

SOD-123 SURFACE MOUNT SILICON ZENER DIODES

● Features

- Low Zener Impedance
- Power Dissipation of 500mW
- High Stability and High Reliability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C

Zener Diode
2.0 to 75 Volts
Power Dissipation
0.5 Watts

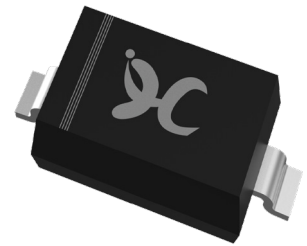
● Applications

Zener diode is generally used as reference voltage sources in regulated power supplies or as protective diode in overvoltage protection circuits.

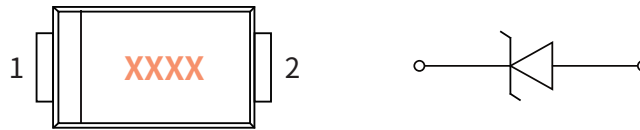
● Mechanical Data

- Case: SOD-123
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Cathode line denotes the cathode end

SOD-123



● Function Diagram

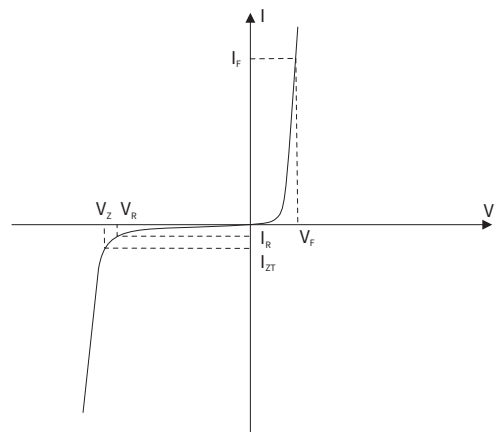


● Maximum Ratings (Ta=25°C Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | VALUE |
|-------------------------------------|-----------------|-------|------------|
| Power Dissipation | P_D | mW | 500 |
| Forward Voltage @ $I_F=10\text{mA}$ | V_F | V | 0.9 |
| Storage Temperature | T_{stg} | °C | -55 ~ +150 |
| Junction Temperature | T_J | °C | -55 ~ +150 |
| Typical Thermal Resistance | $R_{\theta JA}$ | °C /W | 340 |

● Electrical Parameter

| SYMBOL | PARAMETER |
|----------|------------------------------------|
| V_Z | Reverse zener voltage @ I_{ZT} |
| I_{ZT} | Reverse current |
| Z_{ZT} | Maximum Zener Impedance @ I_{ZT} |
| I_{ZK} | Reverse Current |
| Z_{ZK} | Maximum Zener Impedance @ I_{ZK} |
| I_R | Reverse leakage current @ V_R |
| V_R | Reverse voltage |
| I_F | Forward current |
| V_F | Forward voltage @ I_F |



