

SuperDiode – SOD-123 Plastic-Encapsulate Zener Diode


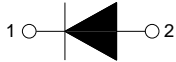
1. Features

- Low zener impedance
- Power dissipation of 500mW
- High stability and high reliability

2. Mechanical Data

- SOD-123 Small Outline Plastic Package
- Polarity: Color band denotes cathode end
- Mounting Position: Any

3. Marking and Circuit

| Marking | Circuit |
|---|---|
|  |  |

4. Specification

Absolute Maximum Rating & Thermal Characteristics

Ratings at 25 °C ambient temperature unless otherwise specified.

| Parameters | Symbol | Value | Unit |
|---|-----------------|-------------------|------|
| Forward voltage @ $I_F=10mA$ | V_F | 0.9 ²⁾ | V |
| Power dissipation | P_D | 500 ¹⁾ | mW |
| Thermal Resistance, Junction-to-Ambient | $R_{\theta JA}$ | 340 ³⁾ | °C/W |
| Thermal Resistance, Junction-to-Lead | $R_{\theta JL}$ | 150 ³⁾ | °C/W |
| Storage temperature range | T_S | -65~150 | °C |

1) Device mounted on ceramic PCB: 7.6mm x 9.4mm x 0.87mm with pad areas 25mm²

2) Short duration test pulse used to minimize self-heating effect

3) Thermal Resistance measurement obtained via infrared Scan Method.

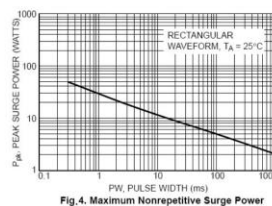
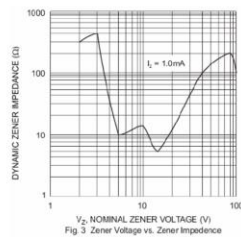
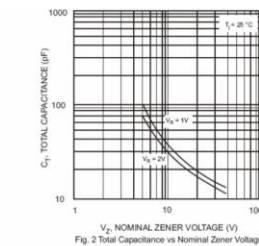
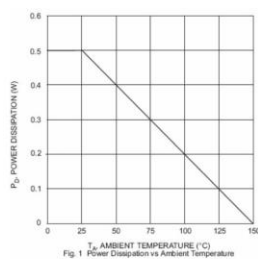
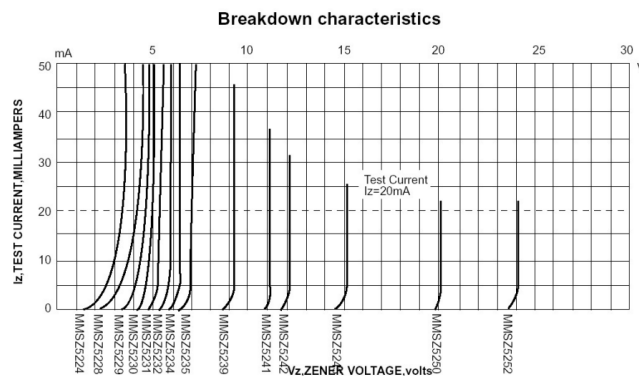
4) f=1KHz

Electrical Characteristics (At TA = 25°C unless otherwise specified)

