



Silicon Planar Zener Diodes

FEATURES

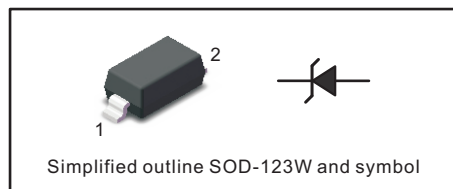
- Total power dissipation: Max. 500mW.
- Wide zener reverse voltage range 2.4V to 39V.
- Small plastic package suitable for surface mounted design.
- Tolerance approximately $\pm 5\%$

MECHANICAL DATA

- Case: SOD-123W
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 16mg/0.00056oz

PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1 | Cathode |
| 2 | Anode |



Absolute Maximum Ratings And Characteristics (Ta = 25 °C)

| Parameter | Symbol | Value | Unit |
|---|-----------------|------------|---------------|
| Power Dissipation | P_{tot} | 500 | mW |
| Typical thermal resistance junction to ambient ⁽¹⁾ | $R_{\theta JA}$ | 340 | $^{\circ}C/W$ |
| Operating and Storage Temperature Range | T_j, T_{stg} | -55 ~ +150 | $^{\circ}C$ |

(1) Thermal resistance from junction to ambient at P.C.B. mounted with 2.0" X 2.0" (5 X 5 cm) copper areas pads.

Fig.1 Maximum Continuous Power Derating

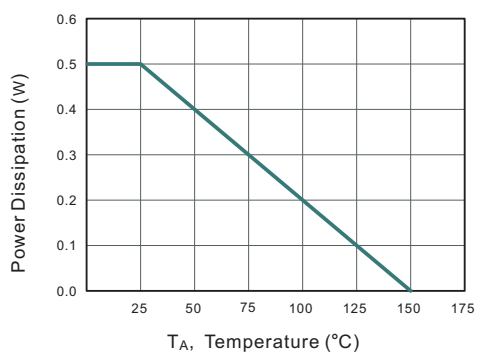
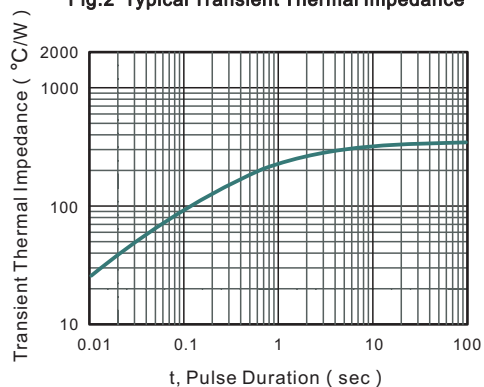


Fig.2 Typical Transient Thermal Impedance





Characteristics at Ta = 25°C Vf=1.2V max, If=100mA

| Type | Marking | Zener Voltage Range ⁽¹⁾ | | | Dynamic Impedance | | | | Reverse Current | |
|------------|---------|--|-----------|-----------|-------------------|--|-----------------|--|-----------------|-------------------|
| | | V _{ZT} (at I _{ZT}) | | | I _{ZT} | Z _{ZT} (at I _{ZT}) | I _{ZK} | Z _{ZK} (at I _{ZK}) | I _R | at V _R |
| | | Min (V) | Nom (V) | Max (V) | (mA) | Max (Ω) | (mA) | Max (Ω) | Max (uA) | (V) |
| MMSZ5221BW | C1 | 2.28 | 2.4 | 2.52 | 20 | 30 | 0.25 | 1200 | 100 | 1 |
| MMSZ5222BW | C2 | 2.38 | 2.5 | 2.63 | 20 | 30 | 0.25 | 1250 | 100 | 1 |
| MMSZ5223BW | C3 | 2.57 | 2.7 | 2.84 | 20 | 30 | 0.25 | 1300 | 75 | 1 |
| MMSZ5225BW | C5 | 2.85 | 3 | 3.15 | 20 | 30 | 0.25 | 1600 | 50 | 1 |
| MMSZ5226BW | G1 | 3.14 | 3.3 | 3.47 | 20 | 28 | 0.25 | 1600 | 25 | 1 |
| MMSZ5227BW | G2 | 3.42 | 3.6 | 3.78 | 20 | 24 | 0.25 | 1700 | 15 | 1 |
| MMSZ5228BW | G3 | 3.71 | 3.9 | 4.1 | 20 | 23 | 0.25 | 1900 | 10 | 1 |
| MMSZ5229BW | G4 | 4.09 | 4.3 | 4.52 | 20 | 22 | 0.25 | 2000 | 5 | 1 |
| MMSZ5230BW | G5 | 4.47 | 4.7 | 4.94 | 20 | 19 | 0.25 | 1900 | 5 | 2 |
| MMSZ5231BW | E1 | 4.85 | 5.1 | 5.36 | 20 | 17 | 0.25 | 1600 | 5 | 2 |
| MMSZ5232BW | E2 | 5.32 | 5.6 | 5.88 | 20 | 11 | 0.25 | 1600 | 5 | 3 |
| MMSZ5233BW | E3 | 5.7 | 6.0 | 6.3 | 20 | 7 | 0.25 | 1600 | 5 | 3.5 |
| MMSZ5234BW | E4 | 5.89 | 6.2 | 6.51 | 20 | 7 | 0.25 | 1000 | 5 | 4 |
| MMSZ5235BW | E5 | 6.46 | 6.8 | 7.14 | 20 | 5 | 0.25 | 750 | 3 | 5 |
| MMSZ5236BW | F1 | 7.13 | 7.5 | 7.88 | 20 | 6 | 0.25 | 500 | 3 | 6 |
| MMSZ5237BW | F2 | 7.79 | 8.2 | 8.61 | 20 | 8 | 0.25 | 500 | 3 | 6 |
| MMSZ5238BW | F3 | 8.27 | 8.7 | 9.14 | 20 | 8 | 0.25 | 600 | 3 | 6.5 |
| MMSZ5239BW | F4 | 8.65 | 9.1 | 9.56 | 20 | 10 | 0.25 | 600 | 3 | 6.5 |
| MMSZ5240BW | F5 | 9.5 | 10 | 10.5 | 20 | 17 | 0.25 | 600 | 3 | 8 |
| MMSZ5241BW | H1 | 10.45 | 11 | 11.55 | 20 | 22 | 0.25 | 600 | 3 | 8.4 |
| MMSZ5242BW | H2 | 11.4 | 12 | 12.6 | 20 | 30 | 0.25 | 600 | 2 | 9.1 |
| MMSZ5243BW | H3 | 12.35 | 13 | 13.65 | 9.5 | 13 | 0.25 | 600 | 1 | 9.9 |
| MMSZ5245BW | H5 | 14.25 | 15 | 15.75 | 8.5 | 16 | 0.25 | 600 | 0.5 | 11 |
| MMSZ5246BW | J1 | 15.2 | 16 | 16.8 | 7.8 | 17 | 0.25 | 600 | 0.1 | 12 |
| MMSZ5248BW | J3 | 17.1 | 18 | 18.9 | 7 | 21 | 0.25 | 600 | 0.1 | 14 |
| MMSZ5250BW | J5 | 19 | 20 | 21 | 6.2 | 25 | 0.25 | 600 | 0.1 | 15 |
| MMSZ5251BW | K1 | 20.9 | 22 | 23.1 | 5.6 | 29 | 0.25 | 600 | 0.1 | 17 |
| MMSZ5252BW | K2 | 22.8 | 24 | 25.2 | 5.2 | 33 | 0.25 | 600 | 0.1 | 18 |
| MMSZ5254BW | K4 | 25.65 | 27 | 28.35 | 5 | 41 | 0.25 | 600 | 0.1 | 21 |
| MMSZ5255BW | K5 | 26.6 | 28 | 29.4 | 4.5 | 44 | 0.25 | 600 | 0.1 | 21 |
| MMSZ5256BW | M1 | 28.5 | 30 | 31.5 | 4.2 | 49 | 0.25 | 600 | 0.1 | 23 |
| MMSZ5257BW | M2 | 31.35 | 33 | 34.65 | 3.8 | 58 | 0.25 | 700 | 0.1 | 25 |
| MMSZ5258BW | M3 | 34.2 | 36 | 37.8 | 3.4 | 70 | 0.25 | 700 | 0.1 | 27 |
| MMSZ5259BW | M4 | 37.05 | 39 | 40.95 | 3.2 | 80 | 0.25 | 800 | 0.1 | 30 |

