



Silicon Planar Zener Diodes

**FEATURES**

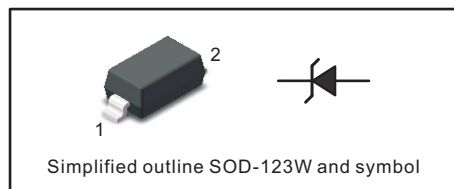
- Total power dissipation: Max. 500mW.
- Wide zener reverse voltage range 2.0V to 75V.
- Small plastic package suitable for surface mounted design.
- Tolerance approximately  $\pm 5\%$

**MECHANICAL DATA**

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

**PINNING**

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

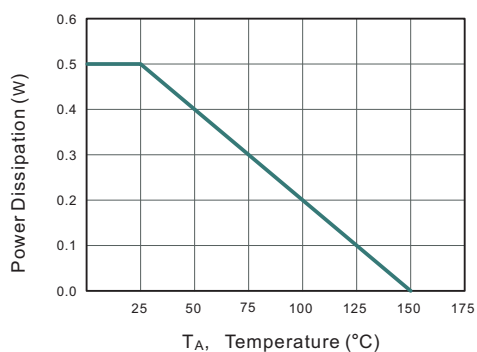


**Absolute Maximum Ratings And Characteristics ( Ta = 25 °C )**

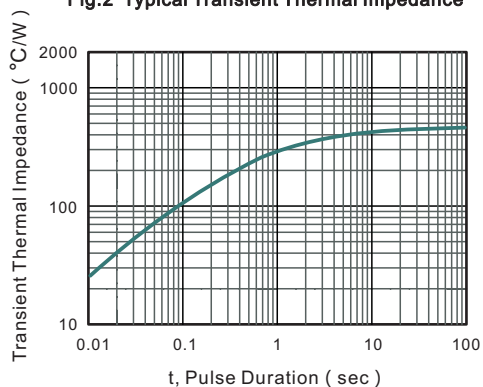
| Parameter   | Symbol          | Value      | Unit                        |
|---|-----------------|------------|-----------------------------|
| Power Dissipation   | $P_{tot}$       | 500        | mW                          |
| Forward Voltage at $I_F = 10 \text{ mA}$                      | $V_F$           | 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" (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 <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 ) |                         |  |                              |                            |
| MM1Z2V0W | 4A      | 1.8                                    | 2.0       | 2.15      | 5                       | 100  | 120                          | 0.5                        |
| MM1Z2V2W | 4B      | 2.08                                   | 2.2       | 2.33      | 5                       | 100  | 120                          | 0.7                        |
| MM1Z2V4W | 4C      | 2.28                                   | 2.4       | 2.56      | 5                       | 100  | 120                          | 1                          |
| MM1Z2V7W | 4D      | 2.5                                    | 2.7       | 2.9       | 5                       | 110  | 120                          | 1                          |
| MM1Z3V0W | 4E      | 2.8                                    | 3.0       | 3.2       | 5                       | 120  | 50                           | 1                          |
| MM1Z3V3W | 4F      | 3.1                                    | 3.3       | 3.5       | 5                       | 130  | 20                           | 1                          |
| MM1Z3V6W | 4H      | 3.4                                    | 3.6       | 3.8       | 5                       | 130  | 10                           | 1                          |
| MM1Z3V9W | 4J      | 3.7                                    | 3.9       | 4.1       | 5                       | 130  | 5                            | 1                          |
| MM1Z4V3W | 4K      | 4                                      | 4.3       | 4.6       | 5                       | 130  | 5                            | 1                          |
| MM1Z4V7W | 4M      | 4.4                                    | 4.7       | 5         | 5                       | 130  | 2                            | 1                          |
| MM1Z5V1W | 4N      | 4.8                                    | 5.1       | 5.4       | 5                       | 130  | 2                            | 1.5                        |
| MM1Z5V6W | 4P      | 5.2                                    | 5.6       | 6         | 5                       | 80   | 1                            | 2.5                        |
| MM1Z6V2W | 4R      | 5.8                                    | 6.2       | 6.6       | 5                       | 50   | 1                            | 3                          |
| MM1Z6V8W | 4X      | 6.4                                    | 6.8       | 7.2       | 5                       | 30   | 0.5                          | 3.5                        |
| MM1Z7V5W | 4Y      | 7                                      | 7.5       | 7.9       | 5                       | 30   | 0.5                          | 4                          |
| MM1Z8V2W | 4Z      | 7.7                                    | 8.2       | 8.7       | 5                       | 30   | 0.5                          | 5                          |
| MM1Z9V1W | 5A      | 8.5                                    | 9.1       | 9.6       | 5                       | 30   | 0.5                          | 6                          |
| MM1Z10W  | 5B      | 9.4                                    | 10        | 10.6      | 5                       | 30   | 0.1                          | 7                          |
| MM1Z11W  | 5C      | 10.4                                   | 11        | 11.6      | 5                       | 30   | 0.1                          | 8                          |
| MM1Z12W  | 5D      | 11.4                                   | 12        | 12.7      | 5                       | 35   | 0.1                          | 9                          |
| MM1Z13W  | 5E      | 12.4                                   | 13        | 14.1      | 5                       | 35   | 0.1                          | 10                         |
| MM1Z15W  | 5F      | 13.8                                   | 15        | 15.6      | 5                       | 40   | 0.1                          | 11                         |
| MM1Z16W  | 5H      | 15.3                                   | 16        | 17.1      | 5                       | 40   | 0.1                          | 12                         |
| MM1Z18W  | 5J      | 16.8                                   | 18        | 19.1      | 5                       | 45   | 0.1                          | 13                         |
| MM1Z20W  | 5K      | 18.8                                   | 20        | 21.2      | 5                       | 50   | 0.1                          | 15                         |
| MM1Z22W  | 5M      | 20.8                                   | 22        | 23.3      | 5                       | 55   | 0.1                          | 17                         |
| MM1Z24W  | 5N      | 22.8                                   | 24        | 25.6      | 5                       | 60   | 0.1                          | 19                         |
| MM1Z27W  | 5P      | 25.1                                   | 27        | 28.9      | 5                       | 70   | 0.1                          | 21                         |
| MM1Z30W  | 5R      | 28                                     | 30        | 32        | 5                       | 80   | 0.1                          | 23                         |
| MM1Z33W  | 5X      | 31                                     | 33        | 35        | 5                       | 80   | 0.1                          | 25                         |
| MM1Z36W  | 5Y      | 34                                     | 36        | 38        | 5                       | 90   | 0.1                          | 27                         |
| MM1Z39W  | 5Z      | 37                                     | 39        | 41        | 2.5                     | 100  | 2                            | 30                         |
| MM1Z43W  | 6A      | 40                                     | 43        | 46        | 2.5                     | 130  | 2                            | 33                         |
| MM1Z47W  | 6B      | 44                                     | 47        | 50        | 2.5                     | 150  | 2                            | 36                         |
| MM1Z51W  | 6C      | 48                                     | 51        | 54        | 2.5                     | 180  | 1                            | 39                         |
| MM1Z56W  | 6D      | 52                                     | 56        | 60        | 2.5                     | 180  | 1                            | 43                         |
| MM1Z62W  | 6E      | 58                                     | 62        | 66        | 2.5                     | 200  | 0.2                          | 47                         |
| MM1Z68W  | 6F      | 64                                     | 68        | 72        | 2.5                     | 250  | 0.2                          | 52                         |
| MM1Z75W  | 6H      | 70                                     | 75        | 79        | 2.5                     | 300  | 0.2                          | 57                         |

