

**Maximum Ratings** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

| Characteristic                          | Symbol         | Value | Unit |
|---|----------------|-------|------|
| Forward Voltage @ I <sub>F</sub> = 10mA | V <sub>F</sub> | 0.9   | V    |

**Thermal Characteristics**

| Characteristic                                       | Symbol                            | Value       | Unit |
|--|-----------------------------------|-------------|------|
| Power Dissipation (Note 4) @T <sub>L</sub> = +75°C   | P <sub>D</sub>                    | 500         | mW   |
| Power Dissipation (Note 5) @T <sub>A</sub> = +25°C   | P <sub>D</sub>                    | 370         | mW   |
| Thermal Resistance, Junction to Ambient Air (Note 5) | R <sub>θJA</sub>                  | 338         | °C/W |
| Operating and Storage Temperature Range              | T <sub>J</sub> , T <sub>STG</sub> | -65 to +150 | °C   |

**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

| Type Number | Type Code | Zener Voltage Range (Note 6)     |         |         | Test Current | Maximum Zener Impedance<br>f = 1KHz |                                   | Maximum Reverse Leakage Current (Note 6)      |                |
|-------------|-----------|----------------------------------|---------|---------|--------------|-------------------------------------|-----------------------------------|---|----------------|
|             |           | V <sub>Z</sub> @ I <sub>ZT</sub> |         |         |              | I <sub>ZT</sub>                     | Z <sub>ZT</sub> @ I <sub>ZT</sub> | Z <sub>ZK</sub> @ I <sub>ZK</sub><br>= 0.25mA | I <sub>R</sub> |
|             |           | Nom (V)                          | Min (V) | Max (V) | mA           | Ω                                   |                                   | μA  | V              |
| MMSZ5221B   | C1        | 2.4                              | 2.28    | 2.52    | 20           | 30                                  | 1,200                             | 100   | 1.0            |
| MMSZ5223B   | C3        | 2.7                              | 2.57    | 2.84    | 20           | 30                                  | 1,300                             | 75  | 1.0            |
| MMSZ5225B   | C5        | 3.0                              | 2.85    | 3.15    | 20           | 30                                  | 1,600                             | 50  | 1.0            |
| MMSZ5226B   | G1        | 3.3                              | 3.14    | 3.47    | 20           | 28                                  | 1,600                             | 25  | 1.0            |
| MMSZ5227B   | G2        | 3.6                              | 3.42    | 3.78    | 20           | 24                                  | 1,700                             | 15  | 1.0            |
| MMSZ5228B   | G3        | 3.9                              | 3.71    | 4.10    | 20           | 23                                  | 1,900                             | 10  | 1.0            |
| MMSZ5229B   | G4        | 4.3                              | 4.09    | 4.52    | 20           | 22                                  | 2,000                             | 5.0   | 1.0            |
| MMSZ5230B   | G5        | 4.7                              | 4.47    | 4.94    | 20           | 19                                  | 1,900                             | 5.0   | 2.0            |
| MMSZ5231B   | E1        | 5.1                              | 4.85    | 5.36    | 20           | 17                                  | 1,600                             | 5.0   | 2.0            |
| MMSZ5232B   | E2        | 5.6                              | 5.32    | 5.88    | 20           | 11                                  | 1,600                             | 5.0   | 3.0            |
| MMSZ5233B   | E3        | 6.0                              | 5.70    | 6.30    | 20           | 7                                   | 1,600                             | 5.0   | 3.5            |
| MMSZ5234B   | E4        | 6.2                              | 5.89    | 6.51    | 20           | 7                                   | 1,000                             | 5.0   | 4.0            |
