Excellent Integrated System Limited

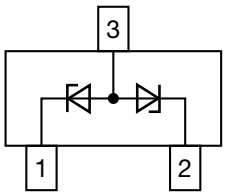
Stocking Distributor

Click to view price, real time Inventory, Delivery & Lifecycle Information:

Vishay Semiconductor/Diodes Division
MMBZ27VDA-E3-18

For any questions, you can email us directly:
sales@integrated-circuit.com

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
- AEC-Q101 qualified
- 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

Pb-free

e3

RoHS COMPLIANT

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	
Int. construction	Dual common anode	
Polarity	Uni-directional, bi-directional	

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 °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 °C, derate above 25 °C	P_{tot}	225	mW
			1.8	mW/K
Power dissipation on alumina substrate (3)	T_{amb} = 25 °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 °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)

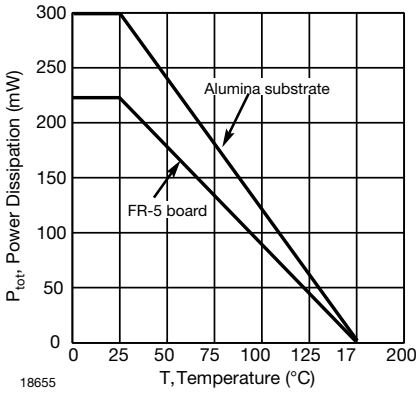


Fig. 1 - Steady State Power Derating Curve

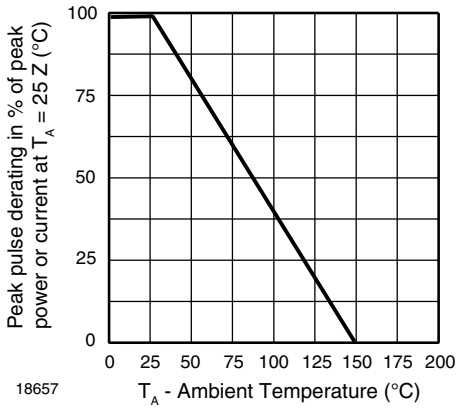


Fig. 3 - Pulse Derating Curve

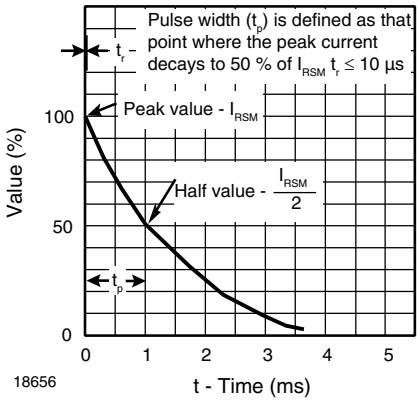
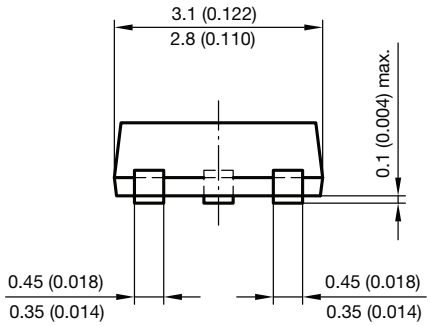
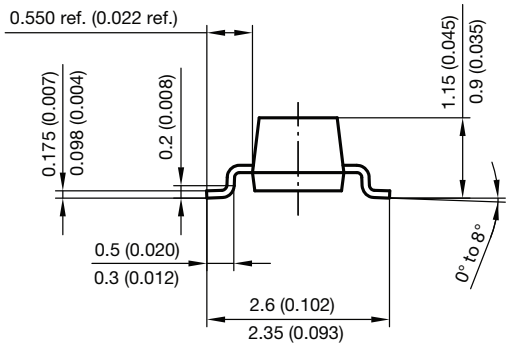
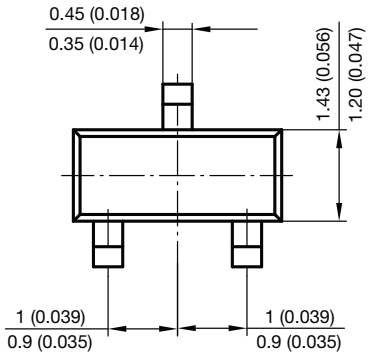


Fig. 2 - Pulse Waveform

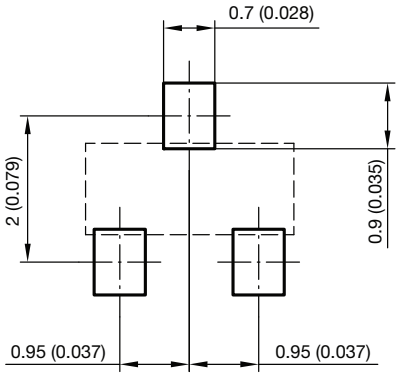
PACKAGE DIMENSIONS in millimeters (inches): **SOT-23**







Foot print recommendation:



Document no.: 6.541-5014.01-4
Rev. 8 - Date: 23.Sept.2009
17418

Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, “Vishay”), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay’s knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer’s responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer’s technical experts. Product specifications do not expand or otherwise modify Vishay’s terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.