



MMSZ5221BS SERIES

SURFACE MOUNT SILICON ZENER DIODES

VOLTAGE 2.4 to 51 Volts

POWER 200 mWatts

SOD-323

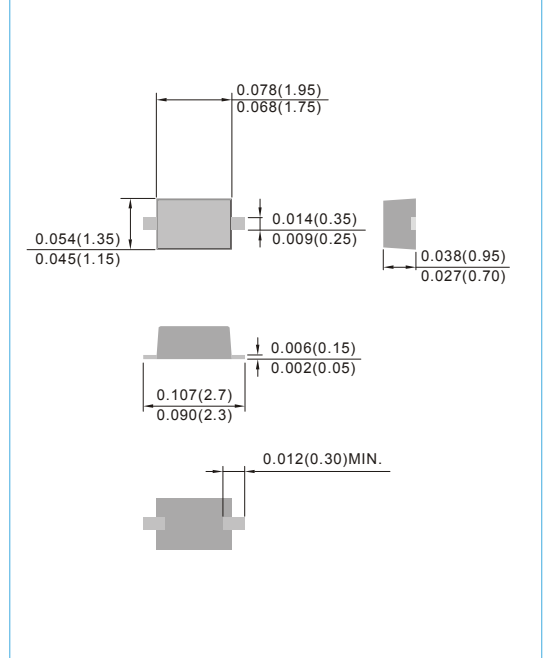
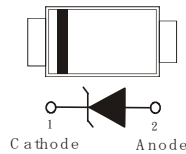
Unit : inch(mm)

FEATURES

- Planar Die construction
- 200mW Power Dissipation
- Ideally Suited for Automated Assembly Processes
- Lead free in comply with EU RoHS 2002/95/EC directives.
- Green molding compound as per IEC61249 Std. . (Halogen Free)

MECHANICAL DATA

- Case: SOD-323, Molded Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Approx. Weight: 0.00014 ounces, 0.0041 grams
- Mounting Position: Any



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

| Parameter | Symbol | Value | Units |
|---|--------|-------------|--------------------|
| Power Dissipation @ $T_A=25^{\circ}\text{C}$ (Note A) | P_D | 200 | mW |
| Operating Junction and Storage Temperature Range | T_J | -55 to +150 | $^{\circ}\text{C}$ |

NOTE :

