | 6D      | 52                                    | 56      | 60      | 2.5                     | 180   | 1                          | 43                       |
| MM1Z62  | 6E      | 58                                    | 62      | 66      | 2.5                     | 200   | 0.2                        | 47                       |
| MM1Z68  | 6F      | 64                                    | 68      | 72      | 2.5                     | 250   | 0.2                        | 52                       |
| MM1Z75  | 6H      | 70                                    | 75      | 79      | 2.5                     | 300   | 0.2                        | 57                       |

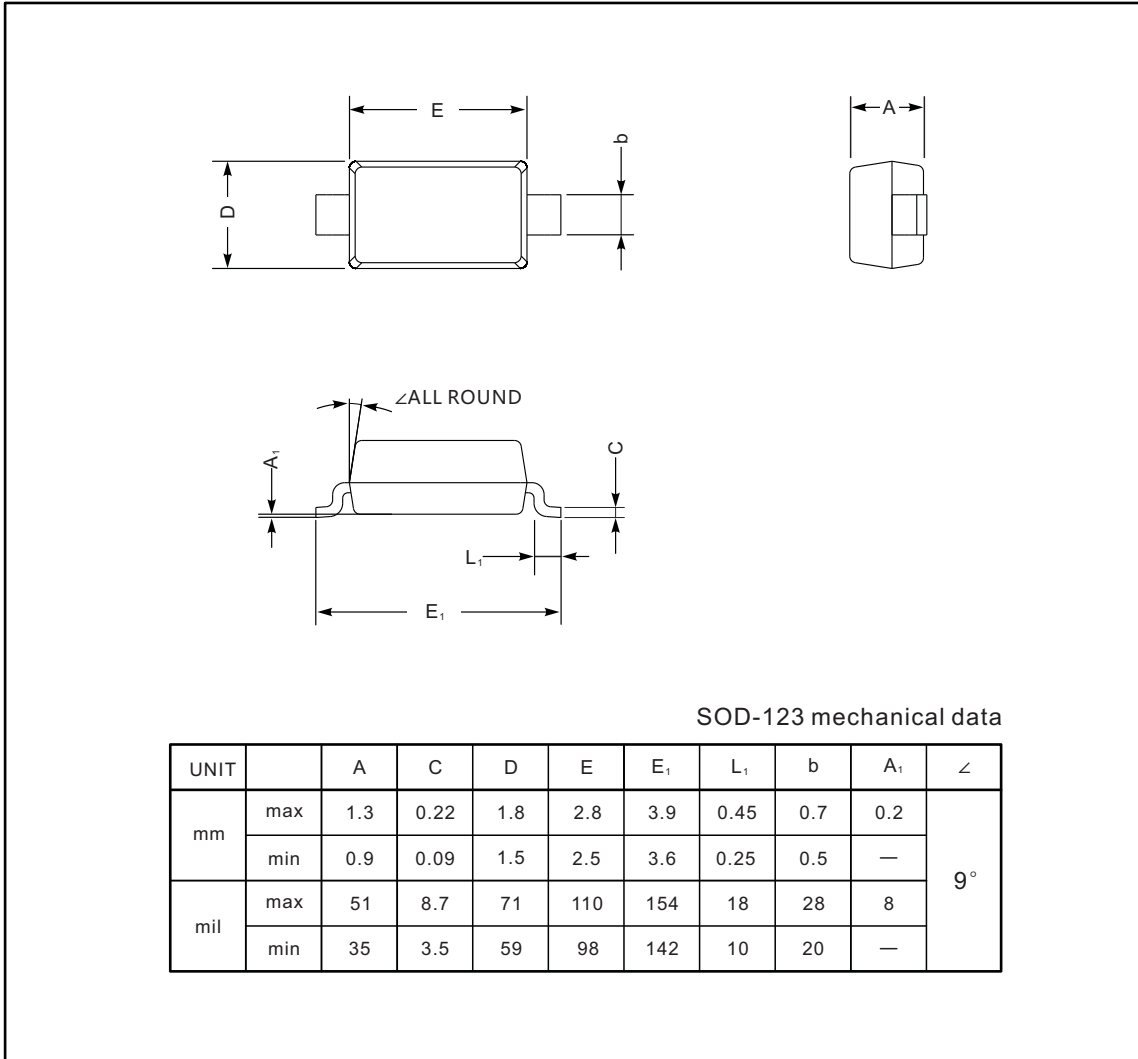
(1) V<sub>ZT</sub> is tested with pulses (20 ms)



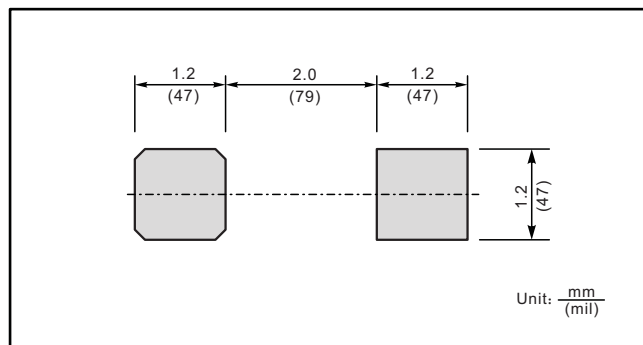
**PACKAGE OUTLINE**

Plastic surface mounted package; 2 leads

SOD-123



**The recommended mounting pad size**



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