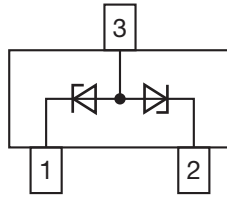
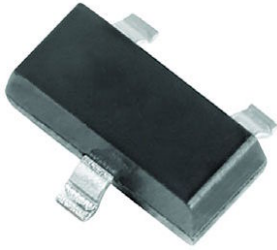


## Small Signal Zener Diodes, Dual


**DESIGN SUPPORT TOOLS**
[click logo to get started](#)
**3D**  
Models  
Available

| PRIMARY CHARACTERISTICS |                   |      |
|-------------------------|-------------------|------|
| PARAMETER               | VALUE             | UNIT |
| $V_Z$ range nom.        | 27                | V    |
| Test current $I_{ZT}$   | 1                 | mA   |
| $V_Z$ specification     | Pulse current     |      |
| Circuit configuration   | Dual common anode |      |

**FEATURES**

- Dual silicon planar Zener diodes with common anode configurations
- Dual package provides for bidirectional or separate unidirectional configurations
- The dual configurations protect two separate lines with only one device
- Peak power: 40 W at 1 ms (bidirectional)
- For bidirectional operation, circuit connected to pins 1 and 2. For unidirectional operation, circuit connected to pins 1 and 3 or pins 2 and 3
- AEC-Q101 qualified available (part number on request)
- ESD capability according to AEC-Q101:  
Human body model > 8 kV  
Machine model > 800 V
- Base P/N-G3 - green, commercial grade
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
**GREEN**  
(5-2008)

| ORDERING INFORMATION |                 |                                |                        |
|----------------------|-----------------|--------------------------------|------------------------|
| DEVICE NAME          | ORDERING CODE   | TAPED UNITS PER REEL           | MINIMUM ORDER QUANTITY |
| MMBZ27VDA-G          | MMBZ27VDA-G3-08 | 3000 (8 mm tape on 7" reel)    | 15 000                 |
|                      | MMBZ27VDA-G3-18 | 10 000 (8 mm tape on 13" reel) | 10 000                 |

| PACKAGE      |        |                                      |                                      |                          |
|--------------|--------|--------------------------------------|--------------------------------------|--------------------------|
| PACKAGE NAME | WEIGHT | MOLDING COMPOUND FLAMMABILITY RATING | MOISTURE SENSITIVITY LEVEL           | SOLDERING CONDITIONS     |
| SOT-23       | 8.1 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 |
| Peak power dissipation <sup>(1)</sup>   |  | $P_{PK}$       | 40          | W    |
| Power dissipation on FR-5 board <sup>(2)</sup>                                    | $T_{amb} = 25\text{ °C}$ ,<br>derate above 25 °C | $P_{tot}$      | 225         | mW   |
|   |  |                | 1.8         | mW/K |
| Power dissipation on alumina substrate <sup>(3)</sup>                             | $T_{amb} = 25\text{ °C}$ ,<br>derate above 25 °C | $P_{tot}$      | 300         | mW   |
|   |  |                | 2.4         | mW/K |
| Thermal resistance junction to ambient air  |  | $R_{thJA}$     | 556         | K/W  |
| Operating temperature range   |  | $T_{op}$       | -55 to +150 | °C   |
| Storage temperature range   |  | $T_j, T_{stg}$ | -55 to +150 | °C   |

**Notes**

- (1) Non repetitive current pulse per figure 2 and derate above  $T_{amb} = 25\text{ °C}$  per figure 3
- (2) FR-5 = 1" x 0.75" x 0.62"
- (3) Alumina = 0.4" x 0.3" x 0.024", 99.5 % alumina.

| ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified) |              |                                    |      |       |              |                              |                              |                            |  |                              |                      |     |
|---|--------------|------------------------------------|------|-------|--------------|------------------------------|------------------------------|----------------------------|--|------------------------------|----------------------|-----|
| PART NUMBER   | MARKING CODE | ZENER VOLTAGE RANGE <sup>(1)</sup> |      |       | TEST CURRENT | WORKING PEAK REVERSE VOLTAGE | MAX. REVERSE LEAKAGE CURRENT | MAX. REVERSE SURGE CURRENT | MAX. REVERSE VOLTAGE (CLAMPING VOLTAGE) <sup>(2)</sup> | MAX. TEMPERATURE COEFFICIENT | MAX. FORWARD VOLTAGE |     |
|   |              | $V_Z$ at $I_{ZT1}$                 |      |       | $I_{ZT1}$    | $V_{RWM}$                    | $I_R$ at $V_{RWM}$           | $I_{PP}$                   | $V_C$ at $I_{RSM}$                                     | $V_Z$                        | $V_F$ at $I_F$       |     |
|   |              | MIN.                               | NOM. | MAX.  | mA           | V                            | nA                           | A                          | V  | mV/ $^{\circ}\text{C}$       | V                    | mA  |
| MMBZ27VDA-G   | TA8          | 25.65                              | 27   | 28.35 | 1            | 22                           | 80                           | 1                          | 38   | 30                           | 1.1                  | 200 |

