



# THE DATASHEET OF TZM5237B-GS08

## Small Signal Zener Diodes



### FEATURES

- Very sharp reverse characteristic
- Very high stability
- Electrical data identical with the devices 1N5221B to 1N5267B
- Low reverse current level
- Standard Zener voltage tolerance  $\pm 5\%$
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

### LINKS TO ADDITIONAL RESOURCES



3D Models

### APPLICATIONS

- Voltage stabilization

### PRIMARY CHARACTERISTICS

| PARAMETER             | VALUE               | UNIT |
|-----------------------|---------------------|------|
| $V_Z$ range nom.      | 2.4 to 75           | V    |
| Test current $I_{ZT}$ | 1.7 to 20           | mA   |
| $V_Z$ specification   | Thermal equilibrium |      |
| Circuit configuration | Single              |      |

### ORDERING INFORMATION

| DEVICE NAME          | ORDERING CODE                    | TAPED UNITS PER REEL           | MINIMUM ORDER QUANTITY |
|----------------------|----------------------------------|--------------------------------|------------------------|
| TZM5221B to TZM5267B | TZM5221B to TZM5267B-series-GS18 | 10 000 (8 mm tape on 13" reel) | 10 000/box             |
| TZM5221B to TZM5267B | TZM5221B to TZM5267B-series-GS08 | 2500 (8 mm tape on 7" reel)    | 12 500/box             |

### PACKAGE

| PACKAGE NAME      | WEIGHT | MOLDING COMPOUND<br>FLAMMABILITY RATING | MOISTURE SENSITIVITY<br>LEVEL        | SOLDERING CONDITIONS         |
|-------------------|--------|-----------------------------------------|--------------------------------------|------------------------------|
| MiniMELF (SOD-80) | 31 mg  | UL 94 V-0                               | MSL level 1<br>(according J-STD-020) | Peak temperature max. 260 °C |

### ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ °C}$ , unless otherwise specified)

| PARAMETER                 | TEST CONDITION                     | SYMBOL     | VALUE         | UNIT |
|---------------------------|------------------------------------|------------|---------------|------|
| Power dissipation         | $R_{thJA} = < 300\text{ K/W}$      | $P_{tot}$  | 500           | mW   |
| Zener current             |                                    | $I_Z$      | $P_{tot}/V_Z$ | mA   |
| Junction to ambient air   | On PC board 50 mm x 50 mm x 1.6 mm | $R_{thJA}$ | 500           | K/W  |
| Junction temperature      |                                    | $T_j$      | 175           | °C   |
| Storage temperature range |                                    | $T_{stg}$  | -65 to +175   | °C   |
| Forward voltage (max.)    | $I_F = 200\text{ mA}$              | $V_F$      | 1.1           | V    |

**ELECTRICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

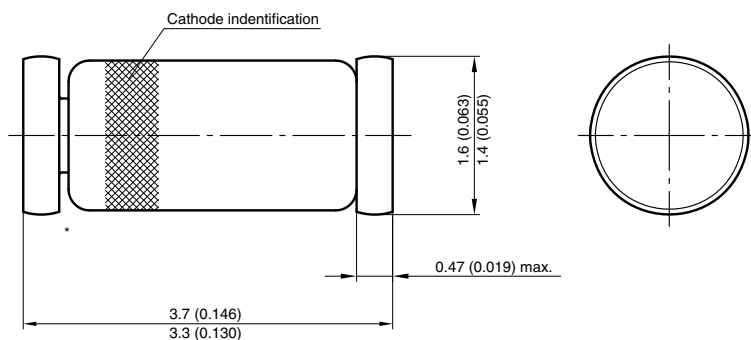
| PART NUMBER | ZENER VOLTAGE RANGE <sup>(1)</sup> | TEST CURRENT     |                  | REVERSE LEAKAGE CURRENT          |      | DYNAMIC RESISTANCE                 |                                     | TEMPERATURE COEFFICIENT |
|-------------|------------------------------------|------------------|------------------|----------------------------------|------|------------------------------------|-------------------------------------|-------------------------|
|             | V <sub>Z</sub> at I <sub>ZT1</sub> | I <sub>ZT1</sub> | I <sub>ZT2</sub> | I <sub>R</sub> at V <sub>R</sub> |      | Z <sub>Z</sub> at I <sub>ZT1</sub> | Z <sub>ZK</sub> at I <sub>ZT2</sub> | TK <sub>VZ</sub>        |
|             |                                    |                  |                  |                                  |      | f = 1 kHz                          |                                     |                         |
|             | V                                  | mA               |                  | μA                               | V    | Ω                                  |                                     |                         |
| NOM.        |                                    |                  |                  |                                  | TYP. | TYP.                               |                                     |                         |
| TZM5221     | 2.4                                | 20               | 0.25             | < 100                            | 1    | < 30                               | < 1200                              | < -0.085                |
| TZM5222     | 2.5                                | 20               | 0.25             | < 100                            | 1    | < 30                               | < 1250                              | < -0.085                |
| TZM5223     | 2.7                                | 20               | 0.25             | < 75                             | 1    | < 30                               | < 1300                              | < -0.080                |
| TZM5224     | 2.8                                | 20               | 0.25             | < 75                             | 1    | < 30                               | < 1400                              | < -0.080                |
| TZM5225     | 3                                  | 20               | 0.25             | < 50                             | 1    | < 29                               | < 1600                              | < -0.075                |
| TZM5226     | 3.3                                | 20               | 0.25             | < 25                             | 1    | < 28                               | < 1600                              | < -0.070                |
| TZM5227     | 3.6                                | 20               | 0.25             | < 15                             | 1    | < 24                               | < 1700                              | < -0.065                |
| TZM5228     | 3.9                                | 20               | 0.25             | < 10                             | 1    | < 23                               | < 1900                              | < -0.060                |
| TZM5229     | 4.3                                | 20               | 0.25             | < 5                              | 1    | < 22                               | < 2000                              | < ± 0.055               |
| TZM5230     | 4.7                                | 20               | 0.25             | < 5                              | 2    | < 19                               | < 1900                              | < ± 0.030               |
| TZM5231     | 5.1                                | 20               | 0.25             | < 5                              | 2    | < 17                               | < 1600                              | < ± 0.030               |
| TZM5232     | 5.6                                | 20               | 0.25             | < 5                              | 3    | < 11                               | < 1600                              | < +0.038                |
| TZM5233     | 6                                  | 20               | 0.25             | < 5                              | 3.5  | < 7                                | < 1600                              | < +0.038                |
| TZM5234     | 6.2                                | 20               | 0.25             | < 5                              | 4    | < 7                                | < 1000                              | < +0.045                |
| TZM5235     | 6.8                                | 20               | 0.25             | < 3                              | 5    | < 5                                | < 750                               | < +0.050                |
| TZM5236     | 7.5                                | 20               | 0.25             | < 3                              | 6    | < 6                                | < 500                               | < +0.058                |
| TZM5237     | 8.2                                | 20               | 0.25             | < 3                              | 6.5  | < 8                                | < 500                               | < +0.062                |
| TZM5238     | 8.7                                | 20               | 0.25             | < 3                              | 6.5  | < 8                                | < 600                               | < +0.065                |
| TZM5239     | 9.1                                | 20               | 0.25             | < 3                              | 7    | < 10                               | < 600                               | < +0.068                |
| TZM5240     | 10                                 | 20               | 0.25             | < 3                              | 8    | < 17                               | < 600                               | < +0.075                |
| TZM5241     | 11                                 | 20               | 0.25             | < 2                              | 8.4  | < 22                               | < 600                               | < +0.076                |
