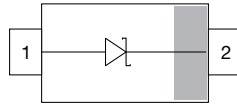




Small Signal Schottky Diode



FEATURES

- These diodes feature very low turn-on voltage and fast switching. These devices are protected by a PN junction guard ring against excessive voltage, such as electrostatic discharges
- For general purpose applications
- AEC-Q101 qualified available
- Molding compound meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level (MSL) 1
- 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



LINKS TO ADDITIONAL RESOURCES



MECHANICAL DATA

Case: SOD-123

Weight: approx. 10.6 mg

Packaging codes/options:

18/10K per 13" reel (8 mm tape), 10K/box

08/3K per 7" reel (8 mm tape), 15K/box

PARTS TABLE						
PART	ORDERING CODE	AEC-Q101 QUALIFIED	TYPE MARKING	CIRCUIT CONFIGURATION	TAPED UNITS PER REEL	MINIMUM ORDER QUANTITY
BAT42W	BAT42W-E3-08	no	LC	Single	3 000 (8 mm tape on 7" reel)	15 000
	BAT42W-HE3_A-08	yes			10 000 (8 mm tape on 13" reel)	10 000
	BAT42W-E3-18	no				
	BAT42W-HE3_A-18	yes				
BAT43W	BAT43W-E3-08	no	LD	Single	3 000 (8 mm tape on 7" reel)	15 000
	BAT43W-HE3_A-08	yes			10 000 (8 mm tape on 13" reel)	10 000
	BAT43W-E3-18	no				
	BAT43W-HE3_A-18	yes				

PACKAGE				
PACKAGE NAME	WEIGHT	MOLDING COMPOUND FLAMMABILITY RATING	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS
SOD-123	10.6 mg	UL 94 V-0	MSL 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
Repetitive peak reverse voltage		V _{RRM}	30	V
Forward continuous current ⁽¹⁾		I _F	300	mA
Repetitive peak forward current ⁽¹⁾		I _{FRM}	500	mA
Surge forward current ⁽¹⁾	Duty cycle t _p / T < 0.5	I _{FSM}	4	A
Power dissipation	On FR-4 board with recommended soldering footprint	P _{tot}	230	mW
	Infinite heatsink		350	mW

Note

⁽¹⁾ Infinite heatsink



THERMAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
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 lead	Infinite heatsink	R _{thJL}	280	K/W
Maximum junction temperature		T _j	125	°C
Storage temperature range		T _{stg}	-65 to +150	°C
Operating temperature range		T _{op}	-55 to +125	°C

ELECTRICAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	I _R = 100 μA (pulsed)		V _(BR)	30			V
Leakage current ⁽¹⁾	V _R = 25 V		I _R			0.5	μA
	V _R = 25 V, T _j = 100 °C		I _R			100	μA
Forward voltage ⁽¹⁾	I _F = 200 mA		V _F			1000	mV
	I _F = 10 mA	BAT42W	V _F			400	mV
	I _F = 50 mA	BAT42W	V _F			650	mV
	I _F = 2 mA	BAT43W	V _F	260		330	mV
	I _F = 15 mA	BAT43W	V _F			450	mV
Diode capacitance	V _R = 1 V, f = 1 MHz		C _D		7		pF
Reverse recovery time	I _F = 10 mA, I _R = 10 mA, I _R = 1 mA, R _L = 100 Ω		t _{rr}			5	ns

