

Silicon Planar Zener Diodes

**FEATURES**

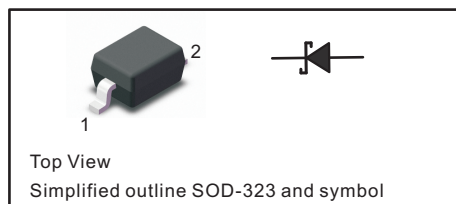
- Total power dissipation: Max. 200mW.
- Wide zener reverse voltage range 2.0V to 75V.
- Small plastic package suitable for surface mounted design.
- Tolerance approximately  $\pm 5\%$

**MECHANICAL DATA**

- Case: SOD-323
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 5.48mg / 0.00019oz

**PINNING**

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

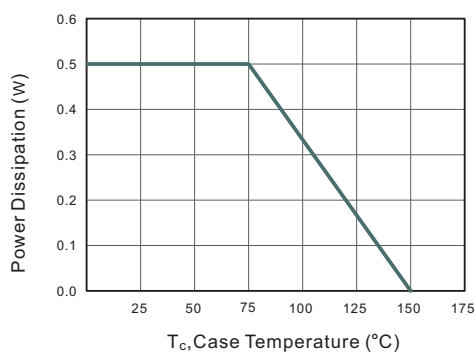


**Absolute Maximum Ratings And Characteristics ( Ta = 25 °C )**

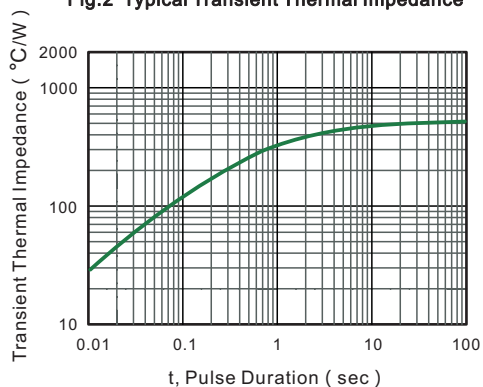
| Parameter   | Symbol          | Value      | Unit                        |
|---|-----------------|------------|-----------------------------|
| Power Dissipation   | $P_{tot}$       | 200        | mW                          |
| Forward Voltage at $I_F = 10\text{ mA}$                       | $V_F$           | 0.9        | V                           |
| Typical thermal resistance junction to ambient <sup>(1)</sup> | $R_{\theta JA}$ | 417        | $^{\circ}\text{C}/\text{W}$ |
| 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<br>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 ) |                         |   |                              |                            |
| MM3Z2V0 | B0      | 1.8                                    | 2.0       | 2.15      | 5                       | 100   | 120                          | 0.5                        |
| MM3Z2V2 | C0      | 2.08                                   | 2.2       | 2.33      | 5                       | 100   | 120                          | 0.7                        |
| MM3Z2V4 | 1C      | 2.28                                   | 2.4       | 2.56      | 5                       | 100   | 120                          | 1                          |
| MM3Z2V7 | 1D      | 2.5                                    | 2.7       | 2.9       | 5                       | 110   | 120                          | 1                          |
| MM3Z3V0 | 1E      | 2.8                                    | 3.0       | 3.2       | 5                       | 120   | 50                           | 1                          |
| MM3Z3V3 | 1F      | 3.1                                    | 3.3       | 3.5       | 5                       | 130   | 20                           | 1                          |
| MM3Z3V6 | 1H      | 3.4                                    | 3.6       | 3.8       | 5                       | 130   | 10                           | 1                          |
| MM3Z3V9 | 1J      | 3.7                                    | 3.9       | 4.1       | 5                       | 130   | 5                            | 1                          |
| MM3Z4V3 | 1K      | 4                                      | 4.3       | 4.6       | 5                       | 130   | 5                            | 1                          |
| MM3Z4V7 | 1M      | 4.4                                    | 4.7       | 5         | 5                       | 130   | 2                            | 1                          |
| MM3Z5V1 | 1N      | 4.8                                    | 5.1       | 5.4       | 5                       | 130   | 2                            | 1.5                        |
| MM3Z5V6 | 1P      | 5.2                                    | 5.6       | 6         | 5                       | 80  | 1                            | 2.5                        |
| MM3Z6V2 | 1R      | 5.8                                    | 6.2       | 6.6       | 5                       | 50  | 1                            | 3                          |
| MM3Z6V8 | 1X      | 6.4                                    | 6.8       | 7.2       | 5                       | 30  | 0.5                          | 3.5                        |
| MM3Z7V5 | 1Y      | 7                                      | 7.5       | 7.9       | 5                       | 30  | 0.5                          | 4                          |
| MM3Z8V2 | 1Z      | 7.7                                    | 8.2       | 8.7       | 5                       | 30  | 0.5                          | 5                          |
| MM3Z9V1 | 2A      | 8.5                                    | 9.1       | 9.6       | 5                       | 30  | 0.5                          | 6                          |
| MM3Z10  | 2B      | 9.4                                    | 10        | 10.6      | 5                       | 30  | 0.1                          | 7                          |
| MM3Z11  | 2C      | 10.4                                   | 11        | 11.6      | 5                       | 30  | 0.1                          | 8                          |
| MM3Z12  | 2D      | 11.4                                   | 12        | 12.7      | 5                       | 35  | 0.1                          | 9                          |
| MM3Z13  | 2E      | 12.4                                   | 13        | 14.1      | 5                       | 35  | 0.1                          | 10                         |
| MM3Z15  | 2F      | 13.8                                   | 15        | 15.6      | 5                       | 40  | 0.1                          | 11                         |
| MM3Z16  | 2H      | 15.3                                   | 16        | 17.1      | 5                       | 40  | 0.1                          | 12                         |
| MM3Z18  | 2J      | 16.8                                   | 18        | 19.1      | 5                       | 45  | 0.1                          | 13                         |
| MM3Z20  | 2K      | 18.8                                   | 20        | 21.2      | 5                       | 50  | 0.1                          | 15                         |
| MM3Z22  | 2M      | 20.8                                   | 22        | 23.3      | 5                       | 55  | 0.1                          | 17                         |
| MM3Z24  | 2N      | 22.8                                   | 24        | 25.6      | 5                       | 60  | 0.1                          | 19                         |
| MM3Z27  | 2P      | 25.1                                   | 27        | 28.9      | 2                       | 70  | 0.1                          | 21                         |
| MM3Z30  | 2R      | 28                                     | 30        | 32        | 2                       | 80  | 0.1                          | 23                         |
| MM3Z33  | 2X      | 31                                     | 33        | 35        | 2                       | 80  | 0.1                          | 25                         |
| MM3Z36  | 2Y      | 34                                     | 36        | 38        | 2                       | 90  | 0.1                          | 27                         |
| MM3Z39  | 2Z      | 37                                     | 39        | 41        | 2                       | 100   | 0.1                          | 30                         |
| MM3Z43  | 3A      | 40                                     | 43        | 46        | 2                       | 130   | 0.1                          | 33                         |
| MM3Z47  | 3B      | 44                                     | 47        | 50        | 2                       | 150   | 0.1                          | 36                         |
| MM3Z51  | 3C      | 48                                     | 51        | 54        | 2                       | 180   | 0.1                          | 39                         |
| MM3Z56  | 3D      | 52                                     | 56        | 60        | 2                       | 200   | 0.1                          | 43                         |
| MM3Z62  | 3E      | 58                                     | 62        | 66        | 2                       | 215   | 0.1                          | 47                         |
| MM3Z68  | 3F      | 64                                     | 68        | 72        | 2                       | 240   | 0.1                          | 52                         |
| MM3Z75  | 3H      | 70                                     | 75        | 79        | 2                       | 265   | 0.1                          | 56                         |

