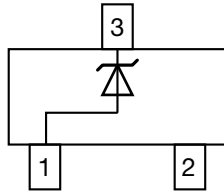
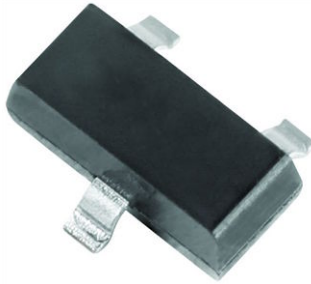


## Small Signal Zener Diodes


**DESIGN SUPPORT TOOLS**
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**3D**  
Models  
Available

| PRIMARY CHARACTERISTICS |                     |      |
|-------------------------|---------------------|------|
| PARAMETER               | VALUE               | UNIT |
| $V_Z$ range nom.        | 3 to 75             | V    |
| Test current $I_{ZT}$   | 1.7 to 20           | mA   |
| $V_Z$ specification     | Thermal equilibrium |      |
| Circuit configuration   | Single              |      |

**FEATURES**

- Silicon planar power Zener diodes
- Standard Zener voltage tolerance is  $\pm 5\%$  with a "B" suffix (e.g.: MMBZ5225B), suffix "C" is  $\pm 2\%$  tolerance.
- High temperature soldering guaranteed: 260 °C/4 x 10 s at terminals
- AEC-Q101 qualified available
- ESD capability according to AEC-Q101: Human body model > 8 kV Machine model > 800 V
- Base P/N-E3 - RoHS-compliant, commercial grade
- Base P/N-HE3 - RoHS-compliant, AEC-Q101 qualified
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

 AUTOMOTIVE  
GRADE  
Available

**RoHS**  
COMPLIANT

| ORDERING INFORMATION    |                                      |                                |                        |
|-------------------------|--------------------------------------|--------------------------------|------------------------|
| DEVICE NAME             | ORDERING CODE                        | TAPED UNITS PER REEL           | MINIMUM ORDER QUANTITY |
| MMBZ5225 to<br>MMBZ5267 | MMBZ5225B-E3-08 to MMBZ5267B-E3-08   | 3000 (8 mm tape on 7" reel)    | 15 000/box             |
|                         | MMBZ5225C-E3-08 to MMBZ5267C-E3-08   |                                |                        |
|                         | MMBZ5225B-HE3-08 to MMBZ5267B-HE3-08 |                                |                        |
|                         | MMBZ5225C-HE3-08 to MMBZ5267C-HE3-08 |                                |                        |
|                         | MMBZ5225B-E3-18 to MMBZ5267B-E3-18   | 10 000 (8 mm tape on 13" reel) | 10 000/box             |
|                         | MMBZ5225C-E3-18 to MMBZ5267C-E3-18   |                                |                        |
|                         | MMBZ5225B-HE3-18 to MMBZ5267B-HE3-18 |                                |                        |
|                         | MMBZ5225C-HE3-18 to MMBZ5267C-HE3-18 |                                |                        |

| PACKAGE      |        |   |                                      |                          |
|--------------|--------|---|--------------------------------------|--------------------------|
| PACKAGE NAME | WEIGHT | MOLDING COMPOUND<br>FLAMMABILITY RATING | MOISTURE SENSITIVITY<br>LEVEL        | SOLDERING CONDITIONS     |
| SOT-23       | 8.8 mg | UL 94 V-0                               | MSL level 1<br>(according J-STD-020) | 260 °C/10 s at terminals |

| ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ °C}$ , unless otherwise specified) |   |            |             |      |
|---|---|------------|-------------|------|
| PARAMETER   | TEST CONDITION                                      | SYMBOL     | VALUE       | UNIT |
| Power dissipation   | On FR - 5 board using recommended solder pad layout | $P_{tot}$  | 225         | mW   |
|   | On alumina substrate                                | $P_{tot}$  | 300         | mW   |
| Zener current   | See table "Electrical Characteristics"              |            |             |      |
| Thermal resistance,<br>junction to ambient air                                    | On FR - 5 board using recommended solder pad layout | $R_{thJA}$ | 556         | K/W  |
| Junction temperature  |   | $T_j$      | 150         | °C   |
| Storage temperature range   |   | $T_{stg}$  | -65 to +150 | °C   |
| Operating temperature range   |   | $T_{op}$   | -55 to +150 | °C   |



ELECTRICAL CHARACTERISTICS (T\_amb = 25 °C, unless otherwise specified)

Table with 10 columns: PART NUMBER, MARKING CODE, ZENER VOLTAGE RANGE (1), TEST CURRENT (IZT1, IZT2), REVERSE LEAKAGE CURRENT (IR at VR), DYNAMIC RESISTANCE (2) (ZZ at IZT1, ZZK at IZT2), TEMPERATURE COEFFICIENT (alphaVZ). Rows list part numbers from MMBZ5225 to MMBZ5267 with their respective electrical parameters.