MMSZ5221B THRU MMSZ5267B

SURFACE MOUNT ZENER DIODES



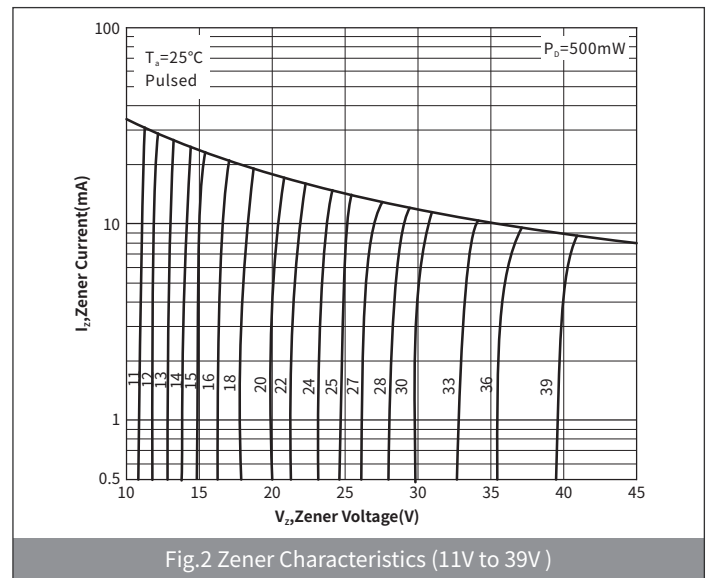
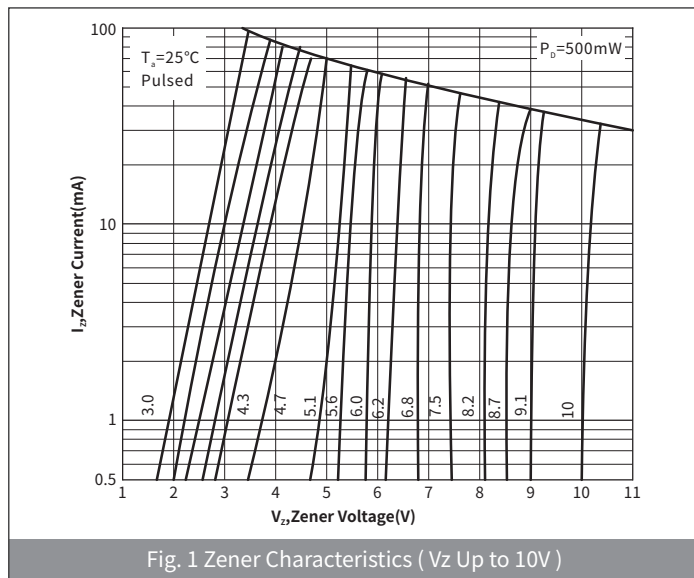
● Electrical Characteristics (Ta=25°C Unless otherwise noted)

| Type Number | Type Code | Nominal Zener Voltage | | | | Maximum Zener Impedance | Maximum Leakage Current | |
|-------------|-----------|-----------------------|---------|---------|-----------------|--|--------------------------------|--------------------|
| | | V _Z | | | I _{ZT} | Z _{ZT} @I _{ZT} =0.25mA | I _R @V _R | |
| | | Min.(V) | Nom.(V) | Max.(V) | (mA) | Z _{ZT} (Ω) | I _R (μA) | V _R (V) |
| MMSZ5221B | C1 | 2.28 | 2.4 | 2.52 | 20 | 30 | 100 | 1.0 |
| MMSZ5222B | C2 | 2.38 | 2.5 | 2.63 | 20 | 30 | 100 | 1.0 |
| MMSZ5223B | C3 | 2.57 | 2.7 | 2.84 | 20 | 30 | 75 | 1.0 |
| MMSZ5224B | C4 | 2.66 | 2.8 | 2.94 | 20 | 30 | 75 | 1.0 |
| MMSZ5225B | C5 | 2.85 | 3.0 | 3.15 | 20 | 30 | 50 | 1.0 |
| MMSZ5226B | G1 | 3.14 | 3.3 | 3.47 | 20 | 28 | 25 | 1.0 |
| MMSZ5227B | G2 | 3.42 | 3.6 | 3.78 | 20 | 24 | 15 | 1.0 |
| MMSZ5228B | G3 | 3.71 | 3.9 | 4.10 | 20 | 23 | 10 | 1.0 |
| MMSZ5229B | G4 | 4.09 | 4.3 | 4.52 | 20 | 22 | 5.0 | 1.0 |
| MMSZ5230B | G5 | 4.47 | 4.7 | 4.94 | 20 | 19 | 5.0 | 2.0 |
| MMSZ5231B | E1 | 4.85 | 5.1 | 5.36 | 20 | 17 | 5.0 | 2.0 |
| MMSZ5232B | E2 | 5.32 | 5.6 | 5.88 | 20 | 11 | 5.0 | 3.0 |
| MMSZ5233B | E3 | 5.70 | 6.0 | 6.30 | 20 | 7 | 5.0 | 3.5 |
| MMSZ5234B | E4 | 5.89 | 6.2 | 6.51 | 20 | 7 | 5.0 | 4.0 |
| MMSZ5235B | E5 | 6.46 | 6.8 | 7.14 | 20 | 5 | 3 | 5.0 |
| MMSZ5236B | F1 | 7.13 | 7.5 | 7.88 | 20 | 6 | 3 | 6.0 |
| MMSZ5237B | F2 | 7.79 | 8.2 | 8.61 | 20 | 8 | 3 | 6.5 |
| MMSZ5238B | F3 | 8.27 | 8.7 | 9.14 | 20 | 8 | 3 | 6.5 |
| MMSZ5239B | F4 | 8.65 | 9.1 | 9.56 | 20 | 10 | 3 | 7.0 |
| MMSZ5240B | F5 | 9.50 | 10.0 | 10.50 | 20 | 17 | 3 | 8.0 |
| MMSZ5241B | H1 | 10.45 | 11.0 | 11.55 | 20 | 22 | 2.0 | 8.4 |
| MMSZ5242B | H2 | 11.40 | 12.0 | 12.60 | 20 | 30 | 1.0 | 9.1 |
| MMSZ5243B | H3 | 12.35 | 13.0 | 13.65 | 9.5 | 13 | 0.5 | 9.9 |
| MMSZ5244B | H4 | 13.30 | 14.0 | 14.70 | 9.0 | 15 | 0.1 | 10.0 |
| MMSZ5245B | H5 | 14.25 | 15.0 | 15.75 | 8.5 | 16 | 0.1 | 11.0 |
| MMSZ5246B | J1 | 15.20 | 16.0 | 16.80 | 7.8 | 17 | 0.1 | 12.0 |
| MMSZ5247B | J2 | 16.15 | 17.0 | 17.85 | 7.5 | 19 | 0.1 | 13.0 |
| MMSZ5248B | J3 | 17.10 | 18.0 | 18.90 | 7.0 | 21 | 0.1 | 14.0 |
| MMSZ5249B | J4 | 18.05 | 19.0 | 19.95 | 6.6 | 23 | 0.1 | 14.0 |
| MMSZ5250B | J5 | 19.00 | 20.0 | 21.00 | 6.2 | 25 | 0.1 | 15.0 |
| MMSZ5251B | K1 | 20.90 | 22.0 | 23.10 | 5.6 | 29 | 0.1 | 17.0 |
| MMSZ5252B | K2 | 22.80 | 24.0 | 25.20 | 5.2 | 33 | 0.1 | 18.0 |
| MMSZ5253B | K3 | 23.75 | 25.0 | 26.25 | 5.0 | 35 | 0.1 | 19.0 |

