

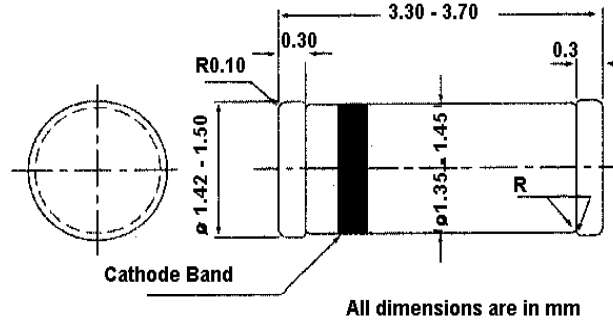


**RECTRON**  
RECTIFIER SPECIALISTS



**ZMM5221B  
thru  
ZMM5261B**

### 500mW 5% mini-M.E.L.F. ZENER DIODE



**Mini MELF (LL-34), SOD - 80C**  
*Hermetically Sealed, Glass Silicon Diodes*

#### **ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)**

| ITEMS                      | SYMBOL     | VALUE       | UNIT |
|----------------------------|------------|-------------|------|
| Power Dissipation          | $P_{TOT}$  | 500         | mW   |
| Thermal Resistance         | $R_{thJA}$ | 0.3         | K/mW |
| Forward Voltage @If= 10 mA | Vf         | 1.1         | V    |
| Vz Tolerance               |            | 5           | %    |
| Junction Temperature       | $T_j$      | -65 to +175 | °C   |
| Storage Temperature        | $T_{stg}$  | -65 to +175 | °C   |

#### **Mechanical Data**

| Items       | Material                  |
|-------------|---------------------------|
| Package     | mini-MELF (RoHS - HF)     |
| Case        | Hermetically sealed glass |
| Lead Finish | Sn plating                |

#### **ELECTRICAL CHARACTERISTICS (Ta = 25°C unless specified otherwise)**

| TYPE     | ZENER VOLTAGE |         | MAX ZENER IMPEDANCE | MAX ZENER IMPEDANCE      | MAXIMUM REVERSE CURRENT |         | TEMP COEFF. dvz (%/°C) |
|----------|---------------|---------|---------------------|--------------------------|-------------------------|---------|------------------------|
|          | Vz(V)         | IzT(mA) | Rz (ohms) IzT(mA)   | IzT = 1.0mA<br>Rz (ohms) | VR (V)                  | IR (uA) |                        |
| ZMM5221B | 2.4           | 20      | 30                  | 1200                     | 1.0                     | 100     | -0.085                 |
| ZMM5222B | 2.5           | 20      | 30                  | 1250                     | 1.0                     | 100     | -0.085                 |
| ZMM5223B | 2.7           | 20      | 30                  | 1300                     | 1.0                     | 75      | -0.080                 |
| ZMM5224B | 2.8           | 20      | 30                  | 1400                     | 1.0                     | 75      | -0.080                 |
| ZMM5225B | 3.0           | 20      | 29                  | 1600                     | 1.0                     | 50      | -0.075                 |



