



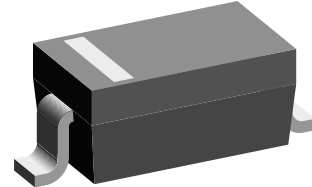
## Small Signal Zener Diodes

### Features

- Silicon planar power Zener diodes.
- Standard Zener voltage tolerance is  $\pm 5\%$  with a "B" suffix (e.g.: MMSZ5225B-V-G), suffix "C" is  $\pm 2\%$  tolerance
- AEC-Q101 qualified
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC



**RoHS**  
COMPLIANT  
**GREEN**  
(5-2008)\*\*



17431

### Mechanical Data

**Case:** SOD-123

**Weight:** approx. 10.3 mg

#### Packaging codes/options:

18/10K per 13 " reel (8 mm tape), 10K/box

08/3K per 7 " reel (8 mm tape), 15K/box

### Absolute Maximum Ratings

$T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

| Parameter                                   | Test condition                     | Symbol    | Value             | Unit |
|---|------------------------------------|-----------|-------------------|------|
| Zener current (see table "Characteristics") |                                    |           |                   |      |
| Power dissipation                           | $T_L = 75\text{ }^{\circ}\text{C}$ | $P_{tot}$ | 500 <sup>1)</sup> | mW   |

<sup>1)</sup> On FR - 4 or FR - 5 board with minimum recommended solder pad layout.

### Thermal Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

| Parameter                                  | Test condition | Symbol     | Value             | Unit               |
|--|----------------|------------|-------------------|--------------------|
| Thermal resistance junction to ambient air |                | $R_{thJA}$ | 340 <sup>1)</sup> | K/W                |
| Maximum junction temperature               |                | $T_j$      | 150               | $^{\circ}\text{C}$ |
| Storage temperature range                  |                | $T_{stg}$  | - 65 to + 175     | $^{\circ}\text{C}$ |

<sup>1)</sup> On FR - 4 or FR - 5 board with minimum recommended solder pad layout.

\*\* Please see document "Vishay Material Category Policy": [www.vishay.com/doc?99902](http://www.vishay.com/doc?99902)