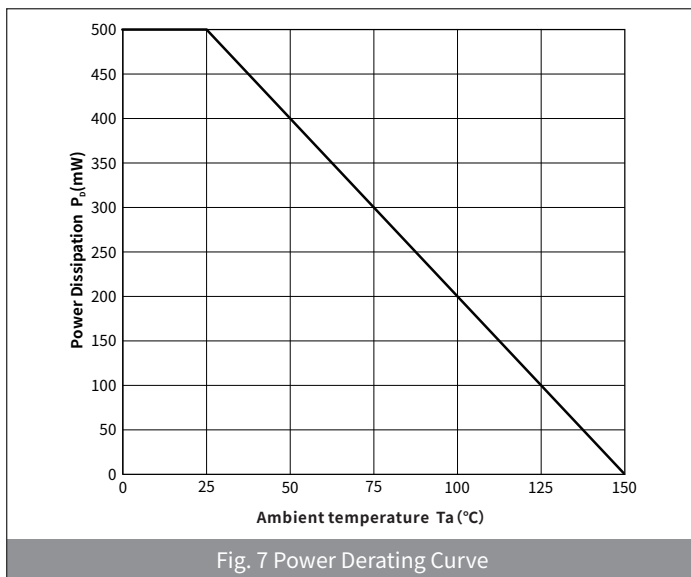
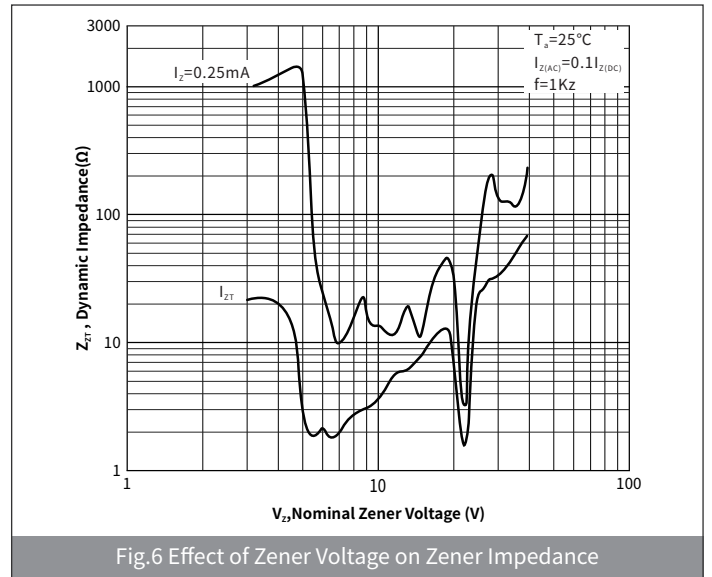
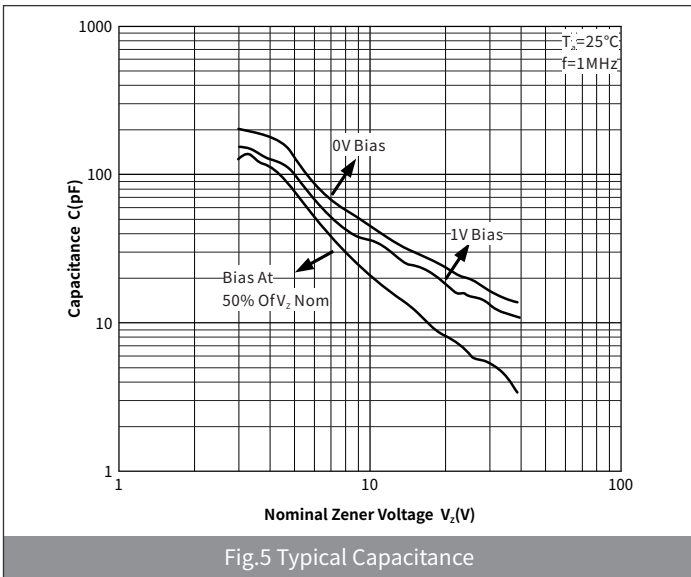
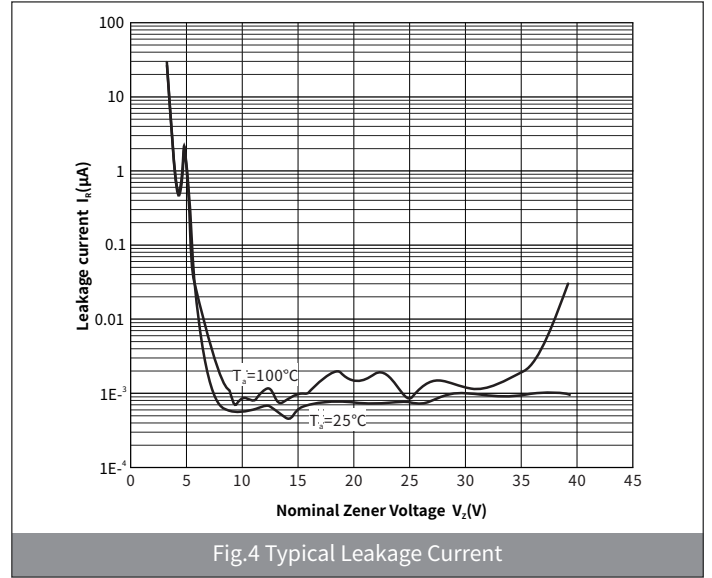
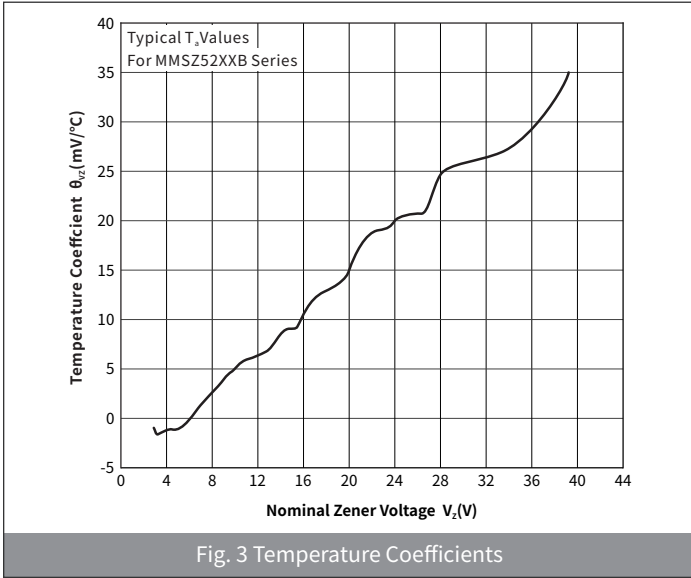
● **Electrical Characteristics** (Ta=25°C Unless otherwise noted)

