

MM1Z5231C~MM1Z5262C

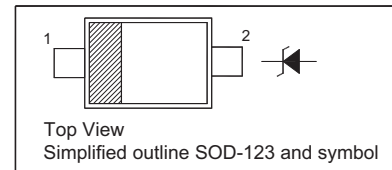
SILICON PLANAR ZENER DIODES

Features

- Total power dissipation: Max. 500 mW
- Small plastic package suitable for surface mounted design
- Zener Voltage Tolerance: $\pm 2\%$

PINNING

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



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

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

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

| Parameter | Symbol | Max. | Unit |
|---|-----------------------|------|---------------------------|
| Thermal Resistance Junction to Ambient Air | $R_{\theta\text{JA}}$ | 350 | $^\circ\text{C}/\text{W}$ |
| Forward Voltage at $I_F = 10 \text{ mA}$ | V_F | 0.9 | V |

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

| Type | Marking Code | Zener Voltage Range ¹⁾ | | | | Dynamic Impedance | | | | Reverse Current | |
|-----------|--------------|-----------------------------------|----------|----------|-------------|-------------------|-------------|-------------------|-------------|------------------------|----------|
| | | V_{znom} | V_{ZT} | | at I_{ZT} | Z_{ZT} | at I_{ZT} | Z_{ZK} | at I_{ZK} | I_R | at V_R |
| | | V | Min. (V) | Max. (V) | mA | Max. (Ω) | mA | Max. (Ω) | mA | Max. (μA) | V |
| MM1Z5231C | YN | 5.1 | 4.998 | 5.202 | 20 | 17 | 20 | 1600 | 0.25 | 5 | 2 |
| MM1Z5232C | YO | 5.6 | 5.488 | 5.712 | 20 | 11 | 20 | 1600 | 0.25 | 5 | 3 |
| MM1Z5234C | YP | 6.2 | 6.076 | 6.324 | 20 | 7 | 20 | 1000 | 0.25 | 5 | 4 |
| MM1Z5235C | YQ | 6.8 | 6.664 | 6.936 | 20 | 5 | 20 | 750 | 0.25 | 3 | 5 |
| MM1Z5236C | YR | 7.5 | 7.35 | 7.65 | 20 | 6 | 20 | 500 | 0.25 | 3 | 6 |
| MM1Z5237C | YS | 8.2 | 8.036 | 8.364 | 20 | 8 | 20 | 500 | 0.25 | 3 | 6.5 |
| MM1Z5239C | YT | 9.1 | 8.918 | 9.282 | 20 | 10 | 20 | 600 | 0.25 | 3 | 7 |
| MM1Z5240C | YU | 10 | 9.8 | 10.2 | 20 | 17 | 20 | 600 | 0.25 | 3 | 8 |
| MM1Z5241C | YV | 11 | 10.78 | 11.22 | 20 | 22 | 20 | 600 | 0.25 | 2 | 8.4 |
| MM1Z5242C | YW | 12 | 11.76 | 12.24 | 20 | 30 | 20 | 600 | 0.25 | 1 | 9.1 |
| MM1Z5243C | YX | 13 | 12.74 | 13.26 | 9.5 | 13 | 9.5 | 600 | 0.25 | 0.5 | 9.9 |
| MM1Z5245C | YY | 15 | 14.7 | 15.3 | 8.5 | 16 | 8.5 | 600 | 0.25 | 0.1 | 11 |
| MM1Z5246C | YZ | 16 | 15.68 | 16.32 | 7.8 | 17 | 7.8 | 600 | 0.25 | 0.1 | 12 |
| MM1Z5247C | G5 | 17 | 16.66 | 17.34 | 7.5 | 19 | 7.5 | 600 | 0.25 | 0.1 | 13 |
| MM1Z5248C | ZA | 18 | 17.64 | 18.36 | 7 | 21 | 7 | 600 | 0.25 | 0.1 | 14 |
| MM1Z5250C | ZB | 20 | 19.6 | 20.4 | 6.2 | 25 | 6.2 | 600 | 0.25 | 0.1 | 15 |
| MM1Z5251C | ZC | 22 | 21.56 | 22.44 | 5.6 | 29 | 5.6 | 600 | 0.25 | 0.1 | 17 |
| MM1Z5252C | ZD | 24 | 23.52 | 24.48 | 5.2 | 33 | 5.2 | 600 | 0.25 | 0.1 | 18 |
| MM1Z5254C | ZE | 27 | 26.46 | 27.54 | 4.6 | 41 | 4.6 | 600 | 0.25 | 0.1 | 21 |
| MM1Z5256C | ZF | 30 | 29.4 | 30.6 | 4.2 | 49 | 4.2 | 600 | 0.25 | 0.1 | 23 |
| MM1Z5257C | ZG | 33 | 32.34 | 33.66 | 3.8 | 58 | 3.8 | 700 | 0.25 | 0.1 | 25 |
| MM1Z5258C | ZH | 36 | 35.28 | 36.72 | 3.4 | 70 | 3.4 | 700 | 0.25 | 0.1 | 27 |
| MM1Z5259C | ZI | 39 | 38.22 | 39.78 | 3.2 | 80 | 3.2 | 800 | 0.25 | 0.1 | 30 |
| MM1Z5260C | ZJ | 43 | 42.14 | 43.86 | 3 | 93 | 3 | 900 | 0.25 | 0.1 | 33 |
| MM1Z5261C | ZK | 47 | 46.06 | 47.94 | 2.7 | 105 | 2.7 | 1000 | 0.25 | 0.1 | 36 |
| MM1Z5262C | A6 | 51 | 49.98 | 52.02 | 2.5 | 125 | 2.5 | 1100 | 0.25 | 0.1 | 39 |