A. Mounted on 5.0mm²(.013mm thick) land areas.



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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 | |
| 200 mWatts Zener Diodes | | | | | | | | | | |
| MMSZ5221BS | 2.4 | 2.28 | 2.52 | 30 | 20.0 | 1200 | 0.25 | 100 | 1.0 | C1 |
| MMSZ5222BS | 2.5 | 2.38 | 2.63 | 30 | 20.0 | 1250 | 0.25 | 100 | 1.0 | C2 |
| MMSZ5223BS | 2.7 | 2.57 | 2.84 | 30 | 20.0 | 1300 | 0.25 | 75 | 1.0 | C3 |
| MMSZ5225BS | 3 | 2.85 | 3.15 | 30 | 20.0 | 1600 | 0.25 | 50 | 1.0 | C5 |
| MMSZ5226BS | 3.3 | 3.14 | 3.47 | 28 | 20.0 | 1600 | 0.25 | 25 | 1.0 | D1 |
| MMSZ5227BS | 3.6 | 3.42 | 3.78 | 24 | 20.0 | 1700 | 0.25 | 15 | 1.0 | D2 |
| MMSZ5228BS | 3.9 | 3.71 | 4.10 | 23 | 20.0 | 1900 | 0.25 | 10 | 1.0 | D3 |
| MMSZ5229BS | 4.3 | 4.09 | 4.52 | 22 | 20.0 | 2000 | 0.25 | 5.0 | 1.0 | D4 |
| MMSZ5230BS | 4.7 | 4.47 | 4.94 | 19 | 20.0 | 1900 | 0.25 | 5.0 | 2.0 | D5 |
| MMSZ5231BS | 5.1 | 4.85 | 5.36 | 17 | 20.0 | 1600 | 0.25 | 5.0 | 2.0 | E1 |
| MMSZ5232BS | 5.6 | 5.32 | 5.88 | 11 | 20.0 | 1600 | 0.25 | 5.0 | 3.0 | E2 |
| MMSZ5234BS | 6.2 | 5.89 | 6.51 | 7 | 20.0 | 1000 | 0.25 | 5.0 | 4.0 | E4 |
| MMSZ5235BS | 6.8 | 6.46 | 7.14 | 5 | 20.0 | 750 | 0.25 | 3.0 | 5.0 | E5 |
| MMSZ5236BS | 7.5 | 7.13 | 7.88 | 6 | 20.0 | 500 | 0.25 | 3.0 | 6.0 | F1 |
| MMSZ5237BS | 8.2 | 7.79 | 8.61 | 8 | 20.0 | 500 | 0.25 | 3.0 | 6.0 | F2 |
| MMSZ5238BS | 8.7 | 8.27 | 9.14 | 8 | 20.0 | 600 | 0.25 | 3.0 | 6.5 | F3 |
| MMSZ5239BS | 9.1 | 8.65 | 9.56 | 10 | 20.0 | 600 | 0.25 | 3.0 | 6.5 | F4 |
| MMSZ5240BS | 10 | 9.50 | 10.50 | 17 | 20.0 | 600 | 0.25 | 3.0 | 8.0 | F5 |
| MMSZ5241BS | 11 | 10.45 | 11.55 | 22 | 20.0 | 600 | 0.25 | 2.0 | 8.4 | H1 |
| MMSZ5242BS | 12 | 11.40 | 12.60 | 30 | 20.0 | 600 | 0.25 | 1.0 | 9.1 | H2 |
| MMSZ5243BS | 13 | 12.35 | 13.65 | 13 | 9.5 | 600 | 0.25 | 0.5 | 9.9 | H3 |
| MMSZ5244BS | 14 | 13.30 | 14.70 | 15 | 9.0 | 600 | 0.25 | 0.1 | 10.5 | H4 |
| MMSZ5245BS | 15 | 14.25 | 15.75 | 16 | 8.5 | 600 | 0.25 | 0.1 | 11.0 | H5 |
| MMSZ5246BS | 16 | 15.20 | 16.80 | 17 | 7.8 | 600 | 0.25 | 0.1 | 12.0 | J1 |
| MMSZ5247BS | 17 | 16.15 | 17.85 | 19 | 7.5 | 600 | 0.25 | 0.1 | 13.0 | J2 |
| MMSZ5248BS | 18 | 17.10 | 18.90 | 21 | 7.0 | 600 | 0.25 | 0.1 | 14.0 | J3 |
| MMSZ5250BS | 20 | 19.00 | 21.00 | 25 | 6.2 | 600 | 0.25 | 0.1 | 15.0 | J5 |
| MMSZ5251BS | 22 | 20.90 | 23.10 | 29 | 5.6 | 600 | 0.25 | 0.1 | 17.0 | K1 |
| MMSZ5252BS | 24 | 22.80 | 25.20 | 33 | 5.2 | 600 | 0.25 | 0.1 | 18.0 | K2 |
| MMSZ5254BS | 27 | 25.65 | 28.35 | 41 | 5.0 | 600 | 0.25 | 0.1 | 21.0 | K4 |
| MMSZ5255BS | 28 | 26.60 | 29.40 | 44 | 4.5 | 600 | 0.25 | 0.1 | 21.0 | K5 |
| MMSZ5256BS | 30 | 28.50 | 31.50 | 49 | 4.2 | 600 | 0.25 | 0.1 | 23.0 | M1 |
| MMSZ5257BS | 33 | 31.35 | 34.65 | 58 | 3.8 | 700 | 0.25 | 0.1 | 25.0 | M2 |
| MMSZ5258BS | 36 | 34.20 | 37.80 | 70 | 3.4 | 700 | 0.25 | 0.1 | 27.0 | M3 |
| MMSZ5259BS | 39 | 37.05 | 40.95 | 80 | 3.2 | 800 | 0.25 | 0.1 | 30.0 | M4 |
| MMSZ5260BS | 43 | 40.85 | 45.15 | 93 | 3.0 | 900 | 0.25 | 0.1 | 33.0 | M5 |
| MMSZ5261BS | 47 | 44.65 | 49.35 | 105 | 2.7 | 1000 | 0.25 | 0.1 | 36.0 | N1 |
| MMSZ5262BS | 51 | 48.45 | 53.55 | 125 | 2.5 | 1100 | 0.25 | 0.1 | 39.0 | N2 |



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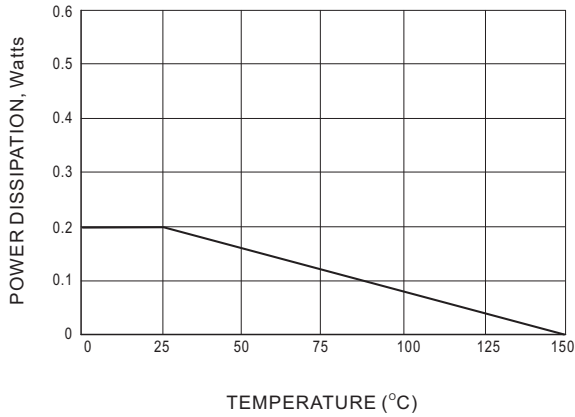


