

ZMM5221B - ZMM5267B

ZENER DIODES

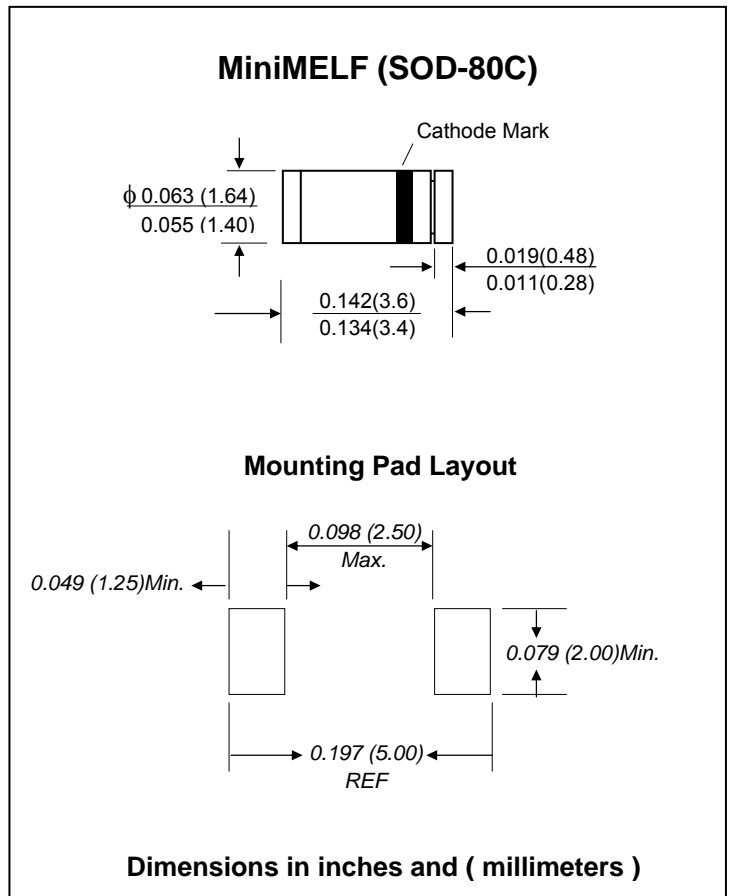
V_Z : 2.4 to 75 V
 P_D : 500 mW

FEATURES :

- Silicon planar zener diodes
- Standard Zener voltage tolerance is $\pm 5\%$
- Other tolerances are available upon request.
- These diodes are also available in the DO-35 case with the type designation 1N5221B ... 1N5267B,
- Pb / RoHS Free

MECHANICAL DATA :

- * Case : MiniMELF Glass Case (SOD-80C)
- * Weight : 0.05 gram (approximately)



Maximum Ratings and Thermal Characteristics

Rating at 25 °C ambient temperature unless otherwise specific.

| Parameter | Symbol | Value | Unit |
|--|-----------------|--------------------|------|
| Zener Current see Table "Characteristics" | | | |
| Maximum Forward Voltage at $I_F = 200$ mA. | V_F | 1.1 | V |
| Power Dissipation at $T_a = 75$ °C | P_D | 500 ⁽¹⁾ | mW |
| Thermal Resistance Junction to Ambient Air | $R_{\theta JA}$ | 300 ⁽¹⁾ | °C/W |
| Junction temperature | T_J | 175 | °C |
| Storage temperature range | T_{STG} | -65 to + 150 | °C |

