

MM5Z2V0~MM5Z75

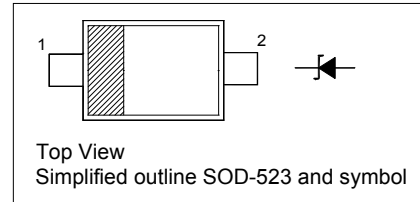
SILICON PLANAR ZENER DIODES

Features

- Standard Zener Breakdown Voltage Range
2.0 V to 75 V
- Steady State Power Rating of 200 mW

PINNING

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



Absolute Maximum Ratings ($T_a = 25\text{ }^\circ\text{C}$)

| Parameter | Symbol | Value | Unit |
|--|----------------|---------------|------------------|
| Total Device Dissipation | P_{tot} | 200 | mW |
| Junction and Storage Temperature Range | T_j, T_{stg} | - 65 to + 150 | $^\circ\text{C}$ |

Characteristics at $T_a = 25\text{ }^\circ\text{C}$

| Parameter | Symbol | Max. | Unit |
|--|--------|------|------|
| Forward Voltage at $I_F = 10\text{ mA}$ | V_F | 0.9 | V |

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| Type | Marking Code | Zener Voltage ¹⁾ | | | | Zener Impedance | | | Leakage Current | |
|---------|--------------|-----------------------------|------|------|--------------------|-----------------|-----------------|--------------------|-----------------|-------------------|
| | | V _{ZT} (V) | | | at I _{ZT} | Z _{ZT} | Z _{ZK} | at I _{ZK} | I _R | at V _R |
| | | Min. | Nom. | Max. | mA | Ω | Ω | mA | μA | V |
| MM5Z2V0 | RD | 1.8 | 2.0 | 2.15 | 5 | 100 | - | - | 120 | 0.5 |
| MM5Z2V2 | RE | 2.08 | 2.2 | 2.33 | 5 | 100 | - | - | 120 | 0.7 |
| MM5Z2V4 | Z7 | 2.2 | 2.4 | 2.6 | 5 | 100 | 1000 | 1 | 120 | 1 |
| MM5Z2V7 | A8 | 2.5 | 2.7 | 2.9 | 5 | 100 | 1000 | 1 | 120 | 1 |
| MM5Z3V0 | B8 | 2.8 | 3.0 | 3.2 | 5 | 100 | 1000 | 1 | 50 | 1 |
| MM5Z3V3 | C8 | 3.1 | 3.3 | 3.5 | 5 | 95 | 1000 | 1 | 20 | 1 |
| MM5Z3V6 | D8 | 3.4 | 3.6 | 3.8 | 5 | 90 | 1000 | 1 | 10 | 1 |
| MM5Z3V9 | E8 | 3.7 | 3.9 | 4.1 | 5 | 90 | 1000 | 1 | 5 | 1 |
| MM5Z4V3 | F8 | 4 | 4.3 | 4.6 | 5 | 90 | 1000 | 1 | 5 | 1 |
| MM5Z4V7 | G8 | 4.4 | 4.7 | 5 | 5 | 80 | 800 | 1 | 2 | 1 |