Note

⁽¹⁾ Pulse test; t_p ≤ 300 μs, duty cycle t_p/T < 0.02



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

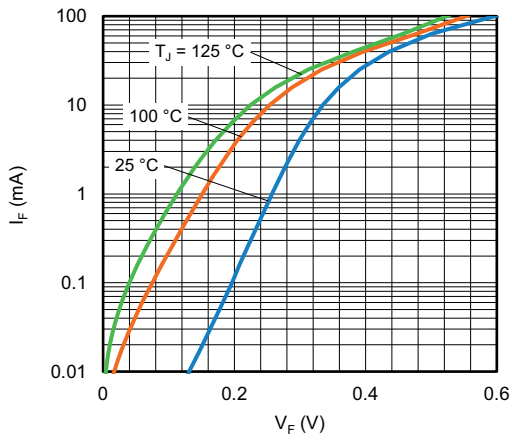


Fig. 1 - Typical Forward Current vs. Forward Voltage

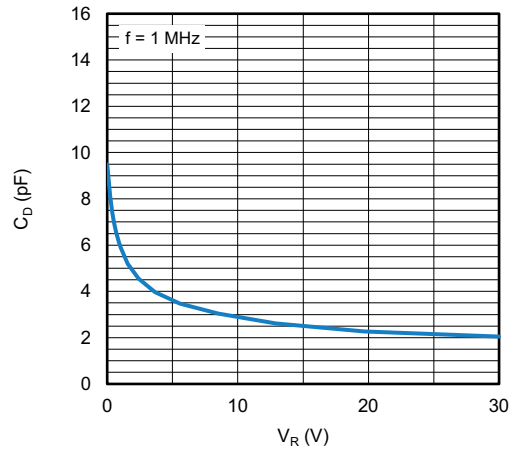


Fig. 3 - Typical Reverse Characteristics

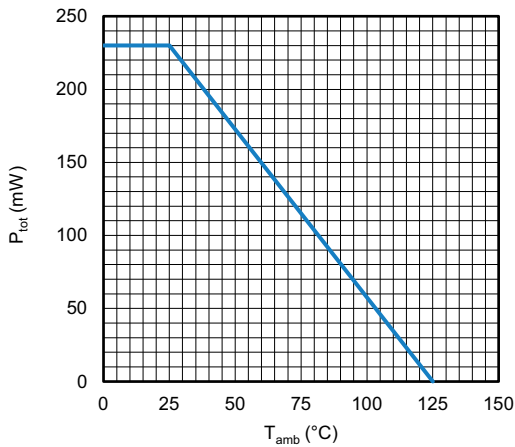


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

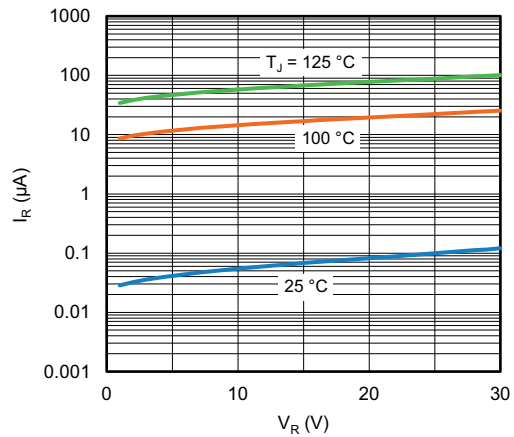
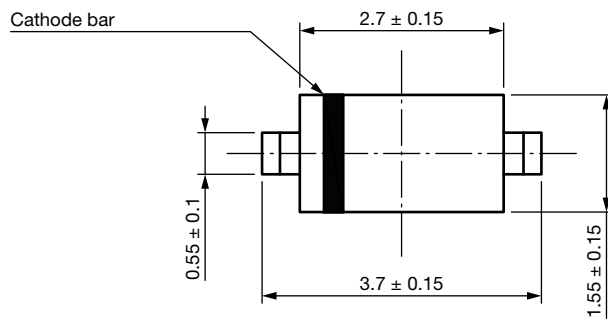
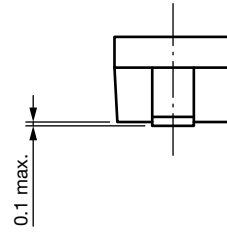
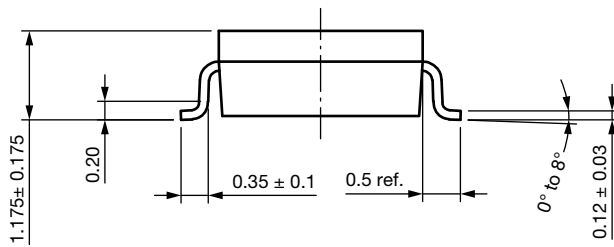


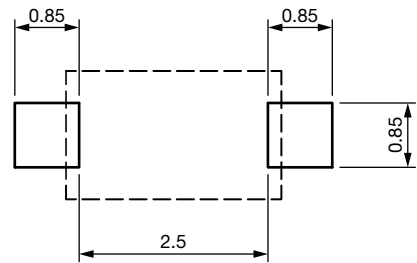
Fig. 4 - Typical Capacitance vs. Reverse Voltage