**Notes**

- (1)  $V_Z$  measured at pulse test current  $I_{ZT1}$  at an ambient temperature of  $25\text{ }^{\circ}\text{C}$   
 (2) Surge current waveform per figure 2 and derate per figure 3

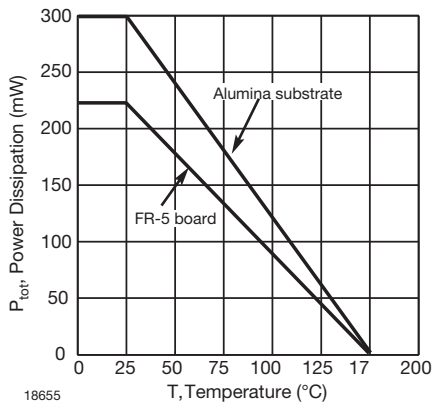
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Steady State Power Derating Curve

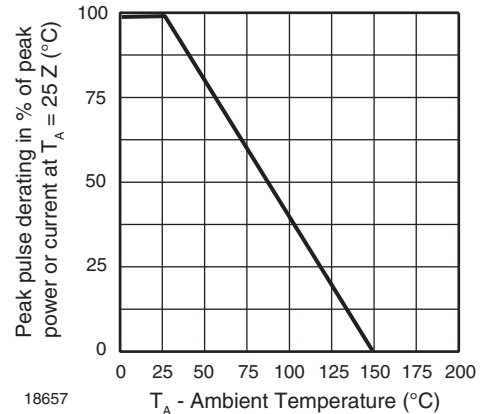


Fig. 3 - Pulse Derating Curve

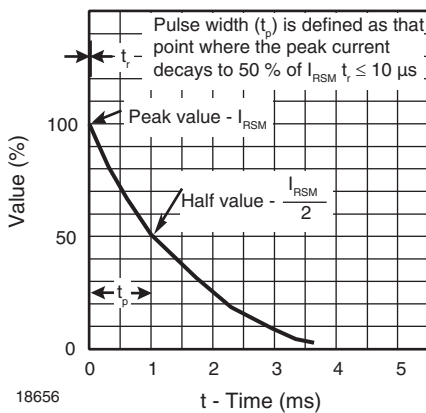
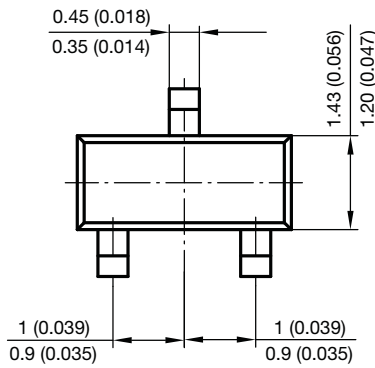
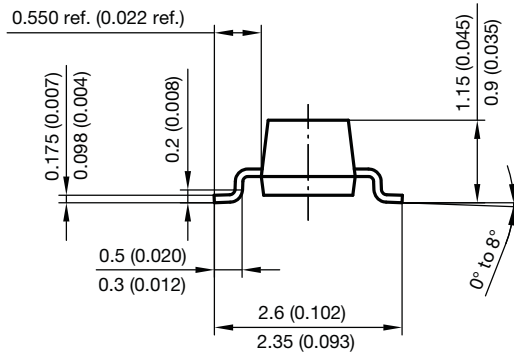
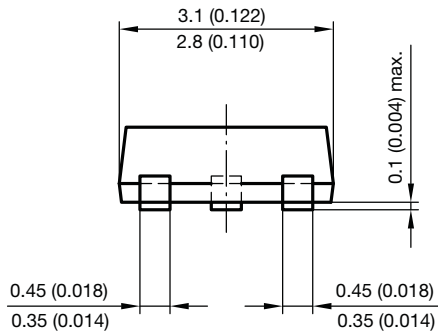


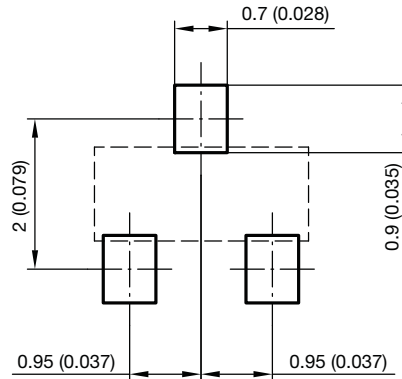
Fig. 2 - Pulse Waveform



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



Foot print recommendation:



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17418



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