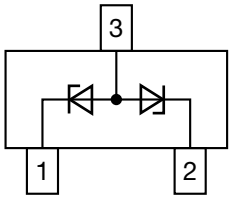
Small Signal Zener Diodes, Dual



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 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_A - RoHS-compliant, AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

AUTOMOTIVE GRADE Available

Pb-free

e3

RoHS COMPLIANT

LINKS TO ADDITIONAL RESOURCES

3D Models | SPICE Models | Marking | Parametric Search | Order Samples

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	Unidirectional, bidirectional	

ORDERING INFORMATION

DEVICE NAME	ORDERING CODE	AEC-Q101 QUALIFIED	TAPED UNITS PER REEL	MINIMUM ORDER QUANTITY
MMBZ27VDA	MMBZ27VDA-E3-08	no	3000 (8 mm tape on 7" reel)	15 000
	MMBZ27VDA-HE3_A-08	yes		
	MMBZ27VDA-E3-18	no	10 000 (8 mm tape on 13" reel)	10 000
	MMBZ27VDA-HE3_A-18	yes		

PACKAGE

PACKAGE NAME	WEIGHT	MOLDING COMPOUND FLAMMABILITY RATING	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS
SOT-23	9.2 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	Peak temperature max. 260 °C

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Peak power dissipation (1)	t_p = 10/1000 µs	P_{PK}	40	W
Power dissipation on FR-4 board (2)	T_{amb} = 25 °C, derate above 25 °C	P_{tot}	300	mW
			2.4	mW/K
Power dissipation on infinite heatsink	T_{amb} = 25 °C, derate above 25 °C	P_{tot}	500	mW
			4	mW/K
Thermal resistance junction to ambient air	According to JEDEC® 51-3 on FR-4 board with recommended soldering footprint	R_{thJA}	420	K/W
Thermal resistance junction to lead		R_{thJL}	250	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) With recommended soldering footprint

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	TA8	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)

