



MMSZ5221B~MMSZ5262B

SURFACE MOUNT SILICON ZENER DIODES

VOLTAGE 2.4 to 51 Volt **POWER** 500 mWatt

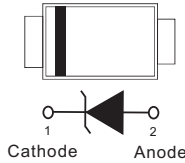
SOD-123 Unit : inch(mm)

FEATURES

- Planar Die construction
- 500mW Power Dissipation
- Ideally Suited for Automated Assembly Processes
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

MECHANICAL DATA

- Case: SOD-123, Molded Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0003 ounce, 0.0103 gram



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

| Parameter | Symbol | Value | Units |
|---|------------------|-------------|-------|
| Total Power Dissipation (Notes A) | P _D | 500 | mW |
| Typical Thermal Resistance (Notes B) (Notes A) | R _{θJA} | 430 325 | °C/W |
| Operating Junction and Storage Temperature Range | T _J | -55 to +150 | °C |

NOTES : A. Mounted on 100cm²(1mm thick) copper areas.

B. Mounted on a FR4 PCB, single-sided copper, mini pad.



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| Part Number | Nominal Zener Voltage | | | Max. Zener Impedance | | | | Max Reverse Leakage Current | | Marking Code |
|-------------|----------------------------------|--------|--------|-----------------------------------|-----|-----------------------------------|------|---------------------------------|------|--------------|
| | V _Z @ I _{ZT} | | | Z _{ZT} @ I _{ZT} | | Z _{ZK} @ I _{ZK} | | I _R @ V _R | | |
| | Nom. V | Min. V | Max. V | Ω | mA | Ω | mA | μA | V | |
| MMSZ5221B | 2.4 | 2.28 | 2.52 | 30 | 20 | 1200 | 0.25 | 100 | 1 | C1 |
| MMSZ5222B | 2.5 | 2.38 | 2.63 | 30 | 20 | 1250 | 0.25 | 100 | 1 | C2 |
| MMSZ5223B | 2.7 | 2.57 | 2.84 | 30 | 20 | 1300 | 0.25 | 75 | 1 | C3 |
| MMSZ5224B | 2.8 | 2.66 | 2.94 | 30 | 20 | 1400 | 0.25 | 75 | 1 | C4 |
| MMSZ5225B | 3 | 2.85 | 3.15 | 30 | 20 | 1600 | 0.25 | 50 | 1 | C5 |
| MMSZ5226B | 3.3 | 3.14 | 3.47 | 28 | 20 | 1600 | 0.25 | 25 | 1 | D1 |
| MMSZ5227B | 3.6 | 3.42 | 3.78 | 24 | 20 | 1700 | 0.25 | 15 | 1 | D2 |
| MMSZ5228B | 3.9 | 3.71 | 4.1 | 23 | 20 | 1900 | 0.25 | 10 | 1 | D3 |
| MMSZ5229B | 4.3 | 4.09 | 4.52 | 22 | 20 | 2000 | 0.25 | 5 | 1 | D4 |
| MMSZ5230B | 4.7 | 4.47 | 4.94 | 19 | 20 | 1900 | 0.25 | 5 | 2 | D5 |
| MMSZ5231B | 5.1 | 4.85 | 5.36 | 17 | 20 | 1600 | 0.25 | 5 | 2 | E1 |