| Type Number | Type Code | Nominal Zener Voltage | | | I _{ZT} | Z _{ZT} @I _{ZT} =0.25mA | Leakage Current | |
|-------------|-----------|-----------------------|---------|---------|-----------------|--|--------------------------------|--------------------|
| | | V _Z | | | | | I _R @V _R | V _R (V) |
| | | Min.(V) | Nom.(V) | Max.(V) | (mA) | Z _{ZT} (Ω) | | |
| MMSZ5254B | K4 | 25.65 | 27.0 | 28.35 | 5.0 | 600 | 0.1 | 21 |
| MMSZ5255B | K5 | 26.60 | 28.0 | 29.40 | 4.5 | 600 | 0.1 | 21 |
| MMSZ5256B | M1 | 28.50 | 30.0 | 31.50 | 4.2 | 600 | 0.1 | 23 |
| MMSZ5257B | M2 | 31.35 | 33.0 | 34.65 | 3.8 | 700 | 0.1 | 25 |
| MMSZ5258B | M3 | 34.20 | 36.0 | 37.80 | 3.4 | 700 | 0.1 | 27 |
| MMSZ5259B | M4 | 37.05 | 39.0 | 40.95 | 3.2 | 800 | 0.1 | 30 |
| MMSZ5260B | M5 | 40.85 | 43.0 | 45.15 | 3.0 | 900 | 0.1 | 33 |
| MMSZ5261B | N1 | 44.65 | 47.0 | 49.35 | 2.7 | 1000 | 0.1 | 36 |
| MMSZ5262B | N2 | 48.45 | 51.0 | 53.55 | 2.5 | 1100 | 0.1 | 39 |
| MMSZ5263B | N3 | 53.20 | 56.0 | 58.80 | 2.2 | 1300 | 0.1 | 43 |
| MMSZ5264B | N4 | 57.00 | 60.0 | 63.00 | 2.1 | 1400 | 0.1 | 46 |
| MMSZ5265B | N5 | 58.90 | 62.0 | 65.10 | 2.0 | 1400 | 0.1 | 47 |
| MMSZ5266B | P1 | 64.60 | 68.0 | 71.40 | 1.8 | 1600 | 0.1 | 52 |
| MMSZ5267B | P2 | 71.25 | 75.0 | 78.75 | 1.7 | 1700 | 0.1 | 56 |