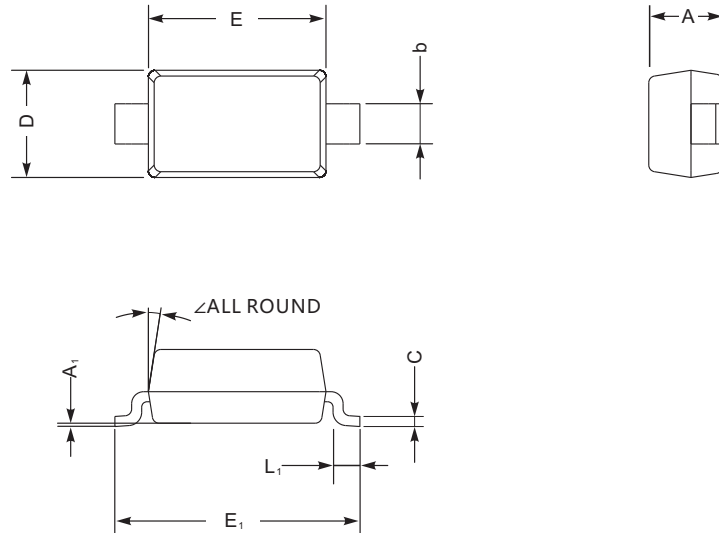
(1) V_{ZT} is tested with pulses (20 ms)



PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

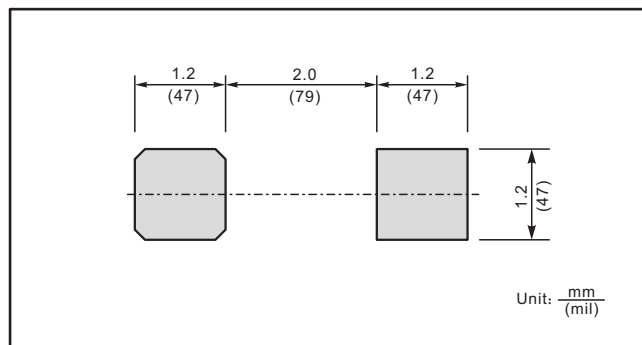
SOD-123W



SOD-123W mechanical data

| UNIT | | A | C | D | E | E ₁ | L ₁ | b | A ₁ | ∠ |
|------|-----|-----|------|-----|-----|----------------|----------------|-----|----------------|----|
| mm | max | 1.3 | 0.22 | 1.8 | 2.8 | 3.9 | 0.45 | 0.7 | 0.2 | 9° |
| | min | 0.9 | 0.09 | 1.5 | 2.5 | 3.6 | 0.25 | 0.5 | — | |
| mil | max | 51 | 8.7 | 71 | 110 | 154 | 18 | 28 | 8 | |
| | min | 35 | 3.5 | 59 | 98 | 142 | 10 | 20 | — | |

The recommended mounting pad size



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