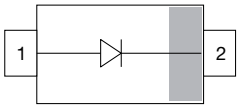
Small Signal Switching Diode, High Voltage



FEATURES

- Silicon epitaxial planar diode
- Fast switching diode, especially suited for applications requiring high voltage capability
- 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_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

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
GSD2004W	GSD2004W-E3-08	no	B7	Single	3 000 (8 mm tape on 7" reel)	15 000
	GSD2004W-HE3_A-08	yes				
	GSD2004W-E3-18	no			10 000 (8 mm tape on 13" reel)	10 000
	GSD2004W-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
Continuous reverse voltage		V_R	240	V
Repetitive peak reverse voltage		V_{RRM}	300	V
Forward current (continuous) (1)		I_F	300	mA
Repetitive peak forward current (1)		I_{FRM}	625	mA
Non-repetitive peak forward current (1)	t_p = 1 µs	I_{FSM}	4	A
	t_p = 1 s	I_{FSM}	1	A
Power dissipation	on FR-4 board with recommended soldering footprint	P_{tot}	300	mW
	Infinite heatsink		410	

Note

(1) Infinite heatsink

THERMAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)				
PARAMETER	**TEST CONDITION**	**SYMBOL**	**VALUE**	**UNIT**
Typical 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	Infinite heatsink	R_{thJL}	300	
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	-65 to +150	°C
Operating temperature range		T_{op}	-55 to +150	°C

ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)						
PARAMETER	**TEST CONDITION**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Reverse breakdown voltage	I_R = 100 µA	$V_{(BR)}$	300			V
Leakage current	V_R = 240 V	I_R			100	nA
	V_R = 240 V, T_j = 150 °C	I_R			100	µA
Forward voltage	I_F = 100 mA	V_F			1	V
	I_F = 20 mA	V_F		0.83	0.87	V
Diode capacitance	$V_F = V_R$ = 0, f = 1 MHz	C_D			2	pF
Reverse recovery time	$I_F = I_R$ = 30 mA, i_R = 3 mA, R_L = 100 Ω	t_{rr}			50	ns

TYPICAL CHARACTERISICS (T_{amb} = 25 °C, unless otherwise specified)