| MM5Z5V1 | H8 | 4.8 | 5.1 | 5.4 | 5 | 60 | 500 | 1 | 2 | 1.5 |
| MM5Z5V6 | I8 | 5.2 | 5.6 | 6 | 5 | 40 | 200 | 1 | 1 | 2.5 |
| MM5Z6V2 | J8 | 5.8 | 6.2 | 6.6 | 5 | 10 | 100 | 1 | 1 | 3 |
| MM5Z6V8 | K8 | 6.4 | 6.8 | 7.2 | 5 | 15 | 160 | 1 | 0.5 | 3.5 |
| MM5Z7V5 | L8 | 7 | 7.5 | 7.9 | 5 | 15 | 160 | 1 | 0.5 | 4 |
| MM5Z8V2 | M8 | 7.7 | 8.2 | 8.7 | 5 | 15 | 160 | 1 | 0.5 | 5 |
| MM5Z9V1 | N8 | 8.5 | 9.1 | 9.6 | 5 | 15 | 160 | 1 | 0.5 | 6 |
| MM5Z10 | O8 | 9.4 | 10 | 10.6 | 5 | 20 | 160 | 1 | 0.1 | 7 |
| MM5Z11 | P8 | 10.4 | 11 | 11.6 | 5 | 20 | 160 | 1 | 0.1 | 8 |
| MM5Z12 | Q8 | 11.4 | 12 | 12.7 | 5 | 25 | 80 | 1 | 0.1 | 9 |
| MM5Z13 | R8 | 12.4 | 13 | 14.1 | 5 | 30 | 80 | 1 | 0.1 | 10 |
| MM5Z15 | S8 | 14.3 | 15 | 15.8 | 5 | 30 | 80 | 1 | 0.1 | 11 |
| MM5Z16 | T8 | 15.3 | 16 | 17.1 | 2 | 40 | 80 | 1 | 0.1 | 12 |
| MM5Z18 | U8 | 16.8 | 18 | 19.1 | 2 | 45 | 80 | 1 | 0.1 | 13 |
| MM5Z20 | V8 | 18.8 | 20 | 21.2 | 2 | 55 | 100 | 1 | 0.1 | 15 |
| MM5Z22 | W8 | 20.8 | 22 | 23.3 | 2 | 55 | 100 | 1 | 0.1 | 17 |
| MM5Z24 | X8 | 22.8 | 24 | 25.6 | 2 | 70 | 120 | 1 | 0.1 | 19 |
| MM5Z27 | Y8 | 25.1 | 27 | 28.9 | 2 | 80 | 300 | 1 | 0.1 | 21 |
| MM5Z30 | Z8 | 28 | 30 | 32 | 2 | 80 | 300 | 1 | 0.1 | 23 |
| MM5Z33 | A9 | 31 | 33 | 35 | 2 | 80 | 300 | 1 | 0.1 | 25 |
| MM5Z36 | B9 | 34 | 36 | 38 | 2 | 90 | 500 | 1 | 0.1 | 27 |
| MM5Z39 | C9 | 37 | 39 | 41 | 2 | 130 | 500 | 1 | 2 | 30 |
| MM5Z43 | D9 | 40 | 43 | 46 | 1 | 150 | 500 | 1 | 2 | 33 |
| MM5Z47 | E9 | 44 | 47 | 50 | 1 | 170 | 500 | 1 | 2 | 36 |
| MM5Z51 | F9 | 48 | 51 | 54 | 1 | 180 | 500 | 1 | 1 | 39 |
| MM5Z56 | G9 | 52 | 56 | 60 | 1 | 200 | 500 | 1 | 1 | 43 |
| MM5Z62 | H9 | 58 | 62 | 66 | 1 | 215 | 500 | 1 | 0.2 | 47 |
| MM5Z68 | I9 | 64 | 68 | 72 | 1 | 240 | 500 | 1 | 0.2 | 52 |
| MM5Z75 | J9 | 70 | 75 | 79 | 1 | 255 | 500 | 1 | 0.2 | 57 |

¹⁾ Tested with pulses $t_p = 20$ ms.

