

## 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<br>Number | Type<br>Code | Zener Voltage Range (Note 6)     |         |         | Test<br>Current | Maximum Zener<br>Impedance<br>f = 1KHz |                                   | Maximum Reverse<br>Leakage Current (Note 6)   |                |
|----------------|--------------|----------------------------------|---------|---------|-----------------|----------------------------------------|-----------------------------------|-----------------------------------------------|----------------|
|                |              | V <sub>Z</sub> @ I <sub>ZT</sub> |         |         |                 | I <sub>ZT</sub>                        | Z <sub>YT</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              |                                        |                                   |                                               |                |
| 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: 4. R<sub>θJA</sub> = 132°C/W  
5. Device mounted on FR-4 PCB with 1 inch copper pad layout.  
6. Short duration pulse test used to minimize self-heating effect.

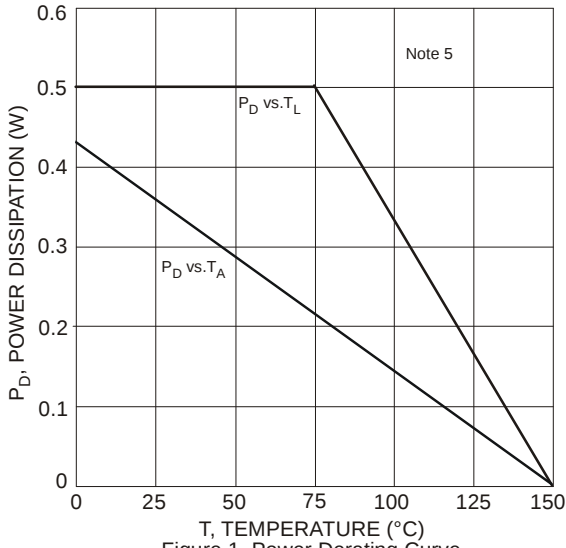


Figure 1 Power Derating Curve

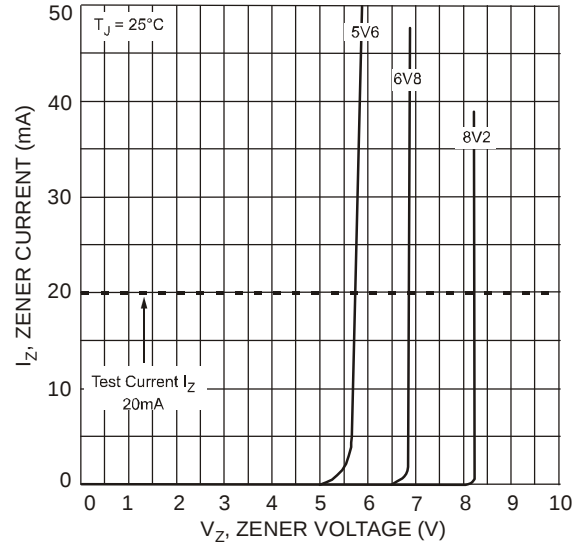


Figure 2 Typical Zener Breakdown Characteristics

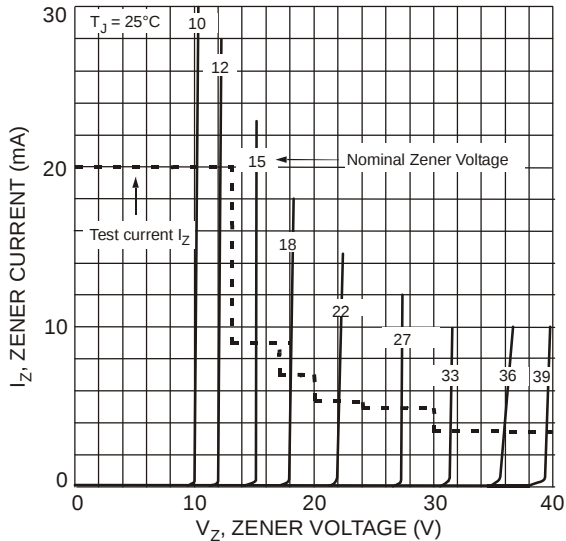


Figure 3 Typical Zener Breakdown Characteristics

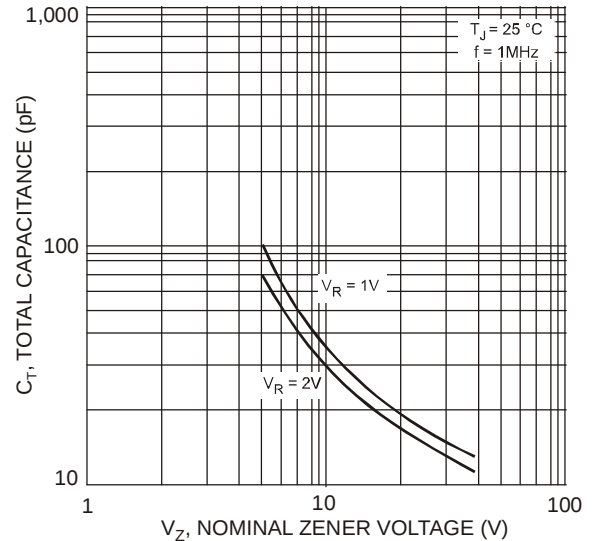


Figure 4 Typical Total Capacitance vs. Nominal Zener Voltage

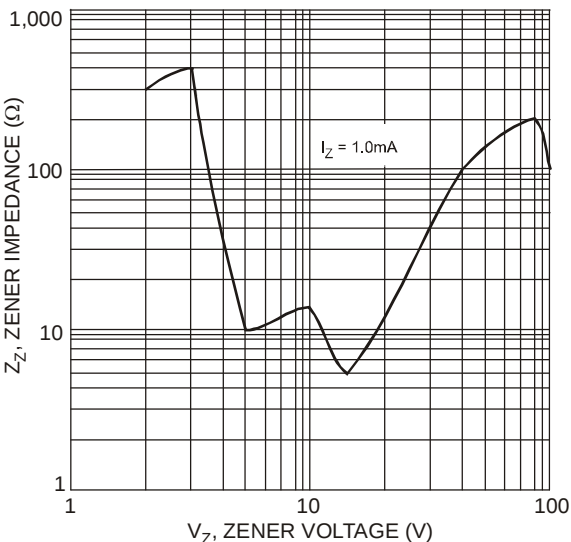


Figure 5 Typical Zener Impedance Characteristics

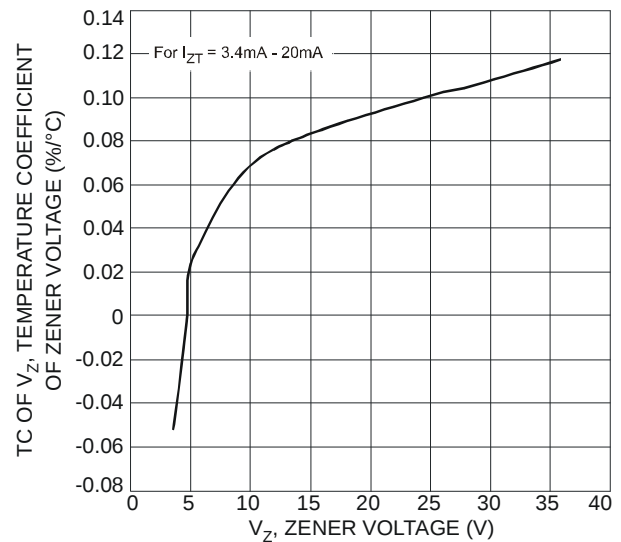
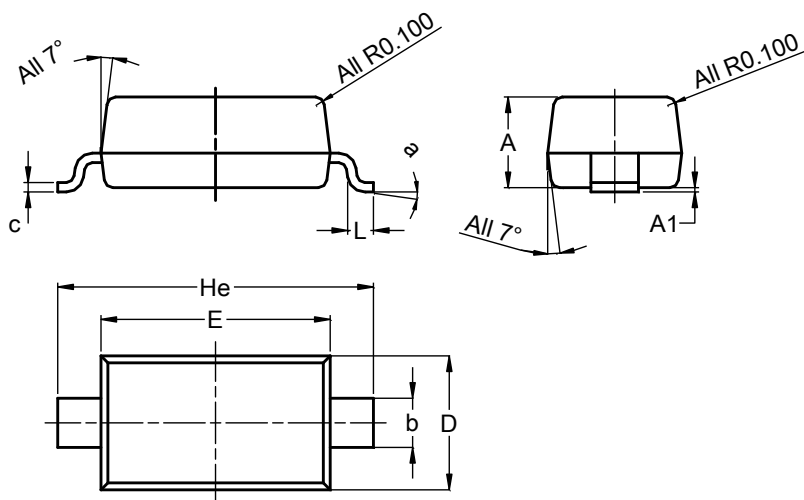


Figure 6 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage (MMSZ5227B - MMSZ5258B)

## Package Outline Dimensions

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

### SOD123

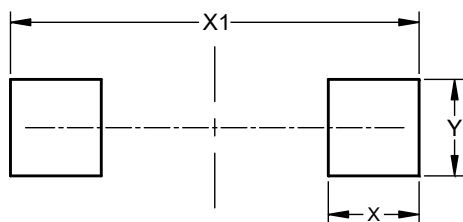


| SOD123               |      |      |      |
|----------------------|------|------|------|
| Dim                  | Min  | Max  | Typ  |
| A                    | 1.00 | 1.35 | 1.05 |
| A1                   | 0.00 | 0.10 | 0.05 |
| b                    | 0.52 | 0.62 | 0.57 |
| c                    | 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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