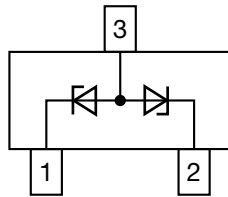


Small Signal Zener Diodes, Dual



LINKS TO ADDITIONAL RESOURCES



3D Models

| PRIMARY CHARACTERISTICS | | |
|-------------------------|---------------------------------|------|
| PARAMETER | VALUE | UNIT |
| V_Z range nom. | 27 | V |
| Test current I_{ZT} | 1 | mA |
| V_{BR} | 27 | V |
| V_{WM} | 22 | V |
| P_{PPM} | 40 | W |
| T_J max. | 150 | °C |
| V_Z specification | Pulse current | |
| Circuit configuration | Common anode | |
| Polarity | Uni-directional, bi-directional | |

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
- 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



| ORDERING INFORMATION | | | |
|----------------------|------------------|--------------------------------|------------------------|
| DEVICE NAME | ORDERING CODE | TAPED UNITS PER REEL | MINIMUM ORDER QUANTITY |
| MMBZ27VDA | MMBZ27VDA-E3-08 | 3000 (8 mm tape on 7" reel) | 15 000 |
| | MMBZ27VDA-HE3-08 | | |
| | MMBZ27VDA-E3-18 | 10 000 (8 mm tape on 13" reel) | 10 000 |
| | MMBZ27VDA-HE3-18 | | |

| PACKAGE | | | | |
|--------------|--------|--------------------------------------|-----------------------------------|--------------------------|
| PACKAGE NAME | WEIGHT | MOLDING COMPOUND FLAMMABILITY RATING | MOISTURE SENSITIVITY LEVEL | SOLDERING CONDITIONS |
| SOT-23 | 8.8 mg | UL 94 V-0 | MSL level 1 (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 ⁽¹⁾ | | P_{PK} | 40 | W |
| Power dissipation on FR-5 board ⁽²⁾ | $T_{amb} = 25\text{ °C}$, derate above 25 °C | P_{tot} | 225 | mW |
| | | | 1.8 | mW/K |
| Power dissipation on alumina substrate ⁽³⁾ | $T_{amb} = 25\text{ °C}$, 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 °C, unless otherwise specified) | | | | | | | | | | | | |
|---|--------------|------------------------------------|------|-------|------------------|------------------------------|------------------------------------|----------------------------|--|------------------------------|----------------------------------|-----|
| PART NUMBER | MARKING CODE | ZENER VOLTAGE RANGE ⁽¹⁾ | | | TEST CURRENT | WORKING PEAK REVERSE VOLTAGE | MAX. REVERSE LEAKAGE CURRENT | MAX. REVERSE SURGE CURRENT | MAX. REVERSE VOLTAGE (CLAMPING VOLTAGE) ⁽²⁾ | 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 | |
| | | V | | | mA | V | nA | A | V | mV/°C | V | mA |
| | | MIN. | NOM. | MAX. | | | | | | | | |
| MMBZ27VDA | TA7 | 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 °C
- (2) Surge current waveform per figure 2 and derate per figure 3

TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

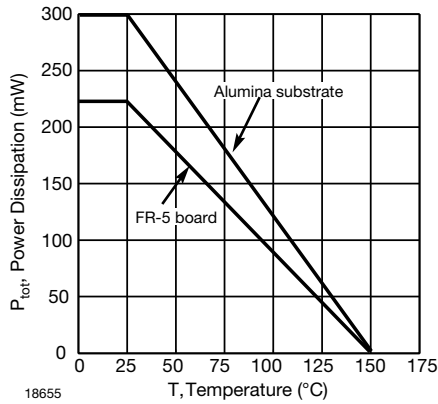


Fig. 1 - Steady State Power Derating Curve

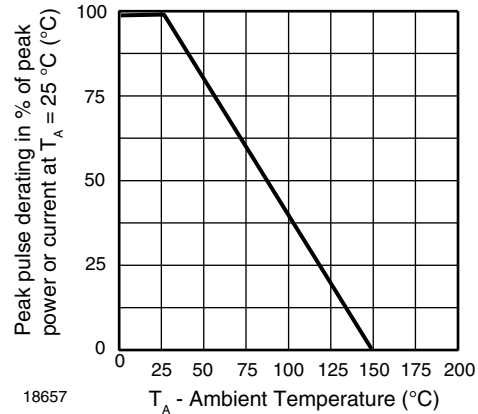


Fig. 3 - Pulse Derating Curve

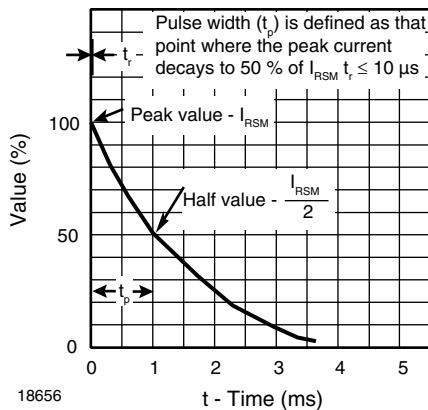
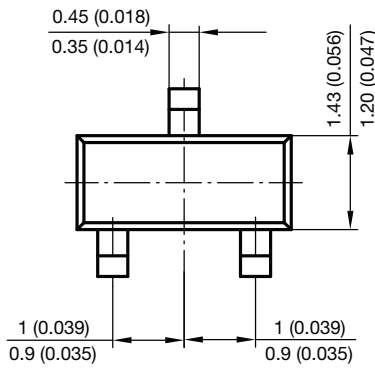
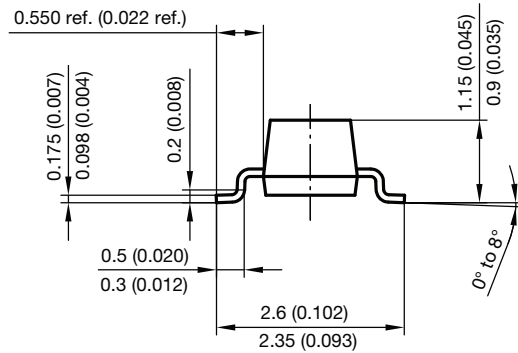
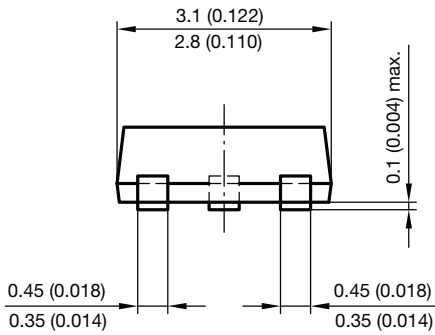


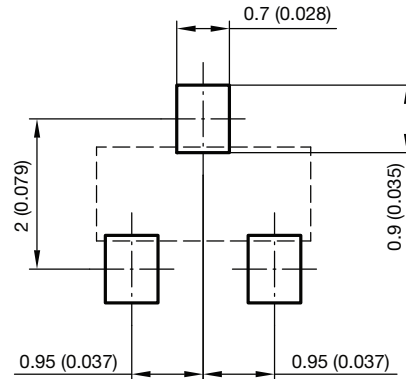
Fig. 2 - Pulse Waveform



PACKAGE DIMENSIONS in millimeters (inches): SOT-23



Foot print recommendation:



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17418



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