| TZM5242     | 12                                 | 20               | 0.25             | < 1                              | 9.1  | < 30                               | < 600                               | < +0.077                |
| TZM5243     | 13                                 | 9.5              | 0.25             | < 0.5                            | 9.9  | < 13                               | < 600                               | < +0.079                |
| TZM5244     | 14                                 | 9                | 0.25             | < 0.1                            | 10   | < 15                               | < 600                               | < +0.082                |
| TZM5245     | 15                                 | 8.5              | 0.25             | < 0.1                            | 11   | < 16                               | < 600                               | < +0.082                |
| TZM5246     | 16                                 | 7.8              | 0.25             | < 0.1                            | 12   | < 17                               | < 600                               | < +0.083                |
| TZM5247     | 17                                 | 7.4              | 0.25             | < 0.1                            | 13   | < 19                               | < 600                               | < +0.084                |
| TZM5248     | 18                                 | 7                | 0.25             | < 0.1                            | 14   | < 21                               | < 600                               | < +0.085                |
| TZM5249     | 19                                 | 6.6              | 0.25             | < 0.1                            | 14   | < 23                               | < 600                               | < +0.086                |
| TZM5250     | 20                                 | 6.2              | 0.25             | < 0.1                            | 15   | < 25                               | < 600                               | < +0.086                |
| TZM5251     | 22                                 | 5.6              | 0.25             | < 0.1                            | 17   | < 29                               | < 600                               | < +0.087                |
| TZM5252     | 24                                 | 5.2              | 0.25             | < 0.1                            | 18   | < 33                               | < 600                               | < +0.088                |
| TZM5253     | 25                                 | 5                | 0.25             | < 0.1                            | 19   | < 35                               | < 600                               | < +0.089                |
| TZM5254     | 27                                 | 4.6              | 0.25             | < 0.1                            | 21   | < 41                               | < 600                               | < +0.090                |
| TZM5255     | 28                                 | 4.5              | 0.25             | < 0.1                            | 21   | < 44                               | < 600                               | < +0.091                |
| TZM5256     | 30                                 | 4.2              | 0.25             | < 0.1                            | 23   | < 49                               | < 600                               | < +0.091                |
| TZM5257     | 33                                 | 3.8              | 0.25             | < 0.1                            | 25   | < 58                               | < 700                               | < +0.092                |
| TZM5258     | 36                                 | 3.4              | 0.25             | < 0.1                            | 27   | < 70                               | < 700                               | < +0.093                |
| TZM5259     | 39                                 | 3.2              | 0.25             | < 0.1                            | 30   | < 80                               | < 800                               | < +0.094                |
| TZM5260     | 43                                 | 3                | 0.25             | < 0.1                            | 33   | < 93                               | < 900                               | < +0.095                |
| TZM5261     | 47                                 | 2.7              | 0.25             | < 0.1                            | 36   | 105                                | < 1000                              | < +0.095                |
| TZM5262     | 51                                 | 2.5              | 0.25             | < 0.1                            | 39   | 125                                | < 1100                              | < +0.096                |
| TZM5263     | 56                                 | 2.2              | 0.25             | < 0.1                            | 43   | 150                                | < 1300                              | < +0.096                |
| TZM5264     | 60                                 | 2.1              | 0.25             | < 0.1                            | 46   | 170                                | < 1400                              | < +0.097                |
| TZM5265     | 62                                 | 2                | 0.25             | < 0.1                            | 47   | 185                                | < 1400                              | < +0.097                |
| TZM5266     | 68                                 | 1.8              | 0.25             | < 0.1                            | 52   | 230                                | < 1600                              | < +0.097                |
| TZM5267     | 75                                 | 1.7              | 0.25             | < 0.1                            | 56   | 270                                | < 1700                              | < +0.098                |

**Note**

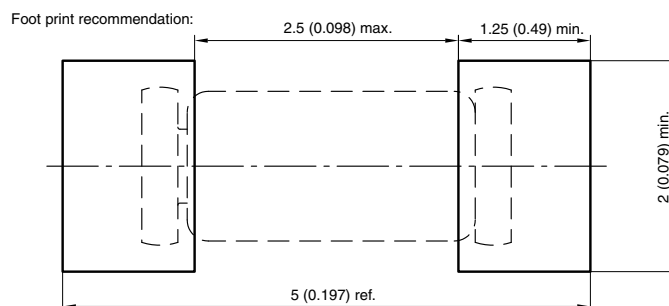
<sup>(1)</sup> Based on DC measurement at thermal equilibrium; case temperature maintained at  $30\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$



**PACKAGE DIMENSIONS** in millimeters (inches): **MiniMELF (SOD-80)**



\* The gap between plug and glass can be either on cathode or anode side



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