

Surface Mount Zener Diode

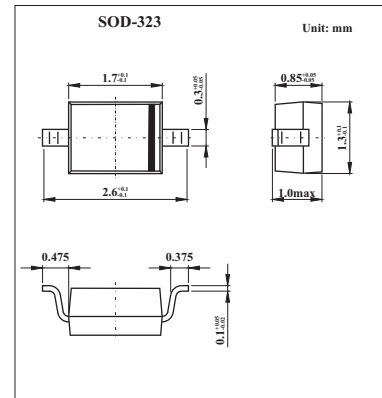
MM3Z39VS

Features

Planar Die Construction

Ultra-Small Surface Mount Package

Ideally Suited for Automated Assembly Processes

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

| Parameter | Symbol | Rating | Unit |
|--|-----------------|-------------|---------------------------|
| Power Dissipation (Note 1) | P_D | 200 | mW |
| Forward Voltage @ $I_F = 10\text{mA}$ | V_F | 0.9 | V |
| Thermal Resistance, Junction to Ambient Air (Note 1) | $R_{\theta JA}$ | 625 | $^\circ\text{C}/\text{W}$ |
| Operating and Storage Temperature Range | T_j, T_{STG} | -65 to +150 | $^\circ\text{C}$ |

Note: 1. Part mounted on FR-4 PC board with recommended pad layout.

Electrical Characteristics @ $T_a = 25^\circ\text{C}$ unless otherwise specified

| Type Number | Zener Voltage Range (Note 2) | | | | Maximum Zener Impedance (Note 3) | | | Maximum Reverse Current (Note 2) | | Typical Temperature Coefficient @ I_{ZT} $\text{mV}/^\circ\text{C}$ | |
|-------------|------------------------------|---------|---------|----------|----------------------------------|-------------------|---------------|----------------------------------|------|---|------|
| | $V_Z @ I_{ZT}$ | | | I_{ZT} | $Z_{ZT} @ I_{ZT}$ | $Z_{ZK} @ I_{ZK}$ | I_{ZK} | $I_R @ V_R$ | | Min | Max |
| | Min (V) | Nom (V) | Max (V) | mA | Ω | mA | μA | V | | | |
| MM3Z39VS | 37 | 39 | 41 | 2 | 130 | 500 | 0.5 | 0.05 | 27.3 | 33.4 | 41.2 |

Notes: 2. Short duration test pulse used to minimize self-heating effect.

3. $f = 1\text{kHz}$.