# MMSZ5225-V-G to MMSZ5267-V-G



Vishay Semiconductors

## Electrical Characteristics

Maximum  $V_F = 0.9$  V, at  $I_F = 10$  mA

| Part number  | Marking code |       | Nominal Zener voltage <sup>2)</sup> | Test current | Maximum dynamic impedance <sup>1)</sup> |                                | Typical temperature of coefficient | Maximum reverse leakage current |       |
|--------------|--------------|-------|-------------------------------------|--------------|---|--------------------------------|------------------------------------|---------------------------------|-------|
|              | ± 2 %        | ± 5 % | $V_Z$ at $I_{ZT}$                   | $I_{ZT}$     | $Z_{ZT}$ at $I_{ZT}$                    | $Z_{ZK}$ at $I_{ZK} = 0.25$ mA | $\alpha_{VZ}$                      | $I_R$                           | $V_R$ |
|              |              |       | V                                   | mA           | $\Omega$                                | $\Omega$                       | %/°C                               | $\mu$ A                         | V     |
| MMSZ5225-V-G | C.0          | C0    | 3                                   | 20           | 30                                      | 1600                           | - 0.075                            | 50                              | 1     |
| MMSZ5226-V-G | D.6          | D6    | 3.3                                 | 20           | 28                                      | 1600                           | - 0.070                            | 25                              | 1     |
| MMSZ5227-V-G | D.7          | D7    | 3.6                                 | 20           | 24                                      | 1700                           | - 0.065                            | 15                              | 1     |
| MMSZ5228-V-G | D.8          | D8    | 3.9                                 | 20           | 23                                      | 1900                           | - 0.060                            | 10                              | 1     |
| MMSZ5229-V-G | D.9          | D9    | 4.3                                 | 20           | 22                                      | 2000                           | - 0.055                            | 5                               | 1     |
| MMSZ5230-V-G | D.0          | D0    | 4.7                                 | 20           | 19                                      | 1900                           | ± 0.030                            | 5                               | 2     |
| MMSZ5231-V-G | E.6          | E6    | 5.1                                 | 20           | 17                                      | 1600                           | ± 0.030                            | 5                               | 2     |
| MMSZ5232-V-G | E.7          | E7    | 5.6                                 | 20           | 11                                      | 1600                           | + 0.038                            | 5                               | 3     |
| MMSZ5233-V-G | E.8          | E8    | 6                                   | 20           | 7                                       | 1600                           | + 0.038                            | 5                               | 3.5   |
| MMSZ5234-V-G | E.9          | E9    | 6.2                                 | 20           | 7                                       | 1000                           | + 0.045                            | 5                               | 4     |
| MMSZ5235-V-G | E.0          | E0    | 6.8                                 | 20           | 5                                       | 750                            | + 0.050                            | 3                               | 5     |
| MMSZ5236-V-G | F.6          | F6    | 7.5                                 | 20           | 6                                       | 500                            | + 0.058                            | 3                               | 6     |
| MMSZ5237-V-G | F.7          | F7    | 8.2                                 | 20           | 8                                       | 500                            | + 0.062                            | 3                               | 6.5   |
| MMSZ5238-V-G | F.8          | F8    | 8.7                                 | 20           | 8                                       | 600                            | + 0.065                            | 3                               | 6.5   |
| MMSZ5239-V-G | F.9          | F9    | 9.1                                 | 20           | 10                                      | 600                            | + 0.068                            | 3                               | 7     |
| MMSZ5240-V-G | F.0          | F0    | 10                                  | 20           | 17                                      | 600                            | + 0.075                            | 3                               | 8     |
| MMSZ5241-V-G | H.6          | H6    | 11                                  | 20           | 22                                      | 600                            | + 0.076                            | 2                               | 8.4   |
| MMSZ5242-V-G | H.7          | H7    | 12                                  | 20           | 30                                      | 600                            | + 0.077                            | 1                               | 9.1   |
| MMSZ5243-V-G | H.8          | H8    | 13                                  | 9.5          | 13                                      | 600                            | + 0.079                            | 0.5                             | 9.9   |
| MMSZ5244-V-G | H.9          | H9    | 14                                  | 9            | 15                                      | 600                            | + 0.082                            | 0.1                             | 10    |
| MMSZ5245-V-G | H.0          | H0    | 15                                  | 8.5          | 16                                      | 600                            | + 0.082                            | 0.1                             | 11    |
| MMSZ5246-V-G | J.6          | J6    | 16                                  | 7.8          | 17                                      | 600                            | + 0.083                            | 0.1                             | 12    |
| MMSZ5247-V-G | J.7          | J7    | 17                                  | 7.4          | 19                                      | 600                            | + 0.084                            | 0.1                             | 13    |
| MMSZ5248-V-G | J.8          | J8    | 18                                  | 7            | 21                                      | 600                            | + 0.085                            | 0.1                             | 14    |
| MMSZ5249-V-G | J.9          | J9    | 19                                  | 6.6          | 23                                      | 600                            | + 0.086                            | 0.1                             | 14    |
| MMSZ5250-V-G | J.0          | J0    | 20                                  | 6.2          | 25                                      | 600                            | + 0.086                            | 0.1                             | 15    |
| MMSZ5251-V-G | K.6          | K6    | 22                                  | 5.6          | 29                                      | 600                            | + 0.087                            | 0.1                             | 17    |
| MMSZ5252-V-G | K.7          | K7    | 24                                  | 5.2          | 33                                      | 600                            | + 0.087                            | 0.1                             | 18    |
| MMSZ5253-V-G | K.8          | K8    | 25                                  | 5            | 35                                      | 600                            | + 0.089                            | 0.1                             | 19    |
| MMSZ5254-V-G | K.9          | K9    | 27                                  | 4.6          | 41                                      | 600                            | + 0.090                            | 0.1                             | 21    |
| MMSZ5255-V-G | K.0          | K0    | 28                                  | 4.5          | 44                                      | 600                            | + 0.091                            | 0.1                             | 21    |
| MMSZ5256-V-G | M.6          | M6    | 30                                  | 4.2          | 49                                      | 600                            | + 0.091                            | 0.1                             | 23    |
| MMSZ5257-V-G | M.7          | M7    | 33                                  | 3.8          | 58                                      | 700                            | + 0.092                            | 0.1                             | 25    |
| MMSZ5258-V-G | M.8          | M8    | 36                                  | 3.4          | 70                                      | 700                            | + 0.093                            | 0.1                             | 27    |
| MMSZ5259-V-G | M.9          | M9    | 39                                  | 3.2          | 80                                      | 800                            | + 0.094                            | 0.1                             | 30    |
| MMSZ5260-V-G | M.0          | M0    | 43                                  | 3            | 93                                      | 900                            | + 0.095                            | 0.1                             | 33    |
| MMSZ5261-V-G | N.6          | N6    | 47                                  | 2.7          | 105                                     | 1000                           | + 0.095                            | 0.1                             | 36    |
| MMSZ5262-V-G | N.7          | N7    | 51                                  | 2.5          | 125                                     | 1100                           | + 0.096                            | 0.1                             | 39    |
| MMSZ5263-V-G | N.8          | N8    | 56                                  | 2.2          | 150                                     | 1300                           | + 0.096                            | 0.1                             | 43    |
| MMSZ5264-V-G | N.9          | N9    | 60                                  | 2.1          | 170                                     | 1400                           | + 0.097                            | 0.1                             | 46    |
| MMSZ5265-V-G | N.0          | N0    | 62                                  | 2            | 185                                     | 1400                           | + 0.097                            | 0.1                             | 47    |
| MMSZ5266-V-G | P.6          | P6    | 68                                  | 1.8          | 230                                     | 1600                           | + 0.097                            | 0.1                             | 52    |
| MMSZ5267-V-G | P.7          | P7    | 75                                  | 1.7          | 270                                     | 1700                           | + 0.098                            | 0.1                             | 56    |

