

FEATURES

- Total power dissipation: max. 500 mW
- Small plastic package suitable for surface mounted design
- Wide variety of voltage ranges:
nom. 2.0 to 120V (E24 range)
- Tolerance approximately $\pm 5\%$
- High temperature soldering guaranteed: 260°C/10 seconds at terminals
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

SOD-123FL



SOD-123



MECHANICAL DATA

- Case: SOD-123 plastic case
- Weight: Approx. 0.01 gram

ABSOLUTE MAXIMUM RATINGS (LIMITING VALUES) (TA=25°C)

| | Symbols | Value | Units |
|---|------------------|-------------|-------|
| Zener current see table "Characteristics" | | | |
| Power dissipation | P _{tot} | 500 | mW |
| Junction temperature | T _J | 150 | °C |
| Storage temperature range | T _{STG} | -55 to +150 | °C |

ELECTRICAL CHARACTERISTICS (TA=25°C)

| | Symbols | Min | Typ | Max | Units |
|---|------------------|-----|-----|-----|-------|
| Thermal resistance junction to ambient | R _{θJA} | | | 340 | K/W |
| Forward voltage at I _F =10mA | V _F | | | 0.9 | V |

1) Valid provided that a distance of 8mm from case is kept at ambient temperature

MM1Z... SILICON PLANAR ZENER DIODES

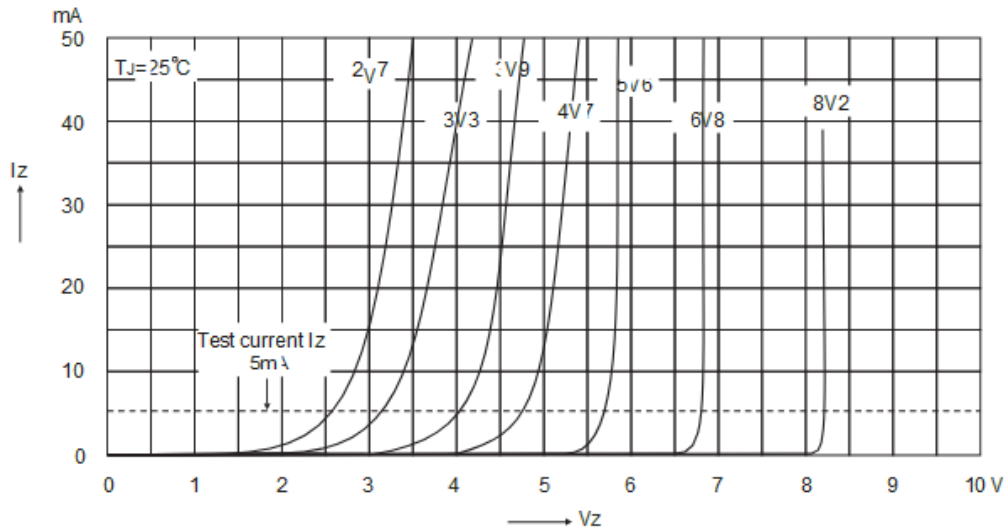
| Type | Zener Voltage range ¹⁾ | | | Dynamic resistance ²⁾ | | Reverse leakage current | | | Temp Coefficient of zener voltage |
|----------|-----------------------------------|-------------------------------------|-------------|---|----|----------------------------------|-----|---|-----------------------------------|
| | V _{Z0} | I _{ZT} for V _{ZT} | | r _Z and r _{ZK} at I _{ZK} | | I _R at V _R | | | TK _Z |
| | V | mA | V | Ω | mA | μA | V | μ | %/K |
| MM1Z 2V0 | 2.0 | 5 | 1.80...2.15 | 100 | 5 | 120 | 0.5 | | -0.09...-0.06 |
| MM1Z 2V2 | 2.2 | 5 | 2.08...2.33 | 100 | 5 | 120 | 0.7 | | -0.09...-0.06 |
| MM1Z 2V4 | 2.4 | 5 | 2.28...2.56 | 100 | 5 | 120 | 1.0 | | -0.09...-0.06 |
| MM1Z 2V7 | 2.7 | 5 | 2.5...2.9 | 110 | 5 | 120 | 1.0 | | -0.09...-0.06 |
| MM1Z 3V0 | 3.0 | 5 | 2.8...3.2 | 120 | 5 | 50 | 1.0 | | -0.08...-0.05 |
| MM1Z 3V3 | 3.3 | 5 | 3.1...3.5 | 130 | 5 | 20 | 1.0 | | -0.08...-0.05 |
| MM1Z 3V6 | 3.6 | 5 | 3.4...3.8 | 130 | 5 | 10 | 1.0 | | -0.08...-0.05 |
| MM1Z 3V9 | 3.9 | 5 | 3.7...4.1 | 130 | 5 | 5 | 1.0 | | -0.08...-0.05 |
| MM1Z 4V3 | 4.3 | 5 | 4.0...4.6 | 130 | 5 | 5 | 1.0 | | -0.06...-0.03 |
| MM1Z 4V7 | 4.7 | 5 | 4.4...5.0 | 130 | 5 | 2 | 1.0 | | -0.05...+0.02 |
