

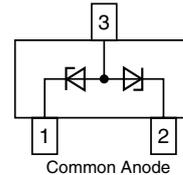
## Small Signal Zener Diodes, Dual

### 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
- Lead (Pb)-free component
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



MMBZ27VDA



20048

### Marking:

MMBZ27VDA-V = TA7

### Mechanical Data

**Case:** SOT-23 Plastic case

**Weight:** approx. 8.8 mg

**Terminals:** Solderable per MIL-STD-750, method 2026

### Packaging Codes/Options:

GS18/ 10 k per 13 " reel (8 mm tape), 10 k/box

GS08/ 3 k per 7 " reel (8 mm tape), 15 k/box

### Absolute Maximum Ratings

$T_{amb} = 25\text{ }^{\circ}\text{C}$ , 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>	$T_{amb} = 25\text{ }^{\circ}\text{C}$	$P_{tot}$	225	mW
	Derate above 25 °C		1.8	mW/°C
Power dissipation on Alumina Substrate <sup>3)</sup>	$T_{amb} = 25\text{ }^{\circ}\text{C}$	$P_{tot}$	300	mW
	Derate above 25 °C		2.4	mW/°C

<sup>1)</sup> Nonrepetitive current pulse per Figure 2 and derate above  $T_{amb} = 25\text{ }^{\circ}\text{C}$  per Figure 3.

<sup>2)</sup> FR-5 = 1.0 x 0.75 x 0.62 in.

<sup>3)</sup> Alumina = 0.4 x 0.3 x 0.024 in., 99.5 % alumina.

### Thermal Characteristics

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

Parameter	Test condition	Symbol	Value	Unit
Thermal resistance junction to ambient air		$R_{thJA}$	556	°C/W
Operating and storage temperature range		$T_j, T_{stg}$	- 55 to + 150	°C

## Electrical Characteristics

Partnumber	Breakdown Voltage <sup>1)</sup>		Test Current	Working Peak Reverse Voltage	Max. Reverse Leakage Current	Max. Reverse Surge Current	Max. Reverse Voltage (Clamping Voltage)	Max. Temperature Coefficient	Max. Forward Voltage	
	V <sub>BR</sub> at I <sub>T</sub>	I <sub>T</sub>							V <sub>RWM</sub>	I <sub>R</sub>
	V		mA	V	nA	A	V	mV/°C	V	mA
	min	max								
MMBZ27VDA-V	25.65	28.35	1.0	22.0	80	1.0	38.0	30	1.1	200

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1) V<sub>BR</sub> measured at pulse test current I<sub>T</sub> at an ambient temperature of 25 °C

2) Surge current waveform per Figure 2 and derate per Figure 3

## Typical Characteristics

T<sub>amb</sub> = 25 °C, unless otherwise specified

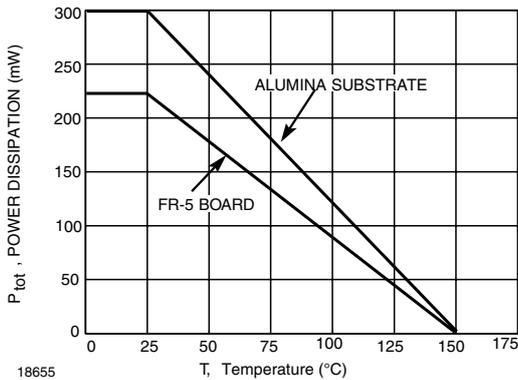


Figure 1. Steady State Power Derating Curve

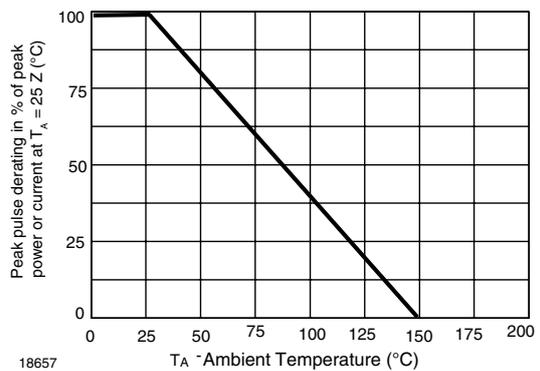


Figure 3. Pulse Derating Curve

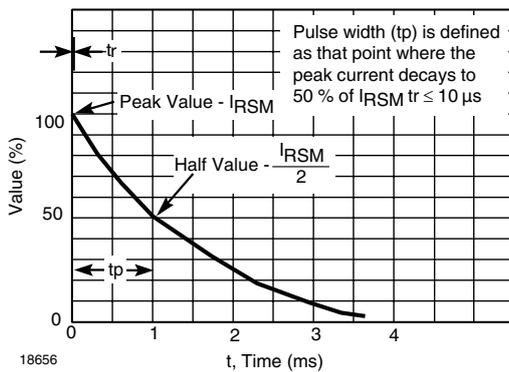
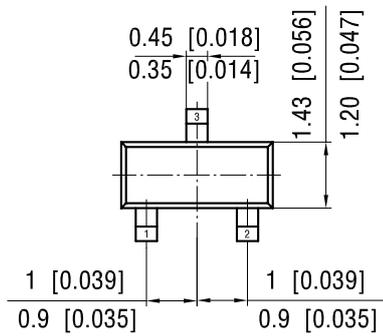
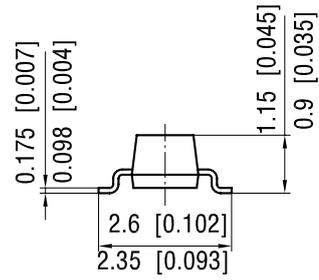
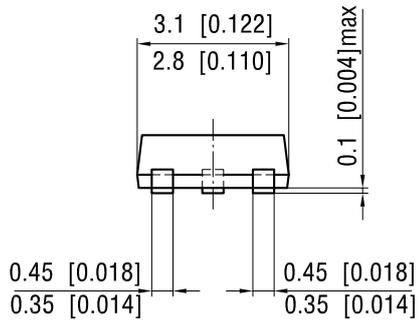
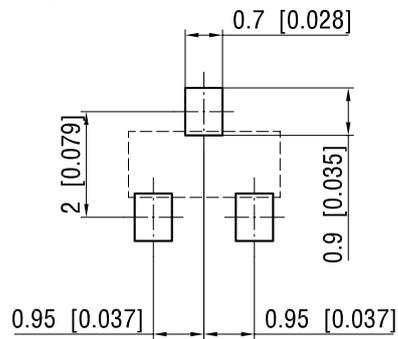


Figure 2. Pulse Waveform

## Package Dimensions in mm (Inches)



foot print recommendation:



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### Ozone Depleting Substances Policy Statement

It is the policy of Vishay Semiconductor GmbH to

1. Meet all present and future national and international statutory requirements.
2. Regularly and continuously improve the performance of our products, processes, distribution and operating systems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

Vishay Semiconductor GmbH has been able to use its policy of continuous improvements to eliminate the use of ODSs listed in the following documents.

1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively
2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA
3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

Vishay Semiconductor GmbH can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.

We reserve the right to make changes to improve technical design  
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