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| TYPE     | ZENER VOLTAGE |         | MAX ZENER IMPEDANCE | MAX ZENER IMPEDANCE      | MAXIMUM REVERSE CURRENT |         | TEMP COEFF. dvz (%/°C) |
|----------|---------------|---------|---------------------|--------------------------|-------------------------|---------|------------------------|
|          | Vz(V)         | IzT(mA) | Rz (ohms) IzT(mA)   | IzT = 1.0mA<br>Rz (ohms) | VR (V)                  | IR (uA) |                        |
| ZMM5226B | 3.3           | 20      | 28                  | 1600                     | 1.0                     | 25      | -0.070                 |
| ZMM5227B | 3.6           | 20      | 24                  | 1700                     | 1.0                     | 15      | -0.065                 |
| ZMM5228B | 3.9           | 20      | 23                  | 1900                     | 1.0                     | 10      | -0.060                 |
| ZMM5229B | 4.3           | 20      | 22                  | 2000                     | 1.0                     | 5       | +/-0.055               |
| ZMM5230B | 4.7           | 20      | 19                  | 1900                     | 2.0                     | 5       | +/-0.030               |
| ZMM5231B | 5.1           | 20      | 17                  | 1600                     | 2.0                     | 5       | +/-0.030               |
| ZMM5232B | 5.6           | 20      | 11                  | 1600                     | 3.0                     | 5       | +0.038                 |
| ZMM5233B | 6.0           | 20      | 7                   | 1600                     | 3.5                     | 5       | +0.038                 |
| ZMM5234B | 6.2           | 20      | 7                   | 1000                     | 4.0                     | 5       | +0.045                 |
| ZMM5235B | 6.8           | 20      | 5                   | 750                      | 5.6                     | 3.0     | +0.050                 |
| ZMM5236B | 7.5           | 20      | 6                   | 500                      | 6.0                     | 3.0     | +0.058                 |
| ZMM5237B | 8.2           | 20      | 8                   | 500                      | 6.5                     | 3.0     | +0.062                 |
| ZMM5238B | 8.7           | 20      | 8                   | 600                      | 6.5                     | 3.0     | +0.065                 |
| ZMM5239B | 9.1           | 20      | 10                  | 600                      | 7.0                     | 3.0     | +0.068                 |
| ZMM5240B | 10            | 20      | 17                  | 600                      | 8.0                     | 3.0     | +0.075                 |
| ZMM5241B | 11            | 20      | 22                  | 600                      | 8.4                     | 2.0     | +0.076                 |
| ZMM5242B | 12            | 20      | 30                  | 600                      | 9.1                     | 1.0     | +0.077                 |
| ZMM5243B | 13            | 9.5     | 13                  | 600                      | 9.9                     | 0.5     | +0.079                 |
| ZMM5244B | 14            | 9.0     | 15                  | 600                      | 10                      | 0.1     | +0.082                 |
| ZMM5245B | 15            | 8.5     | 16                  | 600                      | 11                      | 0.1     | +0.082                 |
| ZMM5246B | 16            | 7.8     | 17                  | 600                      | 12                      | 0.1     | +0.083                 |
| ZMM5247B | 17            | 7.4     | 19                  | 600                      | 13                      | 0.1     | +0.084                 |
| ZMM5248B | 18            | 7.0     | 21                  | 600                      | 14                      | 0.1     | +0.085                 |
| ZMM5249B | 19            | 6.6     | 23                  | 600                      | 14                      | 0.1     | +0.086                 |
| ZMM5250B | 20            | 6.2     | 25                  | 600                      | 15                      | 0.1     | +0.086                 |
| ZMM5251B | 22            | 5.6     | 29                  | 600                      | 17                      | 0.1     | +0.087                 |
| ZMM5252B | 24            | 5.2     | 33                  | 600                      | 18                      | 0.1     | +0.088                 |
| ZMM5253B | 25            | 5.0     | 35                  | 600                      | 19                      | 0.1     | +0.089                 |
| ZMM5254B | 27            | 4.6     | 41                  | 600                      | 21                      | 0.1     | +0.090                 |
| ZMM5255B | 28            | 4.5     | 44                  | 600                      | 21                      | 0.1     | +0.091                 |
| ZMM5256B | 30            | 4.2     | 49                  | 600                      | 23                      | 0.1     | +0.091                 |
| ZMM5257B | 33            | 3.8     | 58                  | 700                      | 25                      | 0.1     | +0.092                 |
| ZMM5258B | 36            | 3.4     | 70                  | 700                      | 27                      | 0.1     | +0.093                 |
| ZMM5259B | 39            | 3.2     | 80                  | 800                      | 30                      | 0.1     | +0.094                 |
| ZMM5260B | 43            | 3       | 93                  | 900                      | 33                      | 0.1     | +0.095                 |
| ZMM5261B | 47            | 2.7     | 150                 | 1000                     | 36                      | 0.1     | +0.095                 |