| MM1Z 5V1 | 5.1 | 5 | 4.8...5.4 | 130 | 5 | 2 | 1.5 | | -0.02...+0.02 |
| MM1Z 5V6 | 5.6 | 5 | 5.2...6.0 | 80 | 5 | 1 | 2.5 | | -0.05...+0.05 |
| MM1Z 6V2 | 6.2 | 5 | 5.8...6.6 | 50 | 5 | 1 | 3.0 | | 0.03...0.06 |
| MM1Z 6V8 | 6.8 | 5 | 6.4...7.2 | 30 | 5 | 0.5 | 3.5 | | 0.03...0.07 |
| MM1Z 7V5 | 7.5 | 5 | 7.0...7.9 | 30 | 5 | 0.5 | 4.0 | | 0.03...0.07 |
| MM1Z 8V2 | 8.2 | 5 | 7.7...8.7 | 30 | 5 | 0.5 | 5.0 | | 0.03...0.08 |
| MM1Z 9V1 | 9.1 | 5 | 8.5...9.6 | 30 | 5 | 0.5 | 6.0 | | 0.03...0.09 |
| MM1Z 10 | 10 | 5 | 9.4...10.6 | 30 | 5 | 0.1 | 7.0 | | 0.03...0.1 |
| MM1Z 11 | 11 | 5 | 10.4...11.6 | 30 | 5 | 0.1 | 8.0 | | 0.03...0.11 |
| MM1Z 12 | 12 | 5 | 11.4...12.7 | 35 | 5 | 0.1 | 9.0 | | 0.03...0.11 |
| MM1Z 13 | 13 | 5 | 12.4...14.1 | 35 | 5 | 0.1 | 10 | | 0.03...0.11 |
| MM1Z 15 | 15 | 5 | 13.8...15.6 | 40 | 5 | 0.1 | 11 | | 0.03...0.11 |
| MM1Z 16 | 16 | 5 | 15.3...17.1 | 40 | 5 | 0.1 | 12 | | 0.03...0.11 |
| MM1Z 18 | 18 | 5 | 16.8...19.1 | 45 | 5 | 0.1 | 13 | | 0.03...0.11 |
| MM1Z 20 | 20 | 5 | 18.8...21.2 | 50 | 5 | 0.1 | 15 | | 0.03...0.11 |
| MM1Z 22 | 22 | 5 | 20.8...23.3 | 55 | 5 | 0.1 | 17 | | 0.04...0.12 |
| MM1Z 24 | 24 | 5 | 22.8...25.6 | 60 | 5 | 0.1 | 19 | | 0.04...0.12 |
| MM1Z 27 | 27 | 5 | 25.1...28.9 | 70 | 2 | 0.1 | 21 | | 0.04...0.12 |
| MM1Z 30 | 30 | 5 | 28...32 | 80 | 2 | 0.1 | 23 | | 0.04...0.12 |
| MM1Z 33 | 33 | 5 | 31...35 | 80 | 2 | 0.1 | 25 | | 0.04...0.12 |
| MM1Z 36 | 36 | 5 | 34...38 | 90 | 2 | 0.1 | 27 | | 0.04...0.12 |
| MM1Z 39 | 39 | 2.5 | 37...41 | 100 | 2 | 2 | 30 | | 0.04...0.12 |
| MM1Z 43 | 43 | 2.5 | 40...46 | 130 | 2 | 2 | 33 | | 0.04...0.12 |
| MM1Z 47 | 47 | 2.5 | 44...50 | 150 | 2 | 2 | 36 | | 0.04...0.12 |
| MM1Z 51 | 51 | 2.5 | 48...54 | 180 | 2 | 1 | 39 | | 0.04...0.12 |
| MM1Z 56 | 56 | 2.5 | 52...60 | 180 | 2 | 1 | 43 | | 0.04...0.12 |
| MM1Z 62 | 62 | 2.5 | 58...66 | 200 | 2 | 0.2 | 47 | | 0.04...0.12 |
| MM1Z 68 | 68 | 2.5 | 64...72 | 250 | 2 | 0.2 | 52 | | 0.04...0.12 |
| MM1Z 75 | 75 | 2.5 | 70...79 | 300 | 2 | 0.2 | 57 | | 0.04...0.12 |
| MM1Z 82 | 82 | 2.5 | 77...87 | 300 | 2 | 0.2 | 63 | | 0.05...0.12 |
| MM1Z 91 | 91 | 1 | 85...96 | 700 | 1 | 0.2 | 69 | | 0.05...0.12 |
| MM1Z 100 | 100 | 1 | 94...106 | 700 | 1 | 0.2 | 76 | | 0.05...0.12 |
| MM1Z 110 | 110 | 1 | 104...116 | 800 | 1 | 0.2 | 84 | | 0.05...0.12 |
| MM1Z 120 | 120 | 1 | 114...127 | 900 | 1 | 0.2 | 91 | | 0.05...0.12 |

1) Tested with pulses tp=20ms.