Note: (1) Valid provided that electrodes are kept at ambient temperature

ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified

| Type | Nominal Zener Voltage ⁽³⁾ | Test Current | Maximum Zener Impedance ⁽¹⁾ | | Maximum Reverse Leakage Current | | Typical Temperature Coefficient $\alpha_{V_Z}(\%/^{\circ}\text{C})$ | Maximum Regulator Current ⁽²⁾ I_{ZM} |
|----------|--------------------------------------|--------------|--|-----------------------------------|---------------------------------|-------|--|--|
| | $V_Z @ I_{ZT}$ | I_{ZT} | $Z_{ZT} @ I_{ZT}$ | $Z_{ZK} @ I_{ZK} = 0.25\text{mA}$ | $I_R @ V_R$ | V_R | | |
| | (V) | (mA) | (Ω) | (Ω) | (μA) | (V) | | (mA) |
| ZMM5221B | 2.4 | 20 | 30 | 1200 | 100 | 1.0 | -0.085 | 190 |
| ZMM5222B | 2.5 | 20 | 30 | 1250 | 100 | 1.0 | -0.085 | 182 |
| ZMM5223B | 2.7 | 20 | 30 | 1300 | 75 | 1.0 | -0.080 | 168 |
| ZMM5224B | 2.8 | 20 | 30 | 1400 | 75 | 1.0 | -0.080 | 162 |
| ZMM5225B | 3.0 | 20 | 29 | 1600 | 50 | 1.0 | -0.075 | 152 |
| ZMM5226B | 3.3 | 20 | 28 | 1600 | 25 | 1.0 | -0.070 | 138 |
| ZMM5227B | 3.6 | 20 | 24 | 1700 | 15 | 1.0 | -0.065 | 126 |
| ZMM5228B | 3.9 | 20 | 23 | 1900 | 10 | 1.0 | -0.060 | 115 |
| ZMM5229B | 4.3 | 20 | 22 | 2000 | 5.0 | 1.0 | ± 0.055 | 106 |
| ZMM5230B | 4.7 | 20 | 19 | 1900 | 5.0 | 2.0 | ± 0.030 | 97 |
| ZMM5231B | 5.1 | 20 | 17 | 1600 | 5.0 | 2.0 | ± 0.030 | 89 |
| ZMM5232B | 5.6 | 20 | 11 | 1600 | 5.0 | 3.0 | +0.038 | 81 |
| ZMM5233B | 6.0 | 20 | 7 | 1600 | 5.0 | 3.5 | +0.038 | 76 |
| ZMM5234B | 6.2 | 20 | 7 | 1000 | 5.0 | 4.0 | +0.045 | 73 |
| ZMM5235B | 6.8 | 20 | 5 | 750 | 3.0 | 5.0 | +0.050 | 67 |
| ZMM5236B | 7.5 | 20 | 6 | 500 | 3.0 | 6.0 | +0.058 | 61 |
| ZMM5237B | 8.2 | 20 | 8 | 500 | 3.0 | 6.5 | +0.062 | 55 |
| ZMM5238B | 8.7 | 20 | 8 | 600 | 3.0 | 6.5 | +0.065 | 52 |
| ZMM5239B | 9.1 | 20 | 10 | 600 | 3.0 | 7.0 | +0.068 | 50 |
| ZMM5240B | 10 | 20 | 17 | 600 | 3.0 | 8.0 | +0.075 | 45 |
| ZMM5241B | 11 | 20 | 22 | 600 | 2.0 | 8.4 | +0.076 | 41 |
| ZMM5242B | 12 | 20 | 30 | 600 | 1.0 | 9.1 | +0.077 | 38 |
| ZMM5243B | 13 | 9.5 | 13 | 600 | 0.5 | 9.9 | +0.079 | 35 |
| ZMM5244B | 14 | 9.0 | 15 | 600 | 0.1 | 10 | +0.082 | 32 |
| ZMM5245B | 15 | 8.5 | 16 | 600 | 0.1 | 11 | +0.082 | 30 |
| ZMM5246B | 16 | 7.8 | 17 | 600 | 0.1 | 12 | +0.083 | 28 |
| ZMM5247B | 17 | 7.4 | 19 | 600 | 0.1 | 13 | +0.084 | 27 |
| ZMM5248B | 18 | 7.0 | 21 | 600 | 0.1 | 14 | +0.085 | 25 |
| ZMM5249B | 19 | 6.6 | 23 | 600 | 0.1 | 14 | +0.086 | 24 |
| ZMM5250B | 20 | 6.2 | 25 | 600 | 0.1 | 15 | +0.086 | 23 |
| ZMM5251B | 22 | 5.6 | 29 | 600 | 0.1 | 17 | +0.087 | 21 |
| ZMM5252B | 24 | 5.2 | 33 | 600 | 0.1 | 18 | +0.088 | 19.1 |
| ZMM5253B | 25 | 5.0 | 35 | 600 | 0.1 | 19 | +0.089 | 18.2 |
| ZMM5254B | 27 | 4.6 | 41 | 600 | 0.1 | 21 | +0.090 | 16.8 |
| ZMM5255B | 28 | 4.5 | 44 | 600 | 0.1 | 21 | +0.091 | 16.2 |
| ZMM5256B | 30 | 4.2 | 49 | 600 | 0.1 | 23 | +0.091 | 15.1 |
| ZMM5257B | 33 | 3.8 | 58 | 700 | 0.1 | 25 | +0.092 | 13.8 |
| ZMM5258B | 36 | 3.4 | 70 | 700 | 0.1 | 27 | +0.093 | 12.6 |
| ZMM5259B | 39 | 3.2 | 80 | 800 | 0.1 | 30 | +0.094 | 11.6 |
| ZMM5260B | 43 | 3.0 | 93 | 900 | 0.1 | 33 | +0.095 | 10.6 |
| ZMM5261B | 47 | 2.7 | 105 | 1000 | 0.1 | 36 | +0.095 | 9.7 |
| ZMM5262B | 51 | 2.5 | 125 | 1100 | 0.1 | 39 | +0.096 | 8.9 |
| ZMM5263B | 56 | 2.2 | 150 | 1300 | 0.1 | 43 | +0.096 | - |
| ZMM5264B | 60 | 2.1 | 170 | 1400 | 0.1 | 46 | +0.097 | - |
| ZMM5265B | 62 | 2.0 | 185 | 1400 | 0.1 | 47 | +0.097 | - |
| ZMM5266B | 68 | 1.8 | 230 | 1600 | 0.1 | 52 | +0.097 | - |
| ZMM5267B | 75 | 1.7 | 270 | 1700 | 0.1 | 56 | +0.098 | - |

Notes :

- (1) The Zener impedance is derived from the 1kHz AC voltage which results when an AC current having an RMS value equal to 10% of the Zener current (I_{ZT} or I_{ZK}) is superimposed on I_{ZT} or I_{ZK} . Zener impedance is measured at two points to insure a sharp knee on the breakdown curve and to eliminate unstable units
- (2) Valid provided that electrodes are kept at ambient temperature
- (3) Standard Zener voltage tolerance is $\pm 5\%$ tolerance