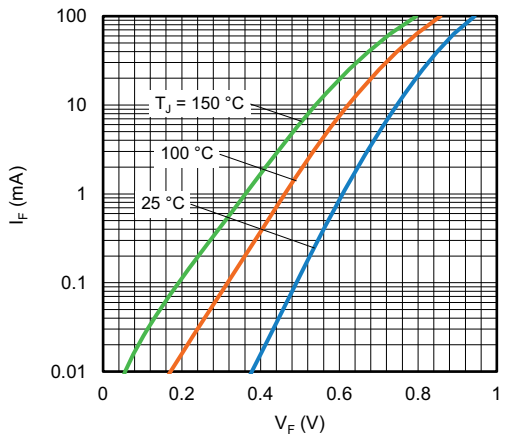


Fig. 1 - Forward Current vs. Forward Voltage

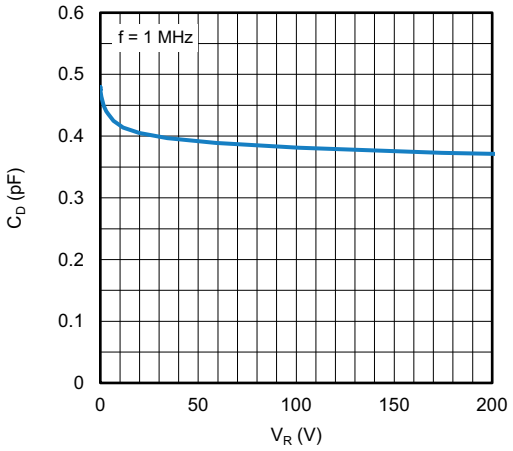


Fig. 3 - Typical Capacitance vs. Reverse Voltage

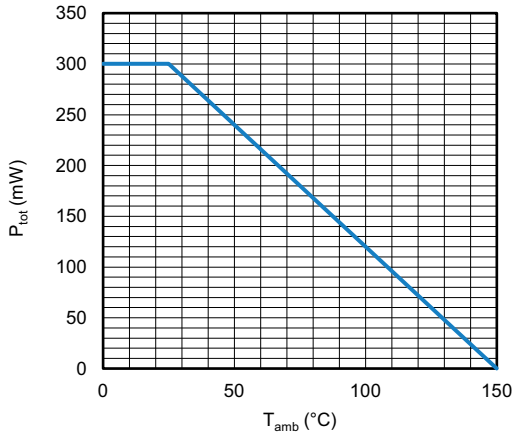


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

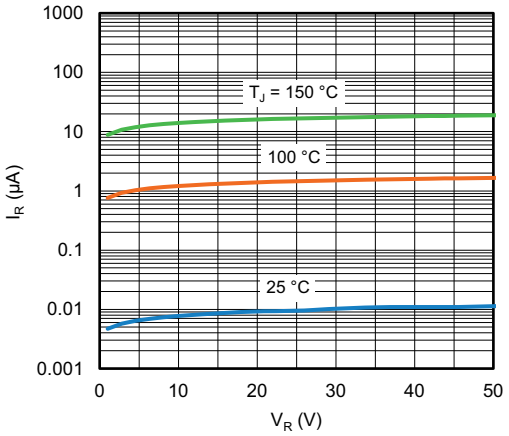
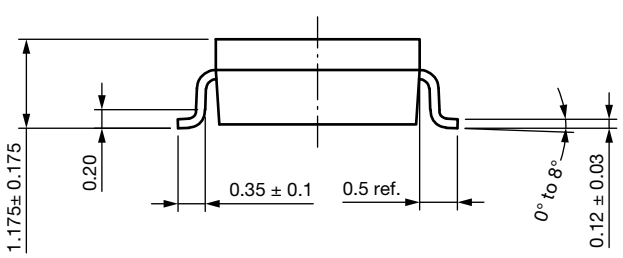
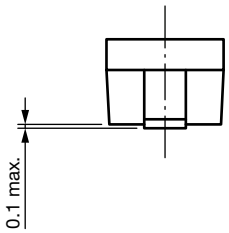
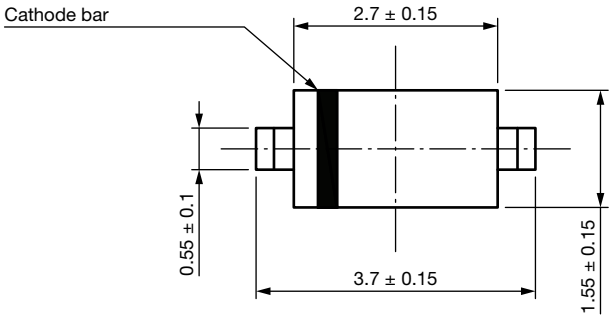


Fig. 4 - Typical Reverse Leakage Current vs. Reverse Voltage

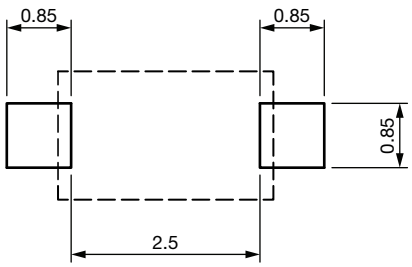
PACKAGE DIMENSIONS in millimeters (inches): **SOD-123**