| MMSZ5232B | 5.6 | 5.32 | 5.88 | 11 | 20 | 1600 | 0.25 | 5 | 3 | E2 |
| MMSZ5233B | 6.0 | 5.70 | 6.30 | 7 | 20 | 1600 | 0.25 | 5 | 3.5 | E3 |
| MMSZ5234B | 6.2 | 5.89 | 6.51 | 7 | 20 | 1000 | 0.25 | 5 | 4 | E4 |
| MMSZ5235B | 6.8 | 6.46 | 7.14 | 5 | 20 | 750 | 0.25 | 3 | 5 | E5 |
| MMSZ5236B | 7.5 | 7.13 | 7.88 | 6 | 20 | 500 | 0.25 | 3 | 6 | F1 |
| MMSZ5237B | 8.2 | 7.79 | 8.61 | 8 | 20 | 500 | 0.25 | 3 | 6 | F2 |
| MMSZ5238B | 8.7 | 8.27 | 9.14 | 8 | 20 | 600 | 0.25 | 3 | 6.5 | F3 |
| MMSZ5239B | 9.1 | 8.65 | 9.56 | 10 | 20 | 600 | 0.25 | 3 | 6.5 | F4 |
| MMSZ5240B | 10 | 9.5 | 10.5 | 17 | 20 | 600 | 0.25 | 3 | 8 | F5 |
| MMSZ5241B | 11 | 10.45 | 11.55 | 22 | 20 | 600 | 0.25 | 2 | 8.4 | H1 |
| MMSZ5242B | 12 | 11.4 | 12.6 | 30 | 20 | 600 | 0.25 | 1 | 9.1 | H2 |
| MMSZ5243B | 13 | 12.35 | 13.65 | 13 | 9.5 | 600 | 0.25 | 0.5 | 9.9 | H3 |
| MMSZ5244B | 14 | 13.3 | 14.7 | 15 | 9 | 600 | 0.25 | 0.1 | 10.5 | H4 |
| MMSZ5245B | 15 | 14.25 | 15.75 | 16 | 8.5 | 600 | 0.25 | 0.1 | 11 | H5 |
| MMSZ5246B | 16 | 15.2 | 16.8 | 17 | 7.8 | 600 | 0.25 | 0.1 | 12 | J1 |
| MMSZ5247B | 17 | 16.15 | 17.85 | 19 | 7.5 | 600 | 0.25 | 0.1 | 13 | J2 |
| MMSZ5248B | 18 | 17.1 | 18.9 | 21 | 7 | 600 | 0.25 | 0.1 | 14 | J3 |
| MMSZ5249B | 19 | 18.05 | 19.95 | 23 | 6.6 | 600 | 0.25 | 0.1 | 14 | J4 |
| MMSZ5250B | 20 | 19 | 21 | 25 | 6.2 | 600 | 0.25 | 0.1 | 15 | J5 |
| MMSZ5251B | 22 | 20.9 | 23.1 | 29 | 5.6 | 600 | 0.25 | 0.1 | 17 | K1 |
| MMSZ5252B | 24 | 22.8 | 25.2 | 33 | 5.2 | 600 | 0.25 | 0.1 | 18 | K2 |
| MMSZ5253B | 25 | 23.75 | 26.25 | 35 | 5.0 | 600 | 0.25 | 0.1 | 19 | K3 |
| MMSZ5254B | 27 | 25.65 | 28.35 | 41 | 5 | 600 | 0.25 | 0.1 | 21 | K4 |
| MMSZ5255B | 28 | 26.6 | 29.4 | 44 | 4.5 | 600 | 0.25 | 0.1 | 21 | K5 |
| MMSZ5256B | 30 | 28.5 | 31.5 | 49 | 4.2 | 600 | 0.25 | 0.1 | 23 | M1 |
| MMSZ5257B | 33 | 31.35 | 34.65 | 58 | 3.8 | 700 | 0.25 | 0.1 | 25 | M2 |
| MMSZ5258B | 36 | 34.2 | 37.8 | 70 | 3.4 | 700 | 0.25 | 0.1 | 27 | M3 |
| MMSZ5259B | 39 | 37.05 | 40.95 | 80 | 3.2 | 800 | 0.25 | 0.1 | 30 | M4 |
| MMSZ5260B | 43 | 40.85 | 45.15 | 93 | 3 | 900 | 0.25 | 0.1 | 33 | M5 |
| MMSZ5261B | 47 | 44.65 | 49.35 | 105 | 2.7 | 1000 | 0.25 | 0.1 | 36 | N1 |
| MMSZ5262B | 51 | 48.45 | 53.55 | 125 | 2.5 | 1100 | 0.25 | 0.1 | 39 | N2 |