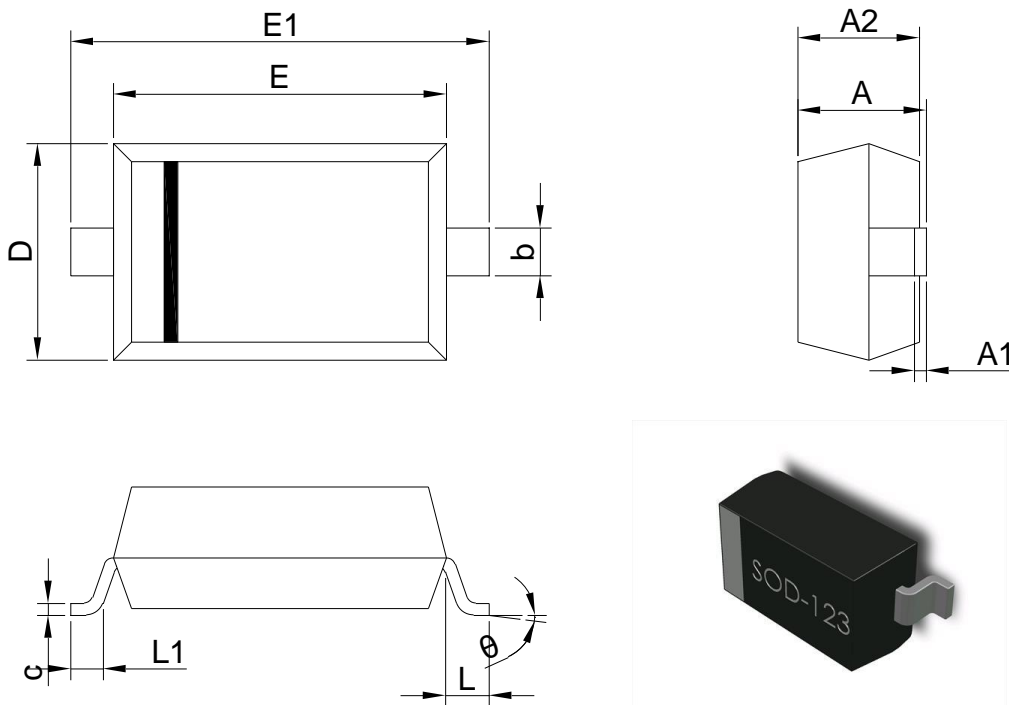
| Part Number | Marking | Vz1(@Izt) | | | Zzt@Izt | Zzk | | IR | |
|-------------|---------|-----------|-------|-----|----------|----------|------|---------|-----|
| | | Min | Max | Izt | Max | Max | Izk | Max | VR |
| | | (V) | (V) | mA | Ω | Ω | mA | μ A | V |
| MMSZ5221B | C1 | 2.28 | 2.52 | 20 | 30 | 1200 | 0.25 | 100 | 1 |
| MMSZ5222B | C2 | 2.38 | 2.63 | 20 | 30 | 1250 | 0.25 | 100 | 1 |
| MMSZ5223B | C3 | 2.57 | 2.84 | 20 | 30 | 1300 | 0.25 | 75 | 1 |
| MMSZ5224B | C4 | 2.66 | 2.94 | 20 | 30 | 1400 | 0.25 | 75 | 1 |
| MMSZ5225B | C5 | 2.85 | 3.15 | 20 | 30 | 1600 | 0.25 | 50 | 1 |
| MMSZ5226B | G1 | 3.14 | 3.47 | 20 | 28 | 1600 | 0.25 | 25 | 1 |
| MMSZ5227B | G2 | 3.42 | 3.78 | 20 | 24 | 1700 | 0.25 | 15 | 1 |
| MMSZ5228B | G3 | 3.71 | 4.1 | 20 | 23 | 1900 | 0.25 | 10 | 1 |
| MMSZ5229B | G4 | 4.09 | 4.52 | 20 | 22 | 2000 | 0.25 | 5 | 1 |
| MMSZ5230B | G5 | 4.47 | 4.94 | 20 | 19 | 1900 | 0.25 | 5 | 2 |
| MMSZ5231B | E1 | 4.85 | 5.36 | 20 | 17 | 1600 | 0.25 | 5 | 2 |
| MMSZ5232B | E2 | 5.32 | 5.88 | 20 | 11 | 1600 | 0.25 | 5 | 3 |
| MMSZ5233B | E3 | 5.7 | 6.3 | 20 | 7 | 1600 | 0.25 | 5 | 3.5 |
| MMSZ5234B | E4 | 5.89 | 6.51 | 20 | 7 | 1000 | 0.25 | 5 | 4 |
| MMSZ5235B | E5 | 6.46 | 7.14 | 20 | 5 | 750 | 0.25 | 3 | 5 |
| MMSZ5236B | F1 | 7.13 | 7.88 | 20 | 6 | 500 | 0.25 | 3 | 6 |
| MMSZ5237B | F2 | 7.79 | 8.61 | 20 | 8 | 500 | 0.25 | 3 | 6.5 |
| MMSZ5238B | F3 | 8.27 | 9.14 | 20 | 8 | 600 | 0.25 | 3 | 6.5 |
| MMSZ5239B | F4 | 8.65 | 9.56 | 20 | 10 | 600 | 0.25 | 3 | 7 |
| MMSZ5240B | F5 | 9.5 | 10.5 | 20 | 17 | 600 | 0.25 | 3 | 8 |
| MMSZ5241B | H1 | 10.45 | 11.55 | 20 | 22 | 600 | 0.25 | 2 | 8.4 |
| MMSZ5242B | H2 | 11.4 | 12.6 | 20 | 30 | 600 | 0.25 | 1 | 9.1 |
| MMSZ5243B | H3 | 12.35 | 13.65 | 9.5 | 13 | 600 | 0.25 | 0.5 | 9.9 |
| MMSZ5244B | H4 | 13.3 | 14.7 | 9 | 15 | 600 | 0.25 | 0.1 | 10 |
| MMSZ5245B | H5 | 14.25 | 15.75 | 8.5 | 16 | 600 | 0.25 | 0.1 | 11 |
| MMSZ5246B | J1 | 15.2 | 16.8 | 7.8 | 17 | 600 | 0.25 | 0.1 | 12 |
| MMSZ5247B | J2 | 16.15 | 17.85 | 7.5 | 19 | 600 | 0.25 | 0.1 | 13 |
| MMSZ5248B | J3 | 17.1 | 18.9 | 7 | 21 | 600 | 0.25 | 0.1 | 14 |
| MMSZ5249B | J4 | 18.05 | 19.95 | 6.6 | 23 | 600 | 0.25 | 0.1 | 14 |
| MMSZ5250B | J5 | 19 | 21 | 6.2 | 25 | 600 | 0.25 | 0.1 | 15 |
| MMSZ5251B | K1 | 20.9 | 23.1 | 5.6 | 29 | 600 | 0.25 | 0.1 | 17 |
| MMSZ5252B | K2 | 22.8 | 25.2 | 5.2 | 33 | 600 | 0.25 | 0.1 | 18 |
| MMSZ5253B | K3 | 23.75 | 26.25 | 5 | 35 | 600 | 0.25 | 0.1 | 19 |
| MMSZ5254B | K4 | 25.65 | 28.35 | 5 | 41 | 600 | 0.25 | 0.1 | 21 |
| MMSZ5255B | K5 | 26.6 | 29.4 | 4.5 | 44 | 600 | 0.25 | 0.1 | 21 |
| MMSZ5256B | M1 | 28.5 | 31.5 | 4.2 | 49 | 600 | 0.25 | 0.1 | 23 |