Foot print recommendation



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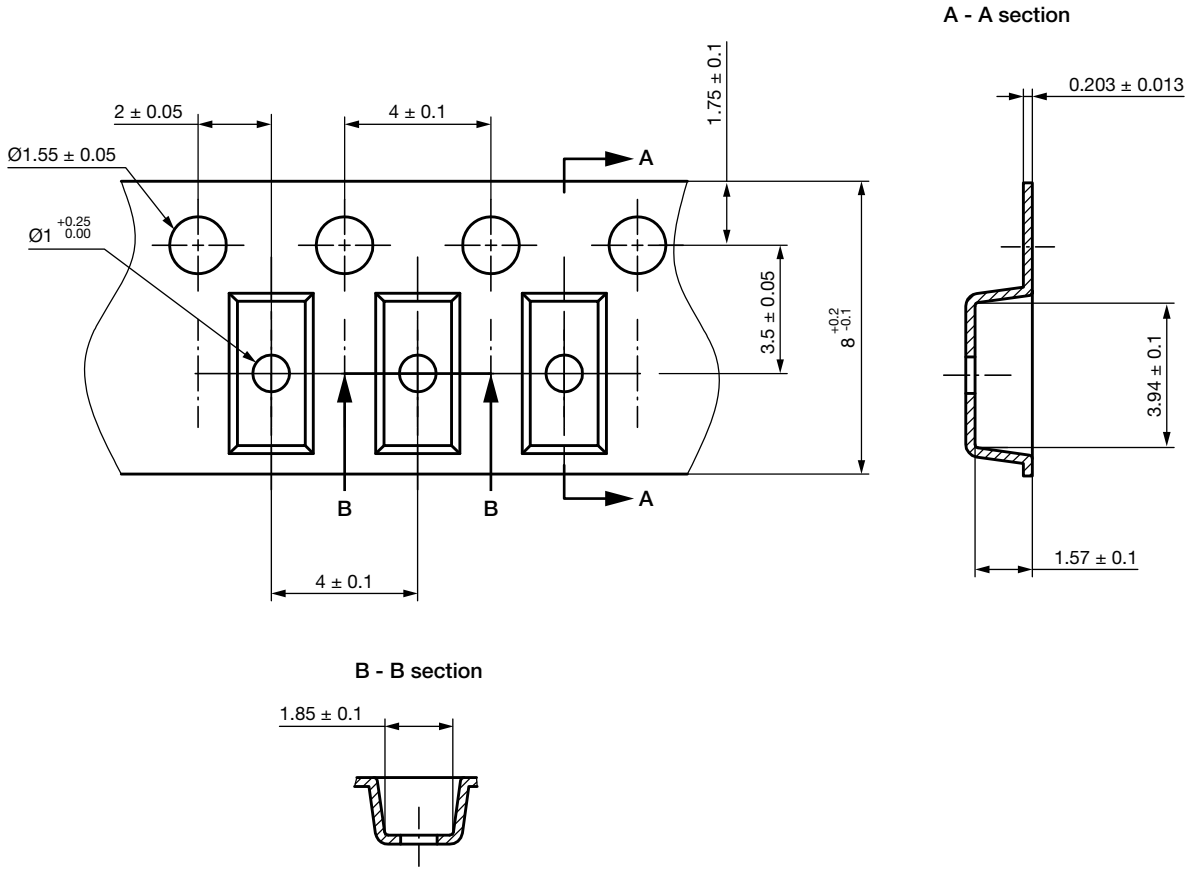
CARRIER TAPE SOD-123



Rev. 02 - Date: 21. Jan. 2014
Document no.: S8-V-3717.10-002 (4)

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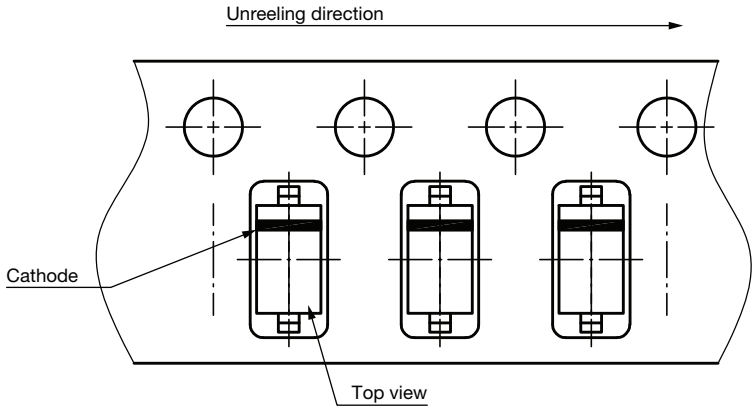
ORIENTATION IN CARRIER TAPE SOD-123



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