● **Ratings And Characteristics Curves** (Ta=25°C Unless otherwise specified)



● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)



MMSZ5221B THRU MMSZ5267B

SURFACE MOUNT ZENER DIODES

● Ordering Information

| PACKAGE | PACKAGE CODE | UNIT WEIGHT(g) | REEL(pcs) | BOX(pcs) | CARTON(pcs) | DELIVERY MODE |
|---------|--------------|----------------|-----------|----------|-------------|---------------|
| SOD-123 | R1 | 0.012 | 3000 | 45000 | 180000 | 7" |

● Package Outline Dimensions (SOD-123)

| Symbol | Dimensions | | | |
|----------|-------------|------|--------|-------|
| | Millimeters | | Inches | |
| | Min. | Max. | Min. | Max. |
| A | 3.55 | 3.85 | 0.140 | 0.152 |
| B | 2.55 | 2.85 | 0.100 | 0.112 |
| C | 1.40 | 1.80 | 0.055 | 0.071 |
| D | 0.95 | 1.35 | 0.140 | 0.152 |
| E | 0.51 | 0.71 | 0.037 | 0.053 |
| F | - | 0.15 | - | 0.006 |
| G | 0.15 | 0.45 | 0.006 | 0.008 |
| H | 0.08 | 0.25 | 0.003 | 0.010 |
| θ | - | 8° | - | 8° |

● Suggested Pad Layout

| Symbol | Dimensions | | | |
|--------|-------------|------|--------|-------|
| | Millimeters | | Inches | |
| | Min. | Max. | Min. | Max. |
| J | 0.91 | - | 0.036 | - |
| K | - | 2.36 | - | 0.092 |
| M | 1.22 | - | 0.048 | - |

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