| Part Number | Marking | Vz1(@Izt) | | | Zzt@Izt | Zzk | | IR | |
|-------------|---------|-----------|-------|-----|----------|----------|------|---------|----|
| | | Min | Max | Izt | Max | Max | Izk | Max | VR |
| | | (V) | (V) | mA | Ω | Ω | mA | μ A | V |
| MMSZ5257B | M2 | 31.35 | 34.65 | 3.8 | 58 | 700 | 0.25 | 0.1 | 25 |
| MMSZ5258B | M3 | 34.2 | 37.8 | 3.4 | 70 | 700 | 0.25 | 0.1 | 27 |
| MMSZ5259B | M4 | 37.05 | 40.95 | 3.2 | 80 | 800 | 0.25 | 0.1 | 30 |
| MMSZ5260B | M5 | 40.85 | 45.15 | 3 | 93 | 900 | 0.25 | 0.1 | 33 |
| MMSZ5261B | N1 | 44.65 | 49.35 | 2.7 | 105 | 1000 | 0.25 | 0.1 | 36 |
| MMSZ5262B | N2 | 48.45 | 53.55 | 2.5 | 125 | 1100 | 0.25 | 0.1 | 39 |
| MMSZ5263B | N3 | 53.2 | 58.8 | 2.2 | 150 | 1300 | 0.25 | 0.1 | 43 |
| MMSZ5264B | N4 | 57 | 63 | 2.1 | 170 | 1400 | 0.25 | 0.1 | 46 |
| MMSZ5265B | N5 | 58.9 | 65.1 | 2 | 185 | 1400 | 0.25 | 0.1 | 47 |
| MMSZ5266B | P1 | 64.6 | 71.4 | 1.8 | 230 | 1600 | 0.25 | 0.1 | 52 |
| MMSZ5267B | P2 | 71.25 | 78.75 | 1.7 | 270 | 1700 | 0.25 | 0.1 | 56 |

5. Typical Characteristic

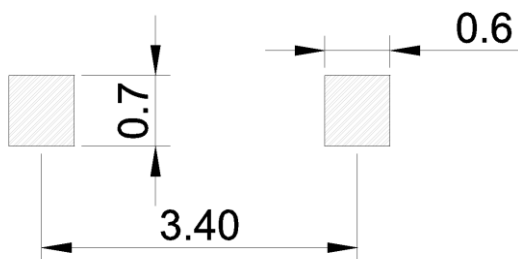


6. Dimension and Patterns (SOD-123)



Units: mm

| Symbol | Min. | Max. | Symbol | Min. | Max. |
|--------|------|------|--------|---------|------|
| A | 1.05 | 1.25 | E | 2.60 | 2.80 |
| A1 | 0.00 | 0.10 | E1 | 3.55 | 3.85 |
| A2 | 1.05 | 1.15 | L | 0.50REF | |
| b | 0.45 | 0.65 | L1 | 0.25 | 0.45 |
| c | 0.08 | 0.15 | θ | 0° | 8° |
| D | 1.50 | 1.70 | | | |



Note:

1. Controlling dimension: in millimeters
2. General tolerance: ±0.05mm
3. The pad layout is for reference only
4. Unit: mm

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