| MMSZ5235B   | E5        | 6.8                              | 6.46    | 7.14    | 20           | 5                                   | 750                               | 3.0   | 5.0            |
| MMSZ5236B   | F1        | 7.5                              | 7.13    | 7.88    | 20           | 6                                   | 500                               | 3.0   | 6.0            |
| MMSZ5237B   | F2        | 8.2                              | 7.79    | 8.61    | 20           | 8                                   | 500                               | 3.0   | 6.5            |
| MMSZ5238B   | F3        | 8.7                              | 8.27    | 9.14    | 20           | 8                                   | 600                               | 3.0   | 6.5            |
| MMSZ5239B   | F4        | 9.1                              | 8.65    | 9.56    | 20           | 10                                  | 600                               | 3.0   | 7.0            |
| MMSZ5240B   | F5        | 10                               | 9.50    | 10.50   | 20           | 17                                  | 600                               | 3.0   | 8.0            |
| MMSZ5241B   | H1        | 11                               | 10.45   | 11.55   | 20           | 22                                  | 600                               | 2.0   | 8.4            |
| MMSZ5242B   | H2        | 12                               | 11.40   | 12.60   | 20           | 30                                  | 600                               | 1.0   | 9.1            |
| MMSZ5243B   | H3        | 13                               | 12.35   | 13.65   | 9.5          | 13                                  | 600                               | 0.5   | 9.9            |
| MMSZ5245B   | H5        | 15                               | 14.25   | 15.75   | 8.5          | 16                                  | 600                               | 0.1   | 11             |
| MMSZ5246B   | J1        | 16                               | 15.20   | 16.80   | 7.8          | 17                                  | 600                               | 0.1   | 12             |
| MMSZ5248B   | J3        | 18                               | 17.10   | 18.90   | 7.0          | 21                                  | 600                               | 0.1   | 14             |
| MMSZ5250B   | J5        | 20                               | 19.00   | 21.00   | 6.2          | 25                                  | 600                               | 0.1   | 15             |
| MMSZ5251B   | K1        | 22                               | 20.90   | 23.10   | 5.6          | 29                                  | 600                               | 0.1   | 17             |
| MMSZ5252B   | K2        | 24                               | 22.80   | 25.20   | 5.2          | 33                                  | 600                               | 0.1   | 18             |
| MMSZ5254B   | K4        | 27                               | 25.65   | 28.35   | 5.0          | 41                                  | 600                               | 0.1   | 21             |
| MMSZ5255B   | K5        | 28                               | 26.60   | 29.40   | 4.5          | 44                                  | 600                               | 0.1   | 21             |
| MMSZ5256B   | M1        | 30                               | 28.50   | 31.50   | 4.2          | 49                                  | 600                               | 0.1   | 23             |
| MMSZ5257B   | M2        | 33                               | 31.35   | 34.65   | 3.8          | 58                                  | 700                               | 0.1   | 25             |
| MMSZ5258B   | M3        | 36                               | 34.20   | 37.80   | 3.4          | 70                                  | 700                               | 0.1   | 27             |
| MMSZ5259B   | M4        | 39                               | 37.05   | 40.95   | 3.2          | 80                                  | 800                               | 0.1   | 30             |