PACKAGE DIMENSIONS in millimeters (inches): **SOD-123**



Foot print recommendation

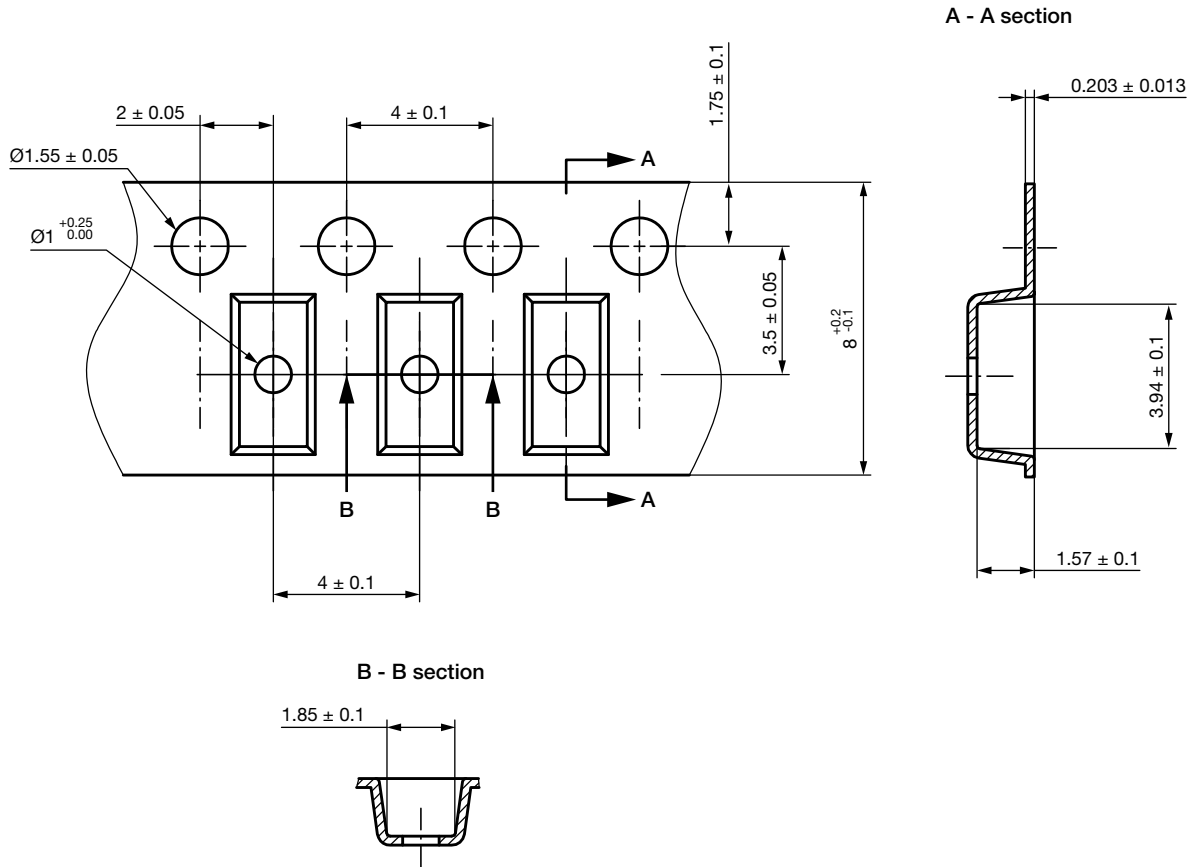


Rev. 01 - Date: 18. Jan. 2022
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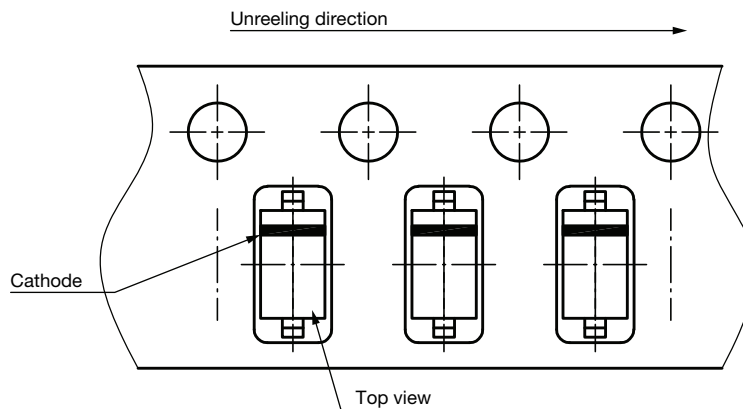
CARRIER TAPE SOD-123



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ORIENTATION IN CARRIER TAPE SOD-123



Rev. 02 - Date: 07. Nov. 2022
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