Notes

- Maximum VF = 0.9 V, at IF = 10 mA
(1) Measured at thermal equilibrium
(2) 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 (IZT1 or IZT2) is superimposed on IZT1 or IZT2. Zener Impedance is measured at two points to insure a sharp knee on the breakdown curve and to eliminate unstable units

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

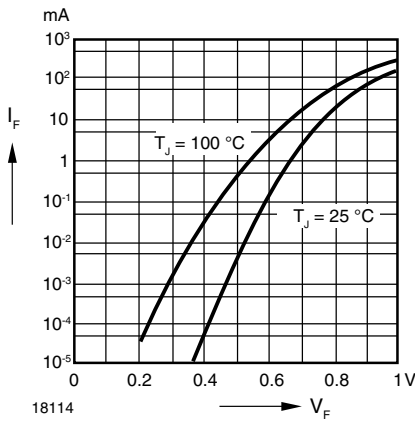


Fig. 1 - Forward Characteristics

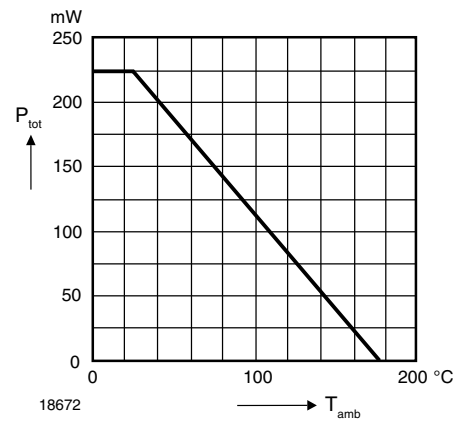
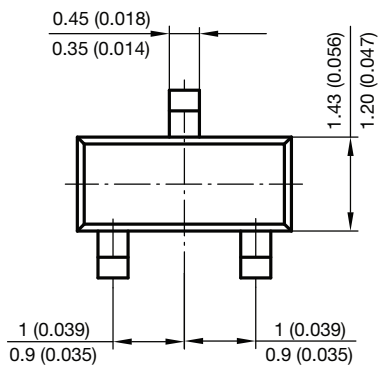
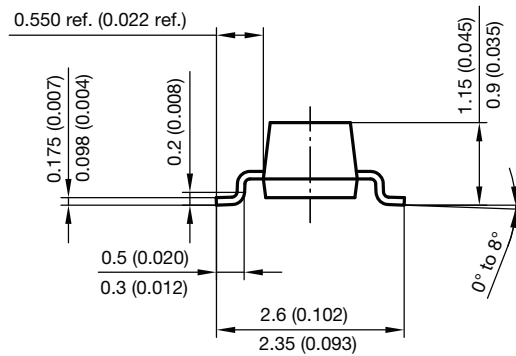
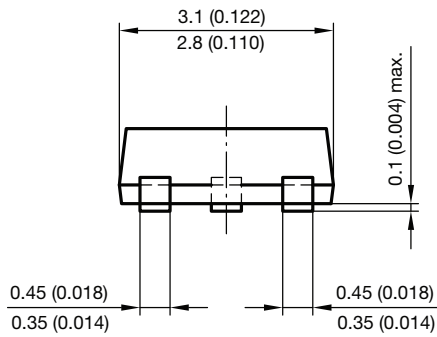
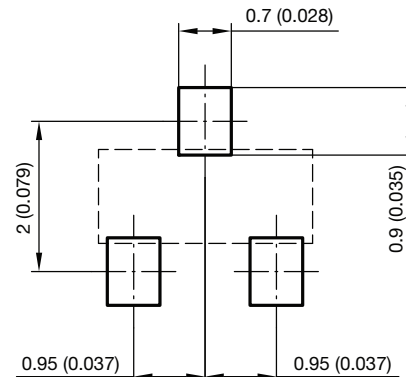


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

**PACKAGE DIMENSIONS** in millimeters (inches): **SOT-23**



Foot print recommendation:





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