- Notes:
- R<sub>θJL</sub> = 132°C/W
  - Device mounted on FR-4 PCB with 1 inch copper pad layout.
  - Short duration pulse test used to minimize self-heating effect.

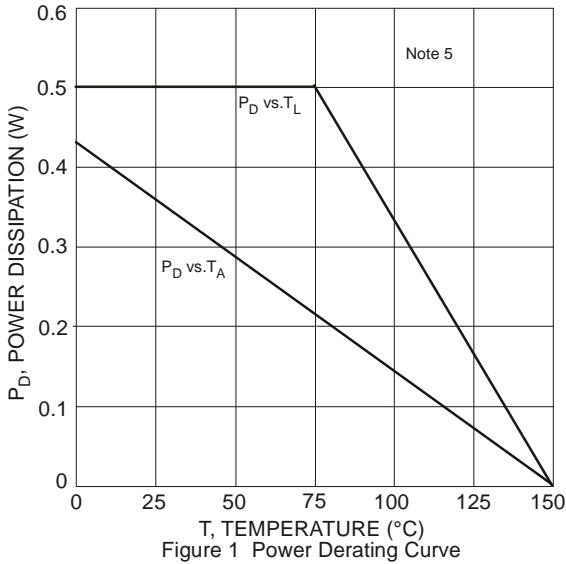


Figure 1 Power Derating Curve

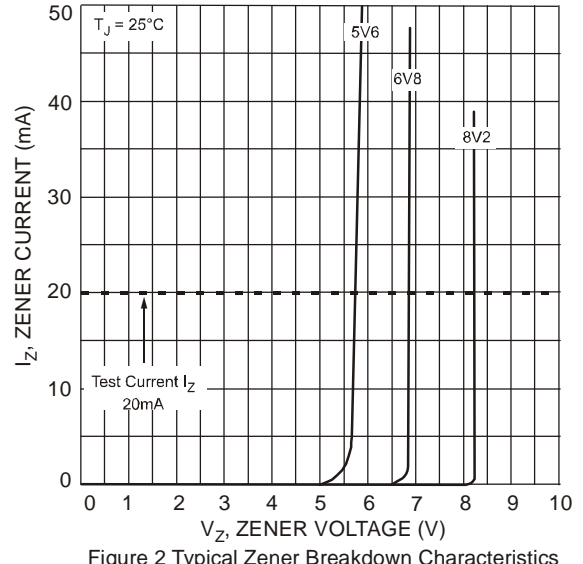


Figure 2 Typical Zener Breakdown Characteristics

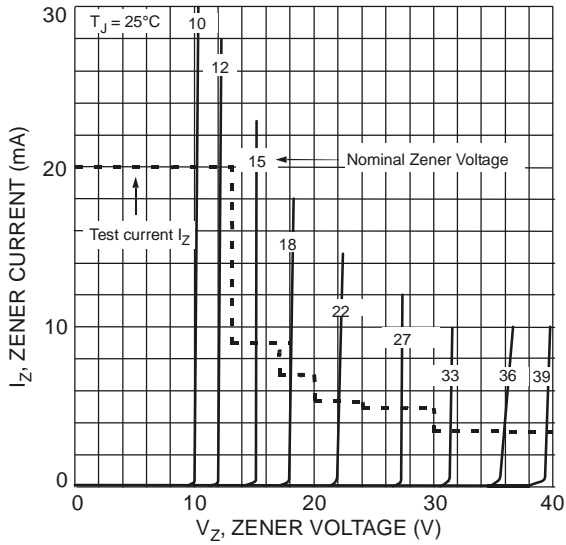


Figure 3 Typical Zener Breakdown Characteristics

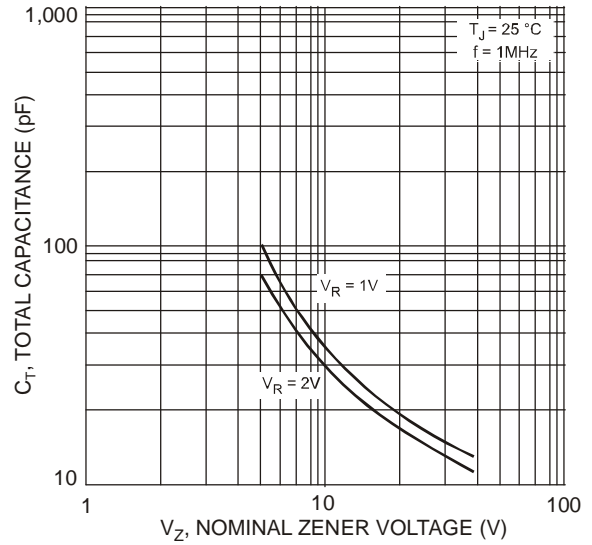


Figure 4 Typical Total Capacitance vs. Nominal Zener Voltage

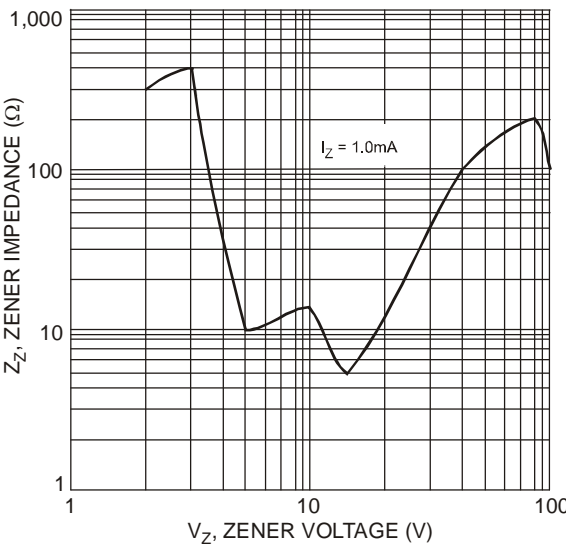


Figure 5 Typical Zener Impedance Characteristics

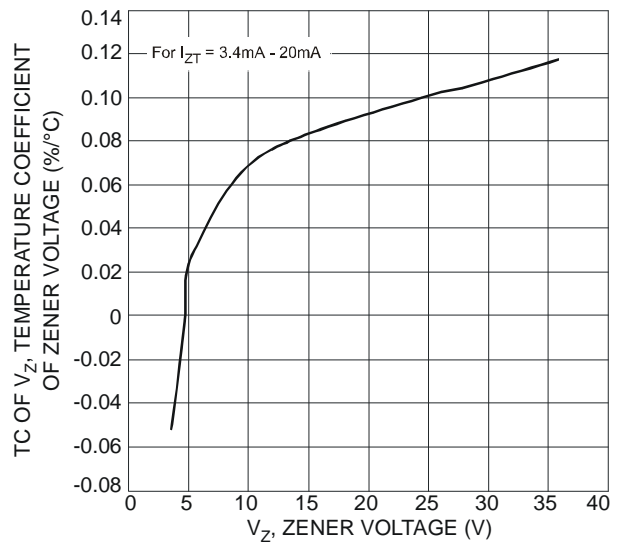
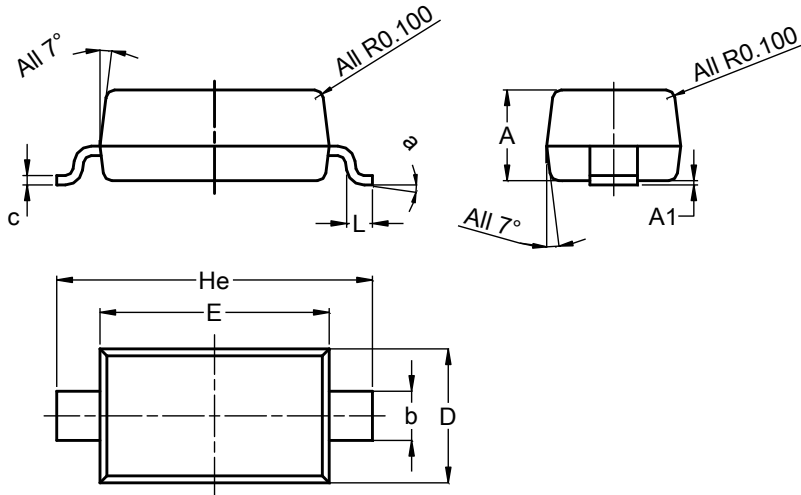


Figure 6 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage (MMSZ5227B - MMSZ5258B)

**Package Outline Dimensions**

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOD123

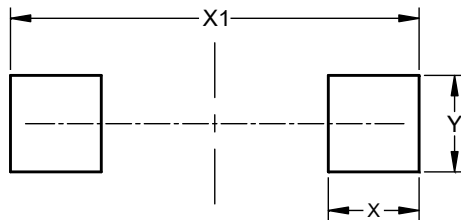


| SOD123               |      |      |      |
|----------------------|------|------|------|
| Dim                  | Min  | Max  | Typ  |
| A                    | 1.00 | 1.35 | 1.05 |
| A1                   | 0.00 | 0.10 | 0.05 |
| b                    | 0.52 | 0.62 | 0.57 |
| c                    | 0.10 | 0.15 | 0.11 |
| D                    | 1.40 | 1.70 | 1.55 |
| E                    | 2.55 | 2.85 | 2.65 |
| He                   | 3.55 | 3.85 | 3.65 |
| L                    | 0.25 | 0.40 | 0.30 |
| a                    | 0°   | 8°   | --   |
| All Dimensions in mm |      |      |      |

**Suggested Pad Layout**

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOD123



| Dimensions | Value (in mm) |
|------------|---------------|
| X          | 0.900         |
| X1         | 4.050         |
| Y          | 0.950         |

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