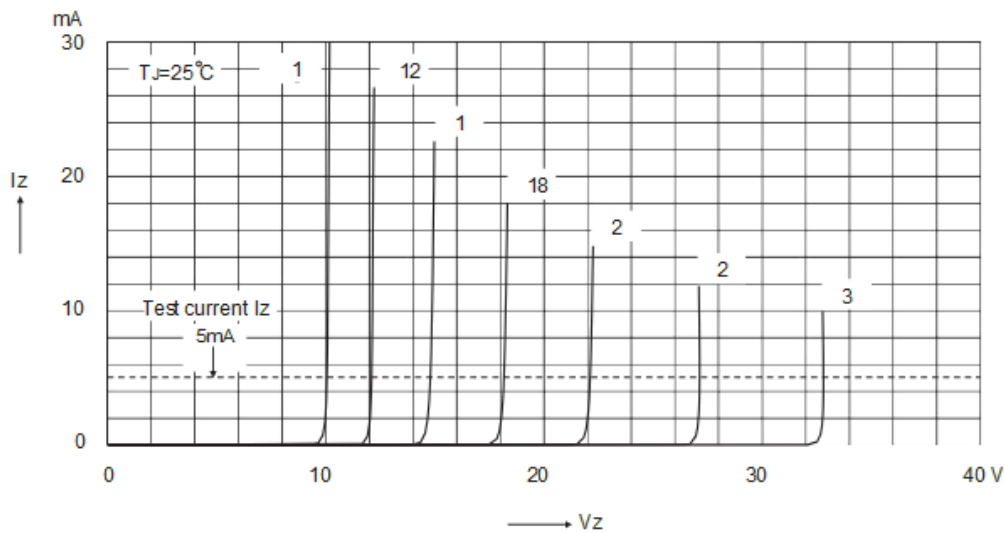
2) Z_t is measured at I_Z by given a very small A. C. current signal.

MM1Z... SILICON PLANAR ZENER DIODES

BREAKDOWN CHARACTERISTICS AT $T_J = \text{CONSTANT}$ (PULSED)

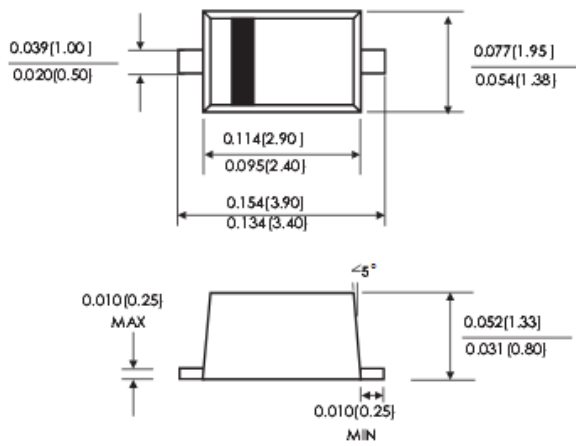


BREAKDOWN CHARACTERISTICS AT $T_J = \text{CONSTANT}$ (PULSED)



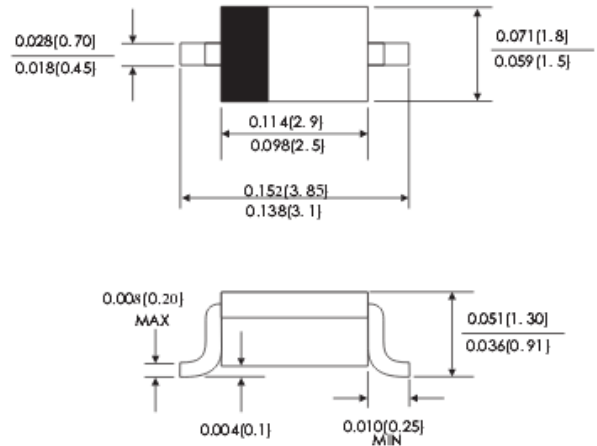
MM1Z... SILICON PLANAR ZENER DIODES

SOD-123FL



Dimensions in inches and (millimeters)

SOD-123



Dimensions in inches and (millimeters)

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