¹⁾ V_Z is tested with pulses (20 ms)

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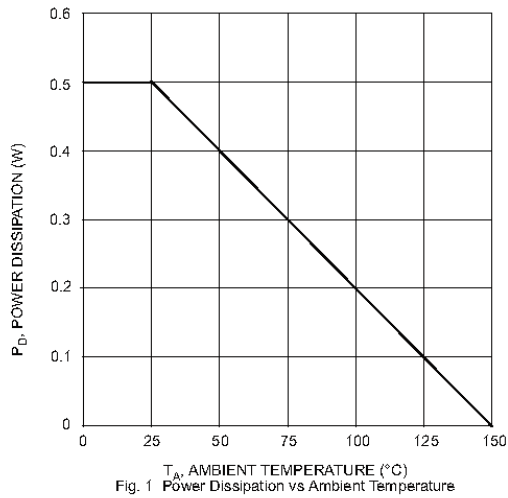


Fig. 1 Power Dissipation vs Ambient Temperature

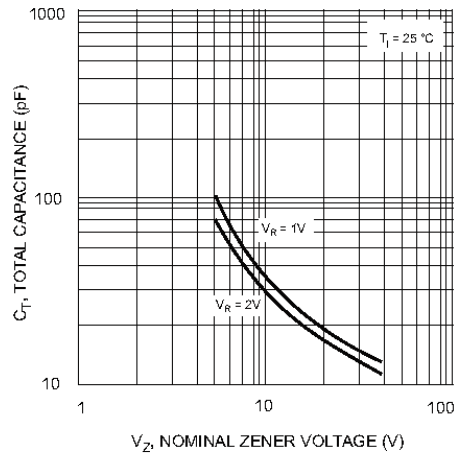


Fig. 2 Total Capacitance vs Nominal Zener Voltage

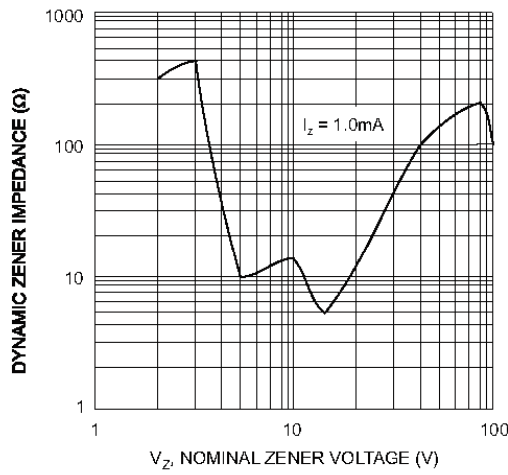


Fig. 3 Zener Voltage vs. Zener Impedance

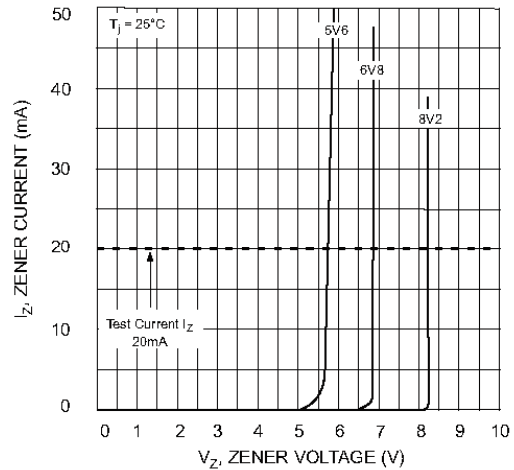


Fig. 4 Zener Breakdown Characteristics

