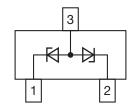


## Vishay Semiconductors

# **Small Signal Zener Diodes, Dual**





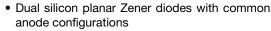
### **DESIGN SUPPORT TOOLS**

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DDIMARY CHARACTERISTICS							
PRIMARY CHARACTERISTICS							
PARAMETER	VALUE	UNIT					
V <sub>Z</sub> range nom.	27	V					
Test current I <sub>ZT</sub>	1	mA					
V <sub>Z</sub> specification	Pulse current						
Circuit configuration	Dual common anode						

### **FEATURES**





- Dual package provides for bidirectional or separate unidirectional configurations
- The dual configurations protect two separate lines with only one device
- RoHS COMPLIANT
- Peak power: 40 W at 1 ms (bidirectional)
- HALOGEN FREE
- 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
- **GREEN** (5-2008)
- 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 <a href="https://www.vishay.com/doc?99912"><u>www.vishay.com/doc?99912</u></a>

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 (according J-STD-020)	260 °C/10 s at terminals				

<b>ABSOLUTE MAXIMUM RATINGS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)									
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT					
Peak power dissipation (1)		P <sub>PK</sub>	40	W					
Power dissipation on FR-5 board (2)	$T_{amb} = 25  ^{\circ}C$	В	225	mW					
	derate above 25 °C	P <sub>tot</sub>	1.8	mW/K					
Power dissipation on alumina substrate (3)	T <sub>amb</sub> = 25 °C,	р	300	mW					
Power dissipation on alumina substrate	derate above 25 °C	P <sub>tot</sub>	2.4	mW/K					
Thermal resistance junction to ambient air		R <sub>thJA</sub>	556	K/W					
Operating temperature range		T <sub>op</sub>	-55 to +150	°C					
Storage temperature range		T <sub>j</sub> , T <sub>stg</sub>	-55 to +150	°C					

#### Notes

- $^{(1)}$  Non repetitive current pulse per figure 2 and derate above  $T_{amb}$  = 25  $^{\circ}$ 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.



# Vishay Semiconductors

<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)												
PART NUMBER MARKING CODE	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 <sub>Z</sub> at I <sub>ZT1</sub>		I <sub>ZT1</sub>	V <sub>RWM</sub>	I <sub>R</sub> at V <sub>RWM</sub>	I <sub>PP</sub>	V <sub>C</sub> at I <sub>RSM</sub>	$V_Z$	V <sub>F</sub> at I <sub>F</sub>			
		V		mA	٧	n <b>A</b>	Α	V	mV/°C	٧	mA	
		MIN.	NOM.	MAX.								
MMBZ27VDA-G	TA8	25.65	27	28.35	1	22	80	1	38	30	1.1	200

#### **Notes**

## TYPICAL CHARACTERISTICS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

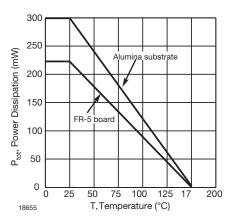


Fig. 1 - Steady State Power Derating Curve

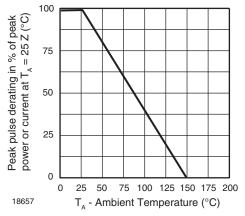


Fig. 3 - Pulse Derating Curve

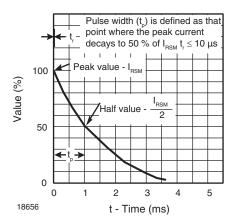


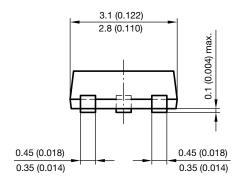
Fig. 2 - Pulse Waveform

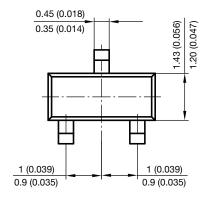
 $<sup>^{(1)}</sup>$  V<sub>Z</sub> measured at pulse test current I<sub>ZT1</sub> at an ambient temperature of 25  $^{\circ}$ C

<sup>(2)</sup> Surge current waveform per figure 2 and derate per figure 3

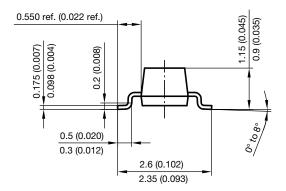
# Vishay Semiconductors

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

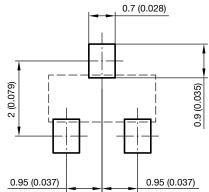




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#### Foot print recommendation:





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