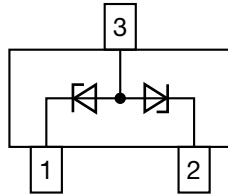


## Small Signal Zener Diodes, Dual



### 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](http://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 <sup>(1)</sup>		$P_{PK}$	40	W
Power dissipation on FR-5 board <sup>(2)</sup>	$T_{amb} = 25\text{ °C}$ , derate above 25 °C	$P_{tot}$	225	mW
			1.8	mW/K
Power dissipation on alumina substrate <sup>(3)</sup>	$T_{amb} = 25\text{ °C}$ , 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 <sub>amb</sub> = 25 °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 <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 <sub>Z</sub>	V <sub>F</sub> at I <sub>F</sub>	
		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<sub>Z</sub> measured at pulse test current I<sub>ZT1</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)

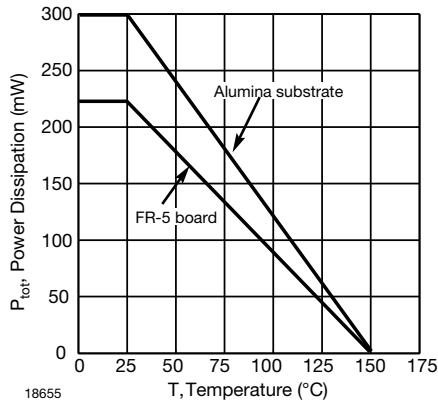


Fig. 1 - Steady State Power Derating Curve

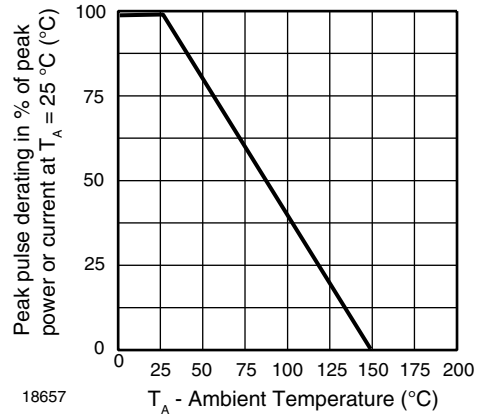


Fig. 3 - Pulse Derating Curve

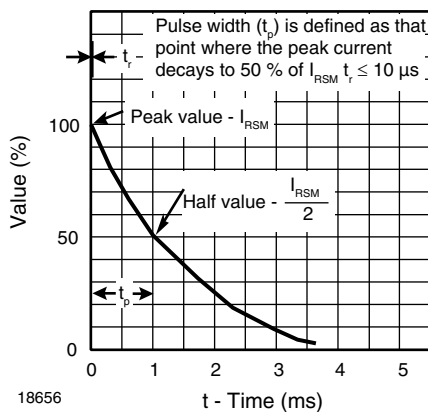
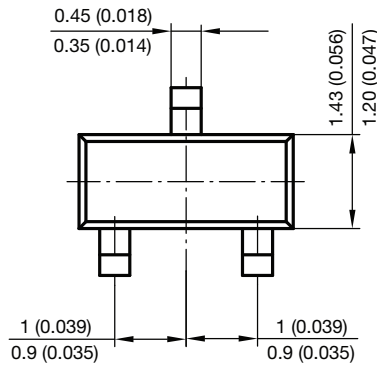
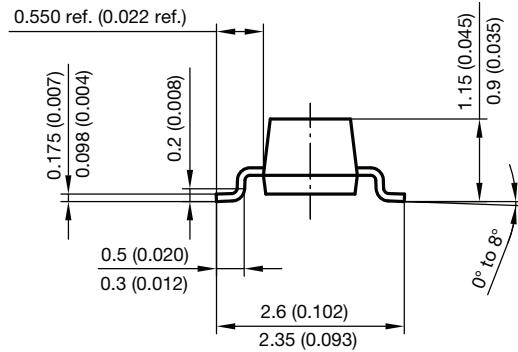
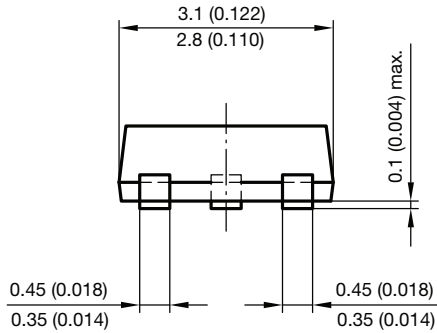


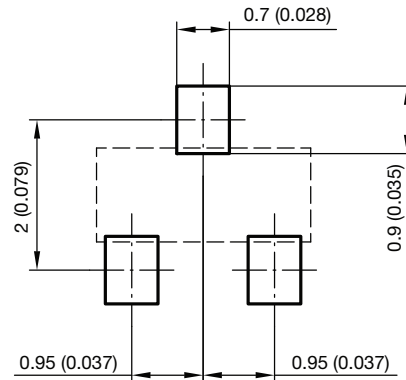
Fig. 2 - Pulse Waveform



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



Foot print recommendation:





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