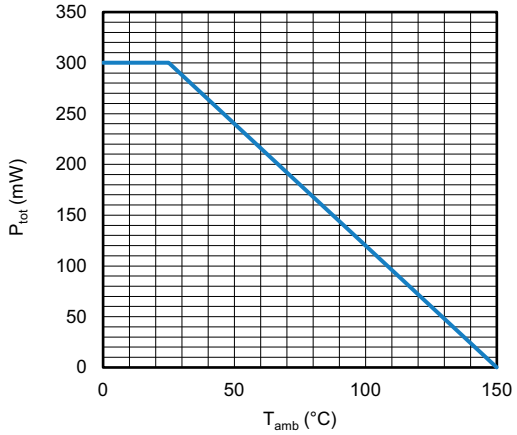


Fig. 1 - Admissible Power Dissipation vs. Ambient Temperature

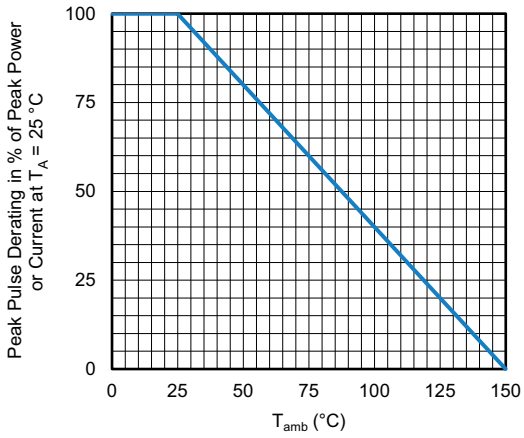


Fig. 3 - Pulse Derating Curve

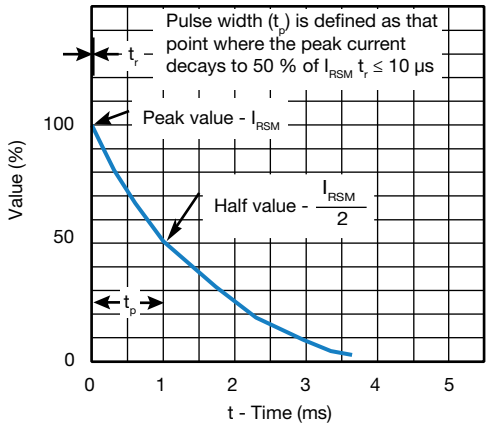
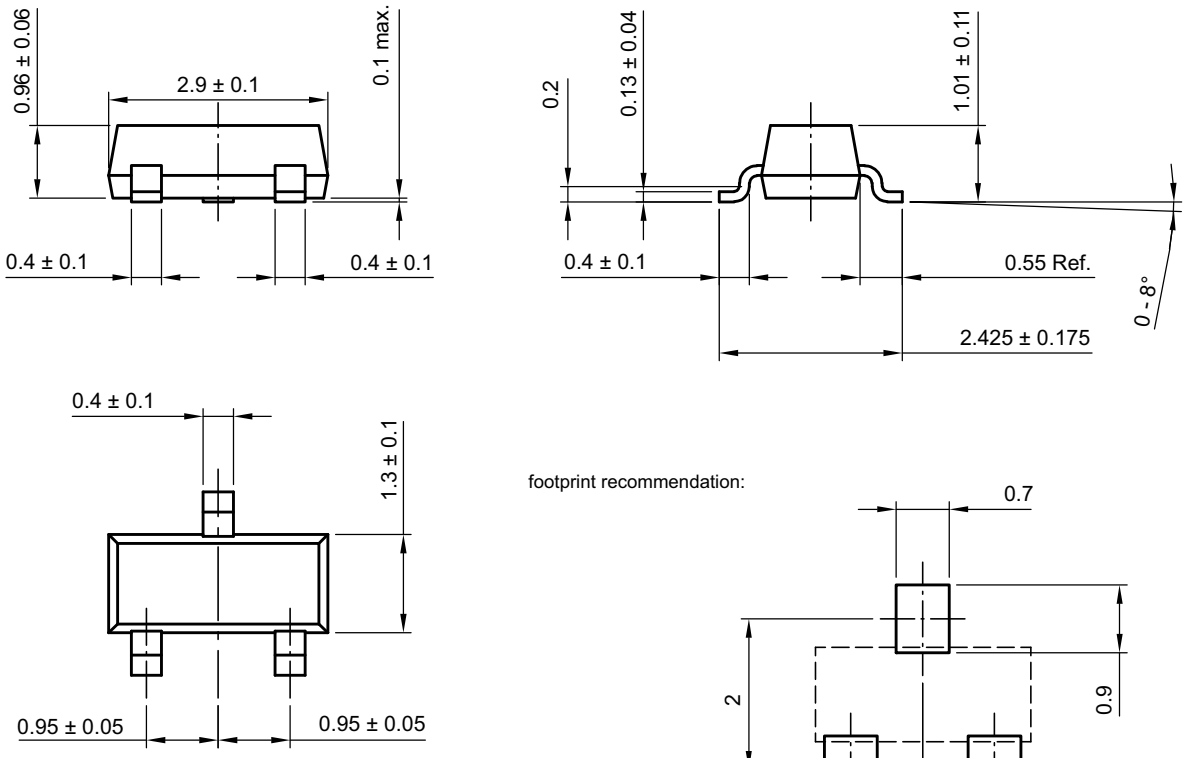