Fig.1 STEADY STATE POWER DERATING

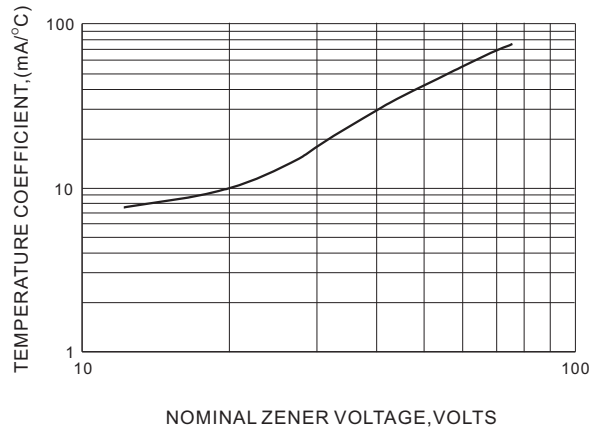


Fig.2 TEMPERATURE COEFFICIENTS

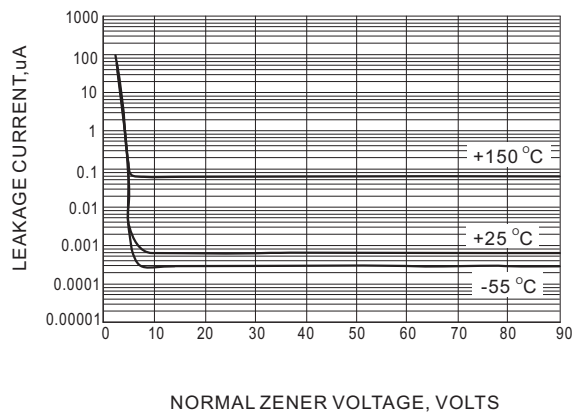


Fig.3 TYPICAL LEAKAGE CURRENT

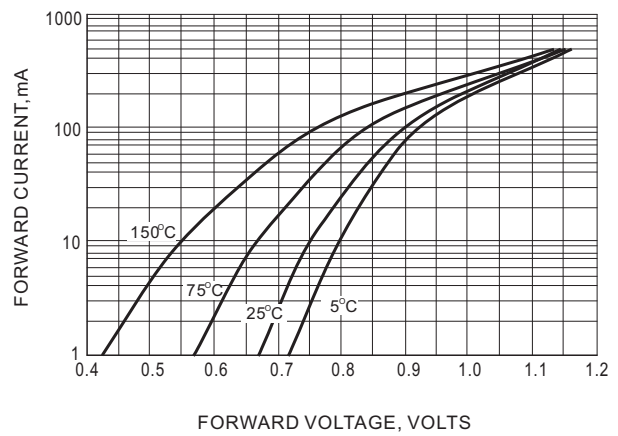
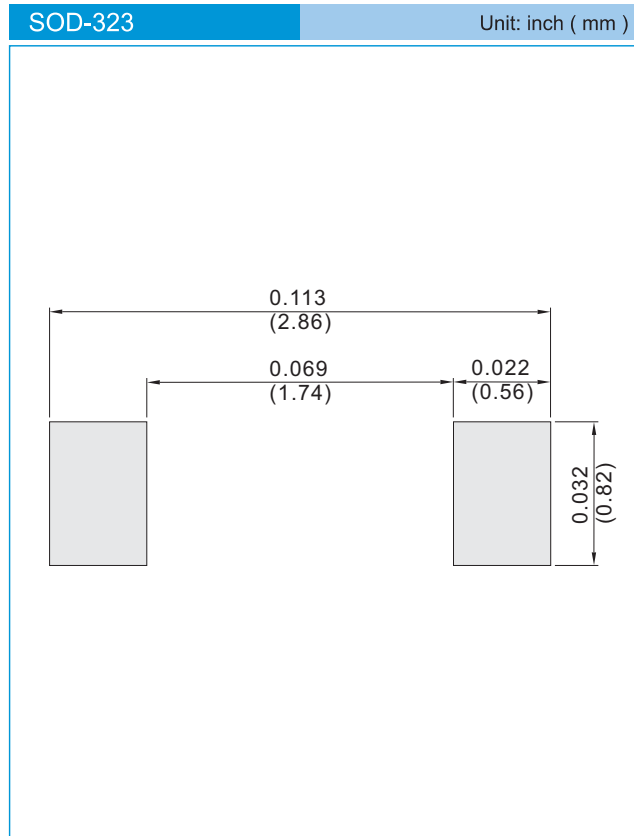


Fig.4 TYPICAL FORWARD VOLTAGE



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MOUNTING PAD LAYOUT



ORDER INFORMATION

- Packing information
T/R - 12K per 13" plastic Reel
T/R - 5K per 7" plastic Reel



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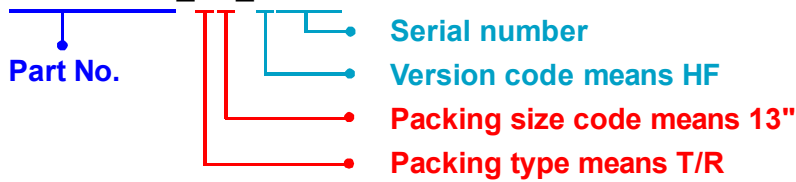
Part No_packing code_Version

MMSZ5221BS_R1_00001

MMSZ5221BS_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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