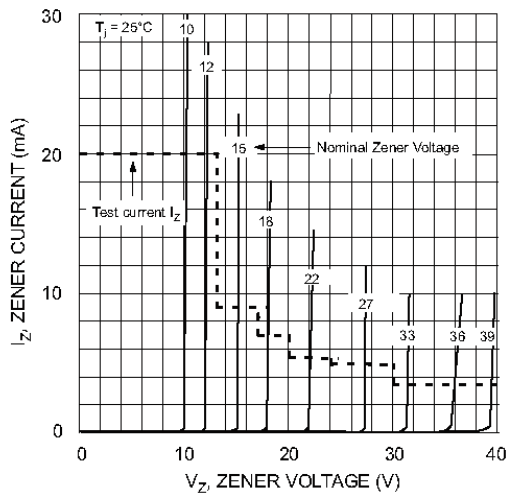


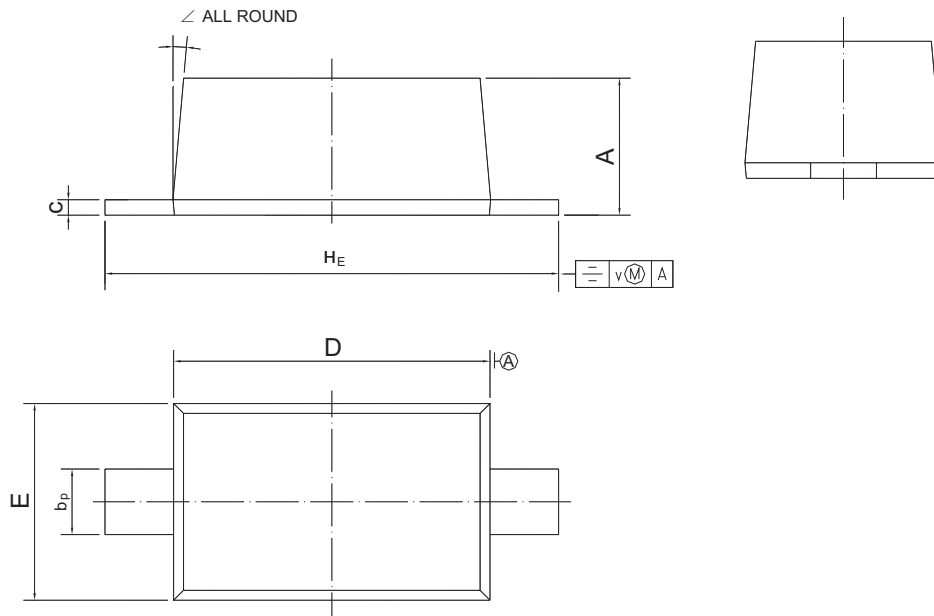
Fig. 5 Zener Breakdown Characteristics

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PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD-123



| UNIT | A | b _p | c | D | E | H _E | v | ∠ |
|------|--------------|----------------|----------------|------------|--------------|----------------|-----|----|
| mm | 1.15 1.05 | 0.6 0.5 | 0.135 0.100 | 2.7 2.6 | 1.65 1.55 | 3.85 3.55 | 0.2 | 5° |