# MM1Z2V0~MM1Z75

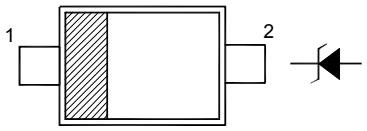
## Silicon Planar Zener Diodes

**Features**

- Total power dissipation: max. 500 mW
- Small plastic package suitable for surface mounted design
- Tolerance approximately ± 5%

PINNING

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




Top View
Simplified outline SOD-123 and symbol

**Absolute Maximum Ratings ($T_a$ = 25 °C)**

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Power Dissipation | $P_{tot}$ | 500 | mW |
| Junction Temperature | $T_j$ | 150 | °C |
| Storage Temperature Range | $T_{stg}$ | - 55 to + 150 | °C |

**Characteristics at $T_a$ = 25 °C**

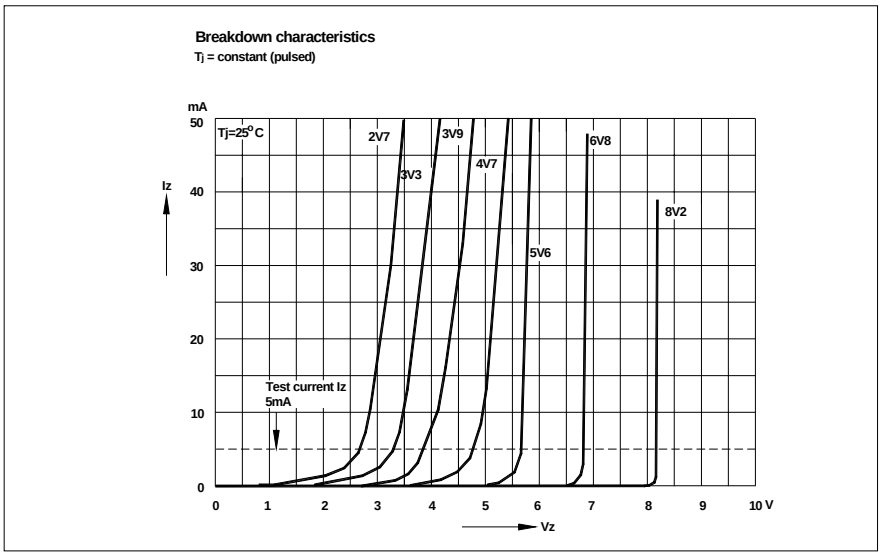
| Parameter | Symbol | Max. | Unit |
|---|---|---|---|
| Thermal Resistance Junction to Ambient Air | $R_{thA}$ | 340 | °C/W |
| Forward Voltage at $I_F$ = 10 mA | $V_F$ | 0.9 | V |