Typical Characteristics

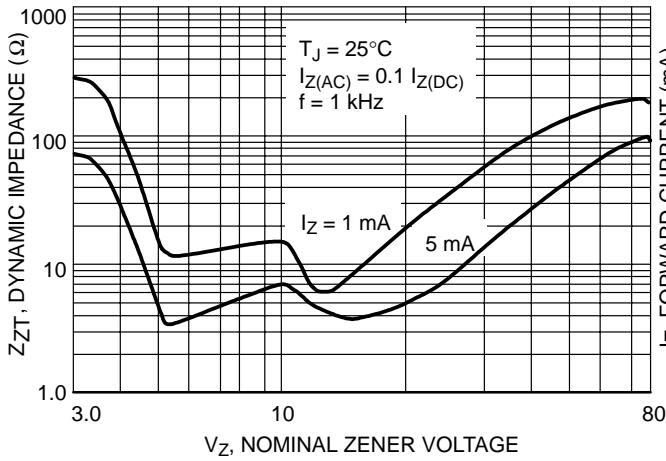


Figure 1. Effect of Zener Voltage on Zener Impedance

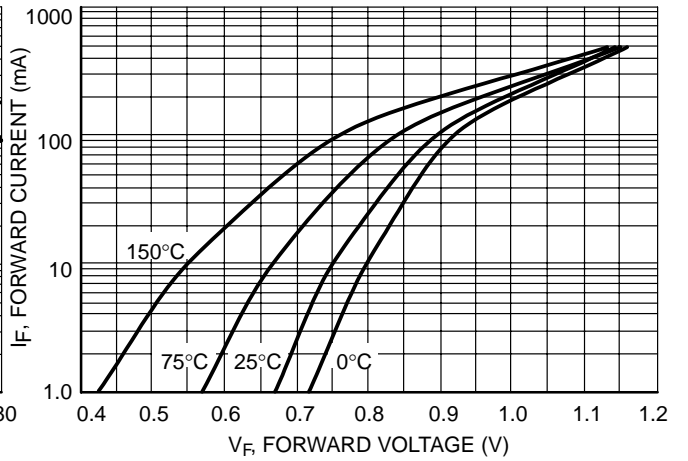


Figure 2. Typical Forward Voltage

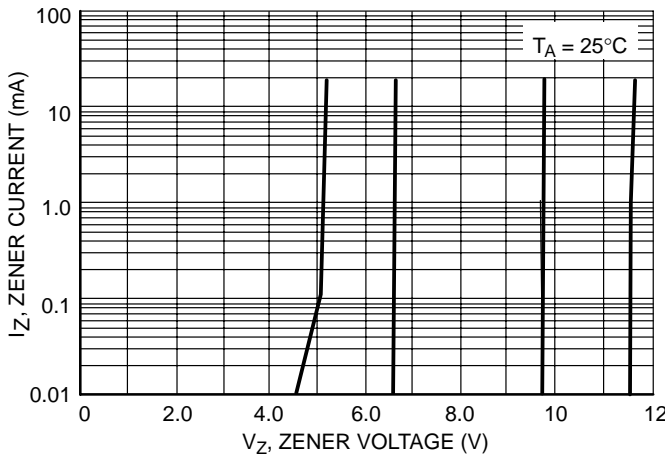


Figure 3. Zener Voltage versus Zener Current (V_Z Up to 12 V)

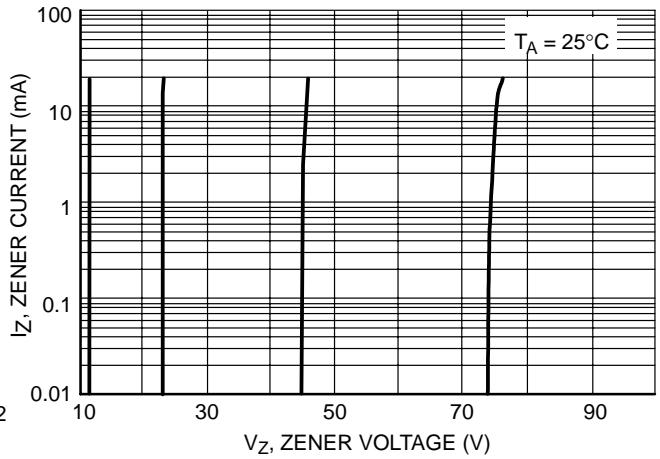


Figure 4. Zener Voltage versus Zener Current (12 V to 75 V)