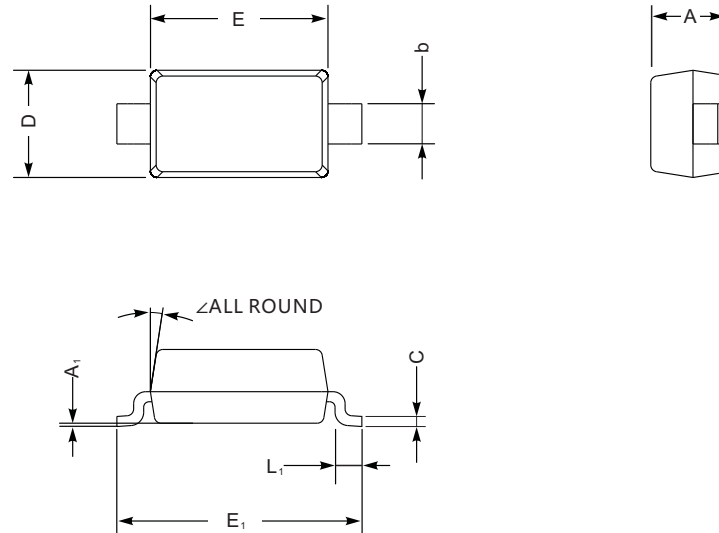
( 1 ) V<sub>ZT</sub> is tested with pulses (20 ms)



**PACKAGE OUTLINE**

Plastic surface mounted package; 2 leads

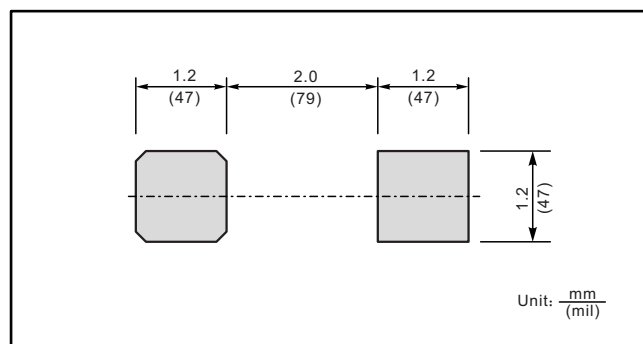
SOD-123W



SOD-123W mechanical data

| UNIT |     | A   | C    | D   | E   | E <sub>1</sub> | L <sub>1</sub> | b   | A <sub>1</sub> | ∠  |
|------|-----|-----|------|-----|-----|----------------|----------------|-----|----------------|----|
| 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**



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