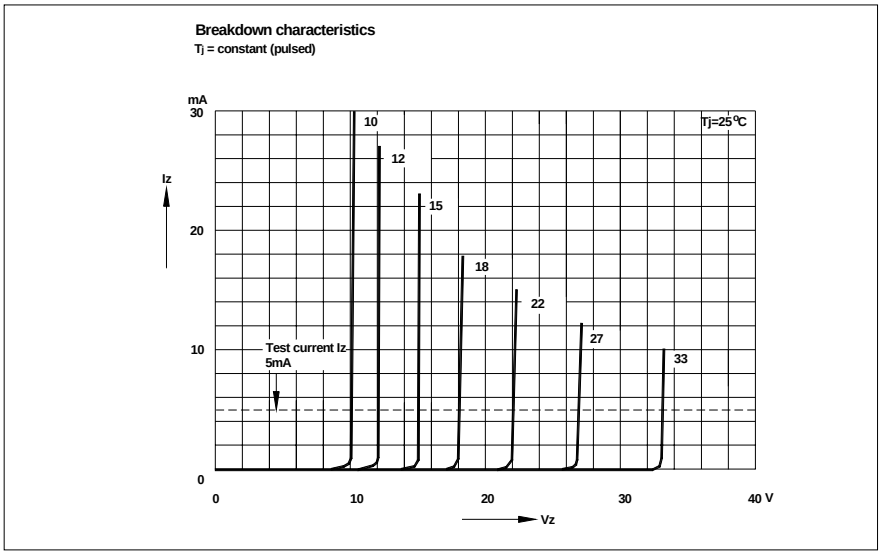
**Characteristics at $T_a$ = 25 °C**

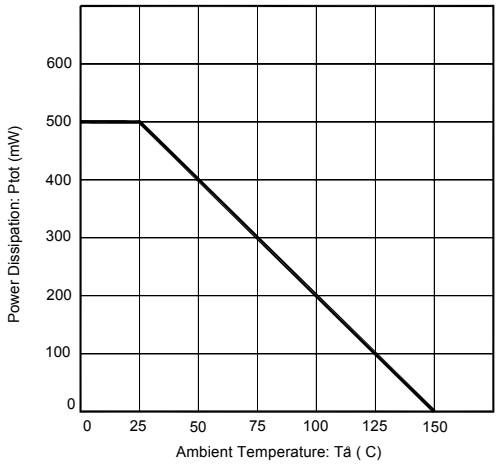
| Type | Marking Code | Zener Voltage Range [1] | | | Dynamic Impedance [2] | | Reverse Leakage Current | |
|---|---|---|---|---|---|---|---|---|
| | | $V_{znom}$ | $V_{ZT}$ | at $I_{ZT}$ | $Z_{ZT}$ | at $I_{ZT}$ | $I_R$ | at $V_R$ |
| | | V | V | mA | Max. (Ω) | mA | Max. (μA) | V |
| MM1Z2V0 | 4A | 2 | 1.8...2.15 | 5 | 100 | 5 | 120 | 0.5 |
| MM1Z2V2 | 4B | 2.2 | 2.08...2.33 | 5 | 100 | 5 | 120 | 0.7 |
| MM1Z2V4 | 4C | 2.4 | 2.28...2.56 | 5 | 100 | 5 | 120 | 1 |
| MM1Z2V7 | 4D | 2.7 | 2.5...2.9 | 5 | 110 | 5 | 120 | 1 |
| MM1Z3V0 | 4E | 3 | 2.8...3.2 | 5 | 120 | 5 | 50 | 1 |
| MM1Z3V3 | 4F | 3.3 | 3.1...3.5 | 5 | 130 | 5 | 20 | 1 |
| MM1Z3V6 | 4H | 3.6 | 3.4...3.8 | 5 | 130 | 5 | 10 | 1 |
| MM1Z3V9 | 4J | 3.9 | 3.7...4.1 | 5 | 130 | 5 | 5 | 1 |
| MM1Z4V3 | 4K | 4.3 | 4...4.6 | 5 | 130 | 5 | 5 | 1 |
| MM1Z4V7 | 4M | 4.7 | 4.4...5 | 5 | 130 | 5 | 2 | 1 |
| MM1Z5V1 | 4N | 5.1 | 4.8...5.4 | 5 | 130 | 5 | 2 | 1.5 |
| MM1Z5V6 | 4P | 5.6 | 5.2...6 | 5 | 80 | 5 | 1 | 2.5 |
| MM1Z6V2 | 4R | 6.2 | 5.8...6.6 | 5 | 50 | 5 | 1 | 3 |
| MM1Z6V8 | 4X | 6.8 | 6.4...7.2 | 5 | 30 | 5 | 0.5 | 3.5 |
| MM1Z7V5 | 4Y | 7.5 | 7...7.9 | 5 | 30 | 5 | 0.5 | 4 |
| MM1Z8V2 | 4Z | 8.2 | 7.7...8.7 | 5 | 30 | 5 | 0.5 | 5 |
| MM1Z9V1 | 5A | 9.1 | 8.5...9.6 | 5 | 30 | 5 | 0.5 | 6 |
| MM1Z10 | 5B | 10 | 9.4...10.6 | 5 | 30 | 5 | 0.1 | 7 |
| MM1Z11 | 5C | 11 | 10.4...11.6 | 5 | 30 | 5 | 0.1 | 8 |
| MM1Z12 | 5D | 12 | 11.4...12.7 | 5 | 35 | 5 | 0.1 | 9 |
| MM1Z13 | 5E | 13 | 12.4...14.1 | 5 | 35 | 5 | 0.1 | 10 |
| MM1Z15 | 5F | 15 | 13.8...15.6 | 5 | 40 | 5 | 0.1 | 11 |
| MM1Z16 | 5H | 16 | 15.3...17.1 | 5 | 40 | 5 | 0.1 | 12 |
| MM1Z18 | 5J | 18 | 16.8...19.1 | 5 | 45 | 5 | 0.1 | 13 |
| MM1Z20 | 5K | 20 | 18.8...21.2 | 5 | 50 | 5 | 0.1 | 15 |
| MM1Z22 | 5M | 22 | 20.8...23.3 | 5 | 55 | 5 | 0.1 | 17 |
| MM1Z24 | 5N | 24 | 22.8...25.6 | 5 | 60 | 5 | 0.1 | 19 |
| MM1Z27 | 5P | 27 | 25.1...28.9 | 5 | 70 | 2 | 0.1 | 21 |
| MM1Z30 | 5R | 30 | 28...32 | 5 | 80 | 2 | 0.1 | 23 |
| MM1Z33 | 5X | 33 | 31...35 | 5 | 80 | 2 | 0.1 | 25 |
| MM1Z36 | 5Y | 36 | 34...38 | 5 | 90 | 2 | 0.1 | 27 |
| MM1Z39 | 5Z | 39 | 37...41 | 2.5 | 100 | 2 | 2 | 30 |
| MM1Z43 | 6A | 43 | 40...46 | 2.5 | 130 | 2 | 2 | 33 |
| MM1Z47 | 6B | 47 | 44...50 | 2.5 | 150 | 2 | 2 | 36 |
| MM1Z51 | 6C | 51 | 48...54 | 2.5 | 180 | 2 | 1 | 39 |
| MM1Z56 | 6D | 56 | 52...60 | 2.5 | 180 | 2 | 1 | 43 |
| MM1Z62 | 6E | 62 | 58...66 | 2.5 | 200 | 2 | 0.2 | 47 |
| MM1Z68 | 6F | 68 | 64...72 | 2.5 | 250 | 2 | 0.2 | 52 |
| MM1Z75 | 6H | 75 | 70...79 | 2.5 | 300 | 2 | 0.2 | 57 |