Marking

| | |
|---------|----|
| Marking | 2Z |
|---------|----|

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■ Typical Characteristics

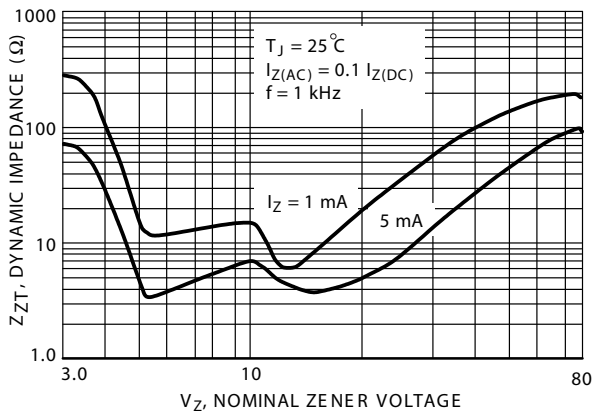


Fig.1 Effect of Zener Voltage on Zener Impedance

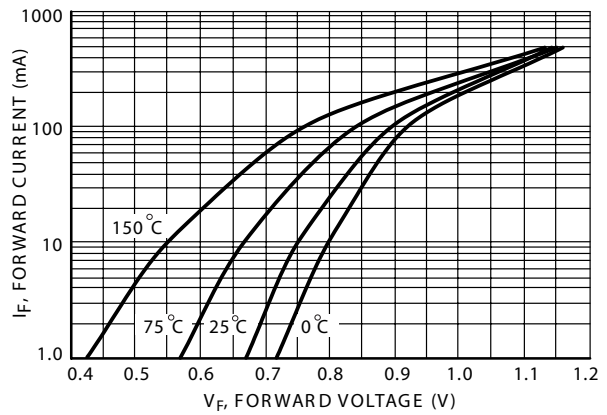


Fig.2 Typical Forward Voltage

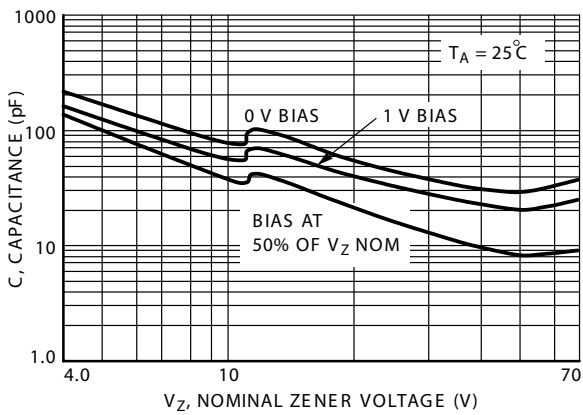


Fig.3 Typical Capacitance

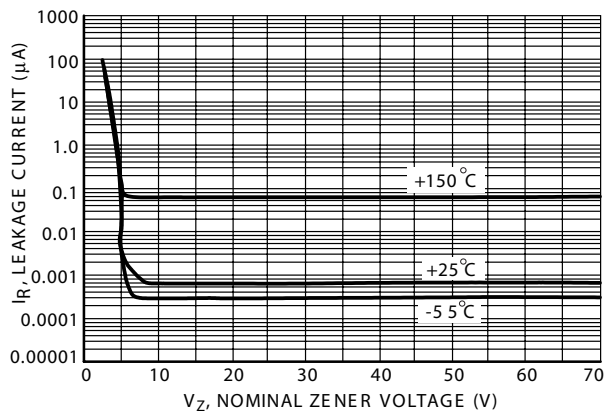


Fig.4 Typical Leakage Current

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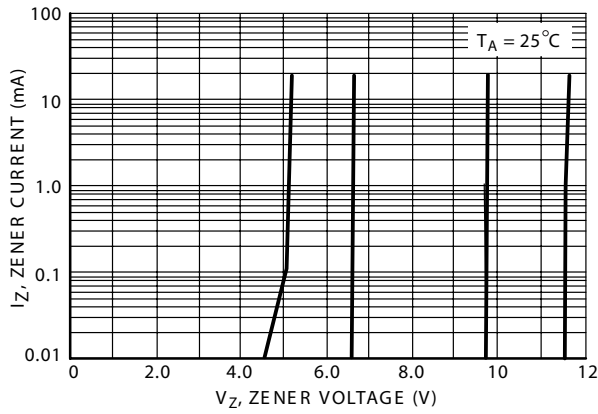


Fig.5 Zener Voltage versus Zener Current
(V_Z Up to 12 V)

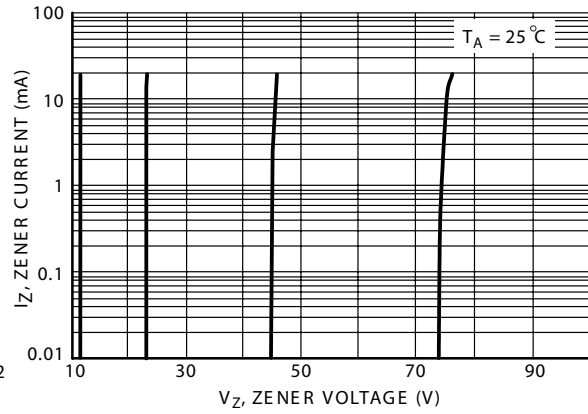


Fig.6 Zener Voltage versus Zener Current
(12 V to 75 V)

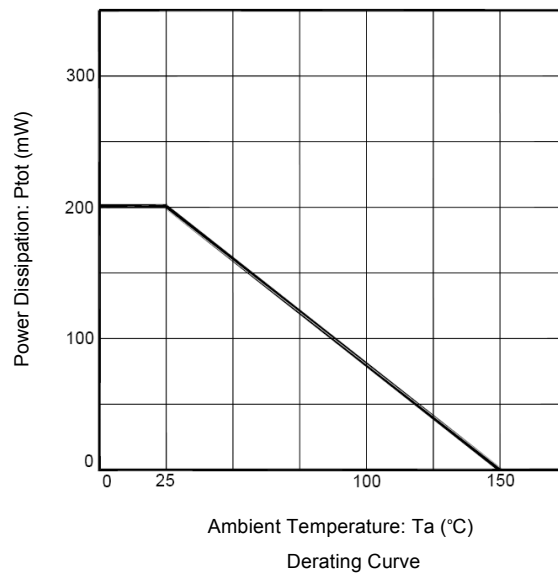


Fig.7 Power Dissipation VS Ambient Temperature