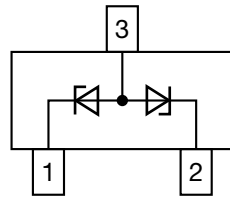
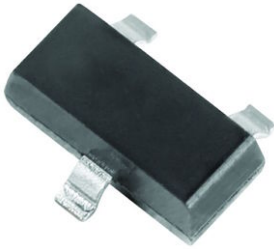


Small Signal Zener Diodes, Dual


DESIGN SUPPORT TOOLS
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3D
Models
Available

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

 AUTOMOTIVE
GRADE
Available

RoHS
COMPLIANT

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 ($T_{amb} = 25\text{ }^{\circ}\text{C}$, 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/ $^{\circ}\text{C}$	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 $25\text{ }^{\circ}\text{C}$
 (2) Surge current waveform per figure 2 and derate per figure 3

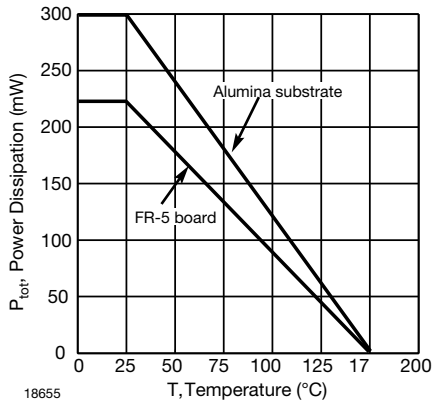
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Steady State Power Derating Curve

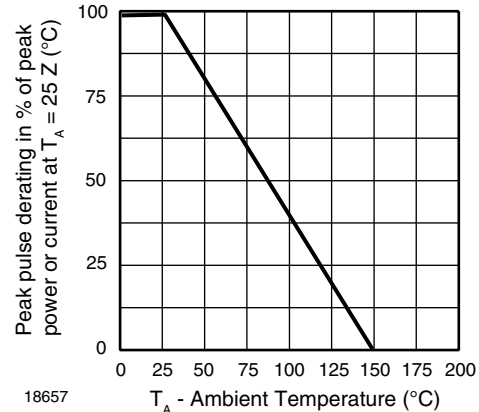


Fig. 3 - Pulse Derating Curve

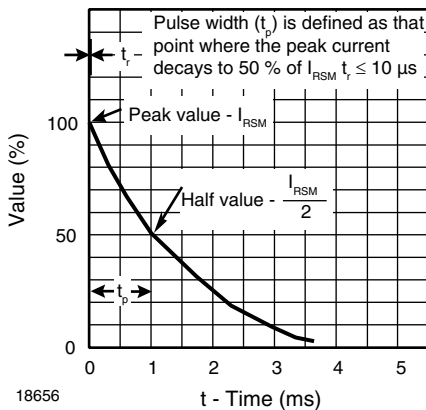
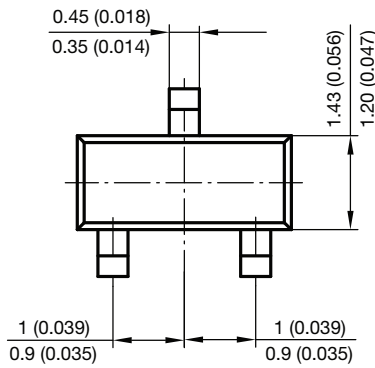
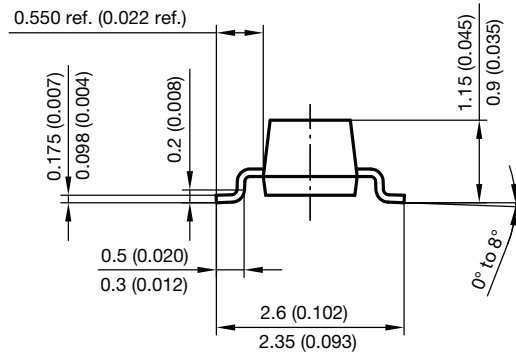
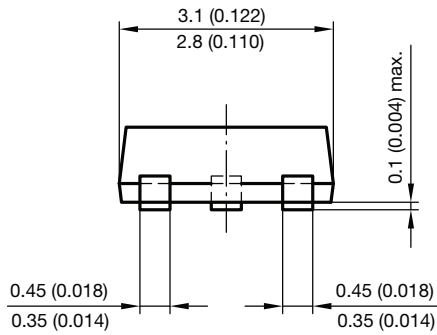


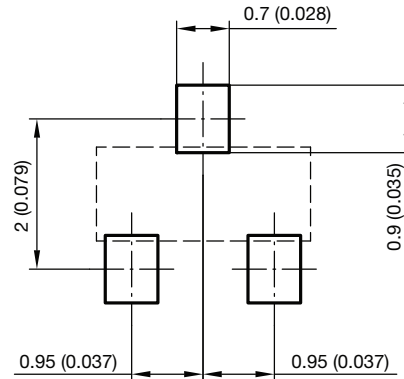
Fig. 2 - Pulse Waveform



PACKAGE DIMENSIONS in millimeters (inches): SOT-23



Foot print recommendation:



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Rev. 8 - Date: 23. Sep. 2009
17418



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