[1] $V_Z$ is tested with pulses (20 ms).

[2] $Z_{ZT}$ is measured at $I_Z$ by given a very small A.C. current signal.



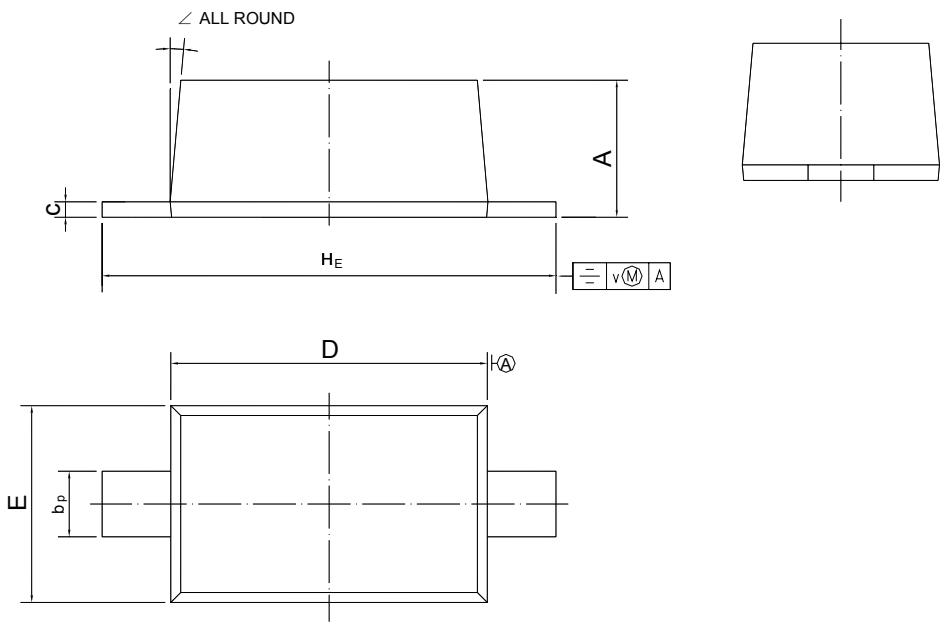




Power Dissipation vs Ambient Temperature

## PACKAGE OUTLINE

**Plastic surface mounted package; 2 leads** **SOD-123**




| UNIT | A | $b_p$ | c | D | E | $H_E$ | v | ∠ |
|---|---|---|---|---|---|---|---|---|
| mm | 1.15<br>1.05 | 0.6<br>0.5 | 0.135<br>0.100 | 2.7<br>2.6 | 1.65<br>1.55 | 3.85<br>3.55 | 0.2 | 5° |