<sup>1)</sup> The Zener Impedance is derived from the 1 kHz 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.

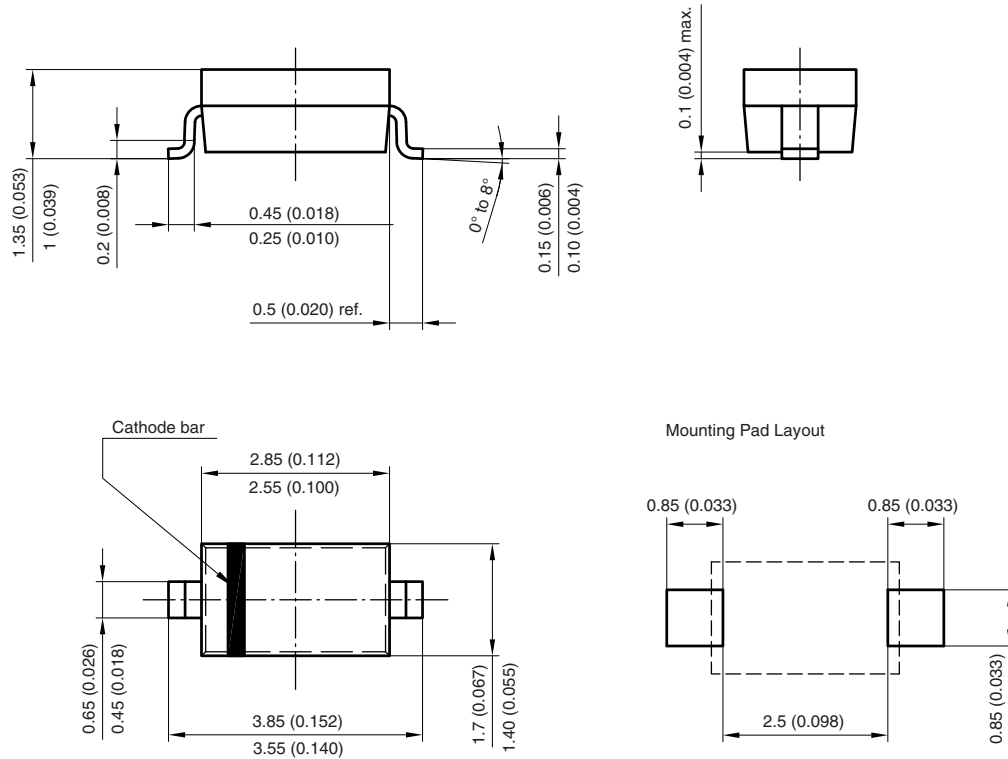
<sup>2)</sup> Measured with device junction in thermal equilibrium.



# MMSZ5225-V-G to MMSZ5267-V-G

Vishay Semiconductors

## Package Dimensions in millimeters (inches): SOD-123



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