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Fig.1 TEMPERATURE COEFFICIENTS



Fig.2 TEMPERATURE COEFFICIENTS

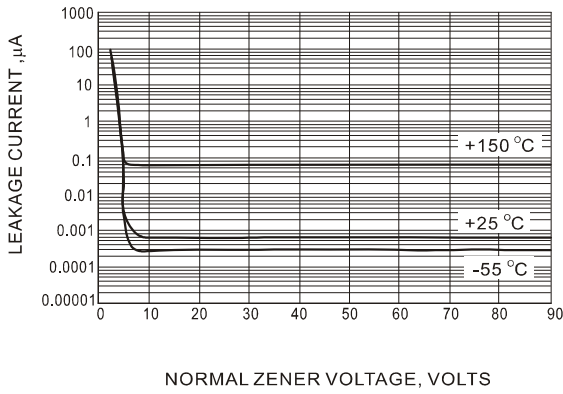


Fig.3 TYPICAL LEAKAGE CURRENT

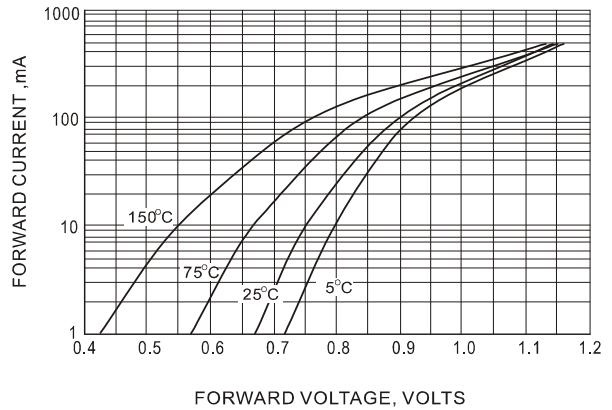


Fig.4 TYPICAL FORWARD VOLTAGE

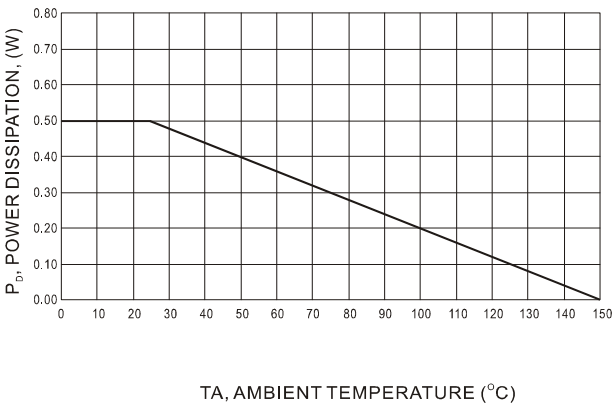
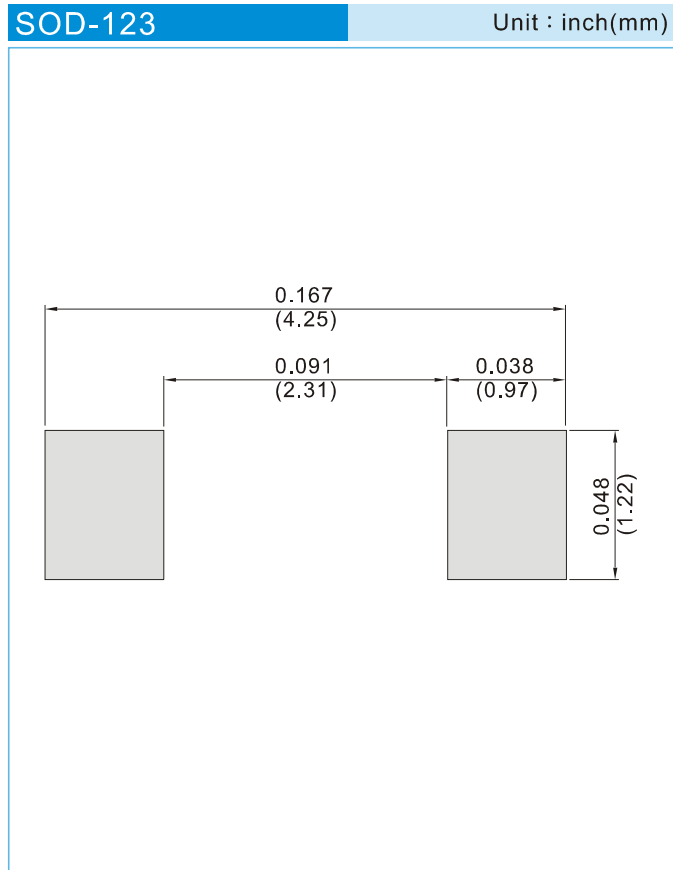


Fig.5 POWER DERATING CURVE



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MOUNTING PAD LAYOUT



ORDER INFORMATION

- Packing information
T/R - 10K per 13" plastic Reel
T/R - 3K per 7" plastic Reel



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Part No_packing code_Version

MMSZ5221B_R1_00001

MMSZ5221B_R2_00001

For example :

RB500V-40_R2_00001



| Packing Code XX | | | | Version Code XXXXX | | |
|--------------------------------------|----------------------|----------------------------------|----------------------|---------------------------|----------------------|---------------------------------------|
| Packing type | 1 st Code | Packing size code | 2 nd Code | HF or RoHS | 1 st Code | 2 nd ~5 th Code |
| Tape and Ammunition Box (T/B) | A | N/A | 0 | HF | 0 | serial number |
| Tape and Reel (T/R) | R | 7" | 1 | RoHS | 1 | serial number |
| Bulk Packing (B/P) | B | 13" | 2 | | | |
| Tube Packing (T/P) | T | 26mm | X | | | |
| Tape and Reel (Right Oriented) (TRR) | S | 52mm | Y | | | |
| Tape and Reel (Left Oriented) (TRL) | L | PANASERT T/B CATHODE UP (PBCU) | U | | | |
| FORMING | F | PANASERT T/B CATHODE DOWN (PBCD) | D | | | |



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