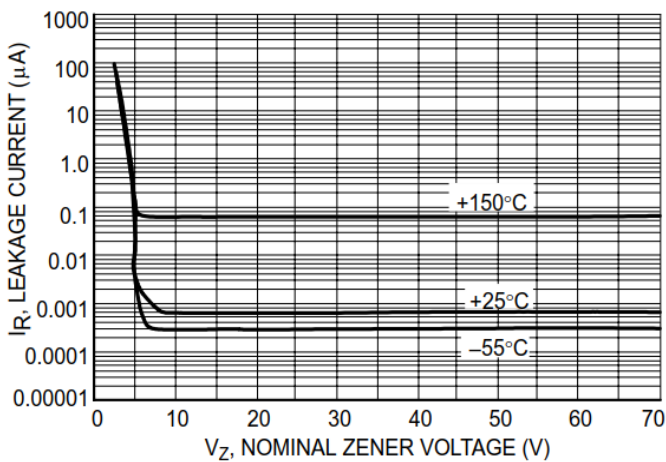


Figure 5. Typical Leakage Current

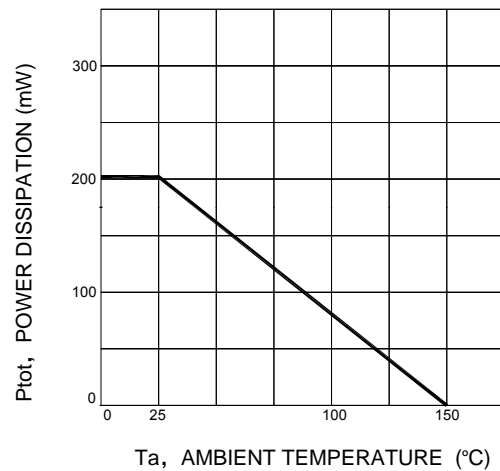


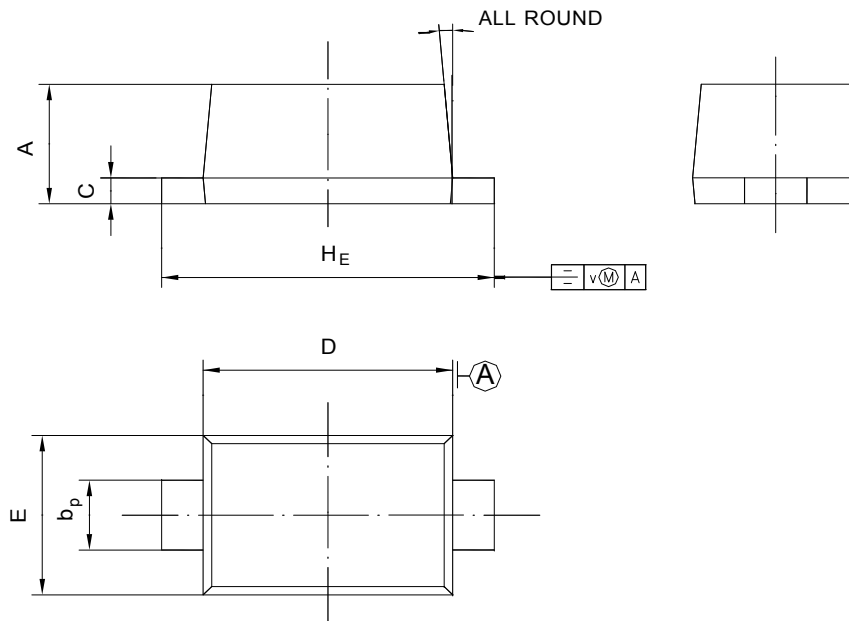
Figure 6. Power Derating Curve

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PACKAGE OUTLINE

SOD-523

Plastic surface mounted package; 2 leads



| UNIT | A | bp | C | D | E | HE | V | ∠ |
|------|--------------|--------------|--------------|--------------|--------------|------------|-----|----|
| mm | 0.77 0.51 | 0.40 0.25 | 0.15 0.08 | 1.30 1.10 | 0.85 0.75 | 1.7 1.5 | 0.1 | 5° |