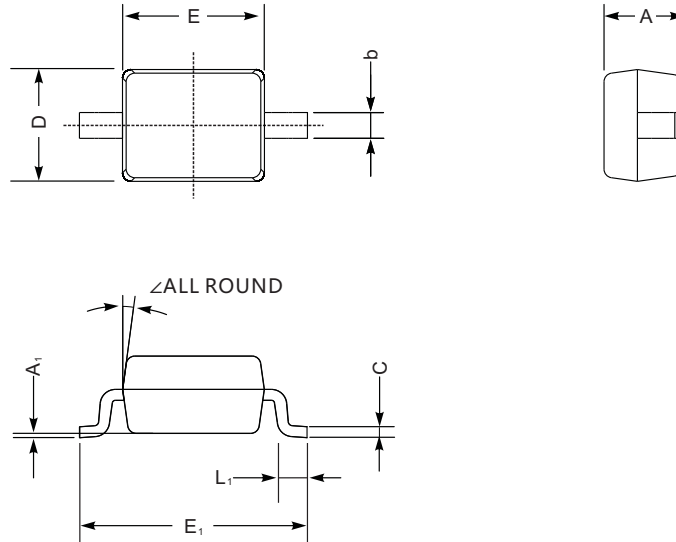
( 1 ) V<sub>ZT</sub> is tested with pulses (20 ms)



PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

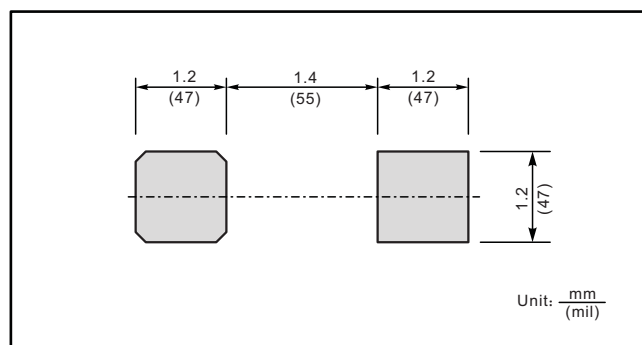
SOD-323



SOD-323 mechanical data

| UNIT |     | A   | C    | D   | E   | E <sub>1</sub> | b    | L <sub>1</sub> | A <sub>1</sub> | ∠  |
|------|-----|-----|------|-----|-----|----------------|------|----------------|----------------|----|
| mm   | max | 1.1 | 0.15 | 1.4 | 1.8 | 2.75           | 0.4  | 0.45           | 0.2            | 9° |
|      | min | 0.8 | 0.08 | 1.2 | 1.4 | 2.55           | 0.25 | 0.2            | —              |    |
| mil  | max | 43  | 5.9  | 55  | 70  | 108            | 16   | 16             | 8              |    |
|      | min | 32  | 3.1  | 47  | 63  | 100            | 9.8  | 7.9            | —              |    |

The recommended mounting pad size



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