Fig. 2 - Pulse Waveform

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

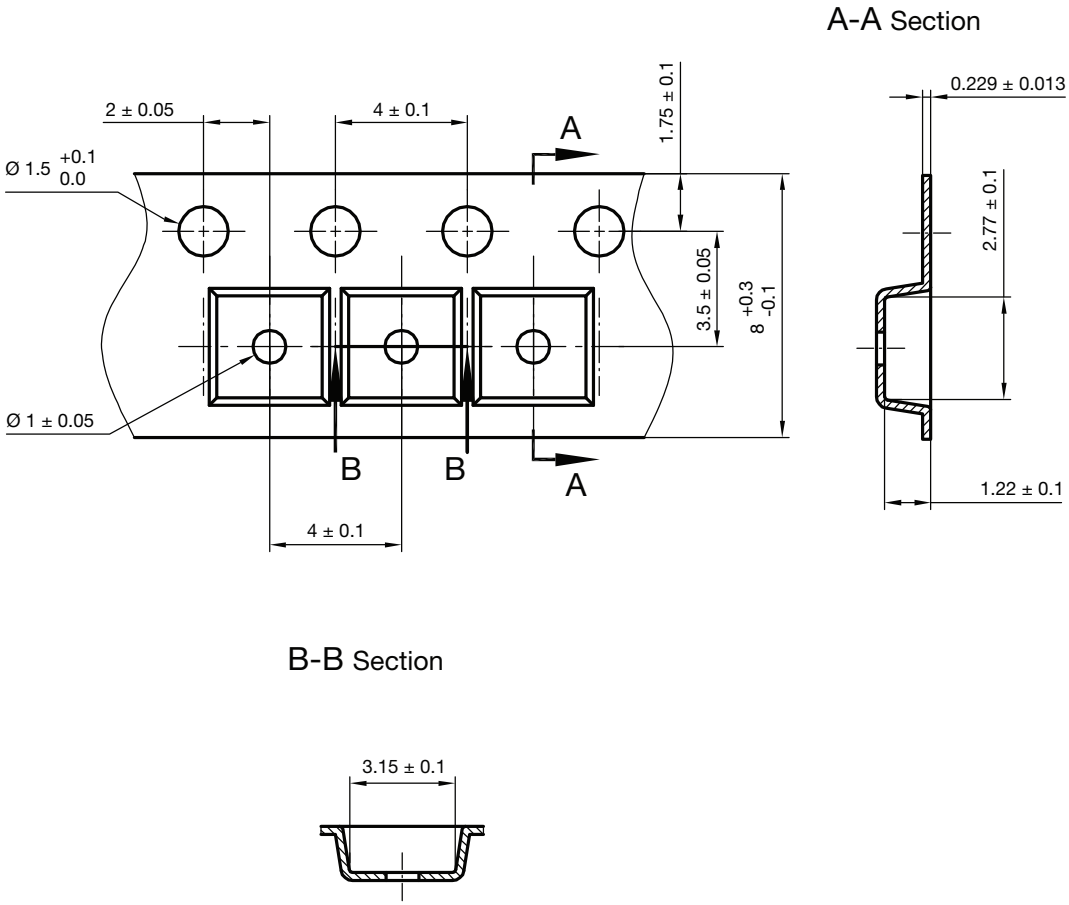


footprint recommendation:

Document no.: S8-V-3929.01-009 (4)
Created - Date: 18 Oct. 2021
Rev. 01 - Date: 18 Jan. 2022

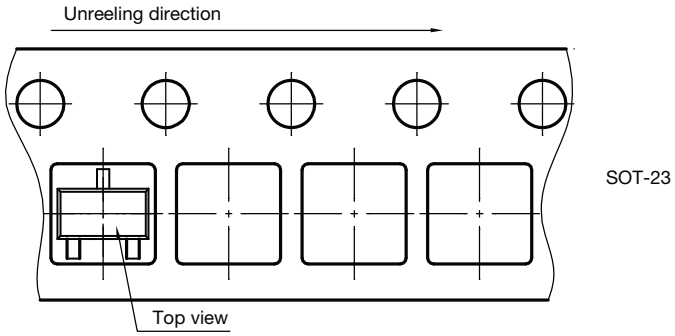
23193

CARRIER TAPE



Carrier tape SOT-23
Document no.: S8-V-3929.01-005 (4)
Created - Date: 04. Feb. 2010
22856

ORIENTATION IN CARRIER TAPE



SOT-23

Orientation in carrier tape
SOT-23
S8-V-3929.01-006 (4)
04.02.2010
22607

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