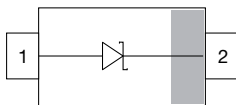


Small Signal Schottky Diode



FEATURES

- For general purpose applications
- These diodes feature very low turn-on voltage and fast switching.
- This device is protected by a PN junction guard ring against excessive voltage, such as electrostatic discharges
- 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/doc299912

AUTOMOTIVE
GRADE
Available



RoHS
COMPLIANT

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
BAT46W	BAT46W-E3-08	no	LH	Single	3 000 (8 mm tape on 7" reel)	15 000
	BAT46W-HE3_A-08	yes				
	BAT46W-E3-18	no			10 000 (8 mm tape on 13" reel)	10 000
	BAT46W-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}	100	V
Forward continuous current ⁽¹⁾		I _F	200	mA
Repetitive peak forward current ⁽¹⁾		I _{FRM}	350	mA
Surge forward current ⁽¹⁾	duty cycle t _p / T < 0.5	I _{FSM}	750	mA
Power dissipation	on FR-4 board with recommended soldering footprint	P _{tot}	270	mW
	Infinite heatsink		370	mW

Note

⁽¹⁾ Infinite heatsink

**THERMAL CHARACTERISTICS** ($T_{amb} = 25\text{ }^{\circ}\text{C}$, 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}	370	K/W
Thermal resistance junction lead	Infinite heatsink	R_{thJL}	270	K/W
Junction temperature		T_j	125	$^{\circ}\text{C}$
Storage temperature range		T_{stg}	-65 to +150	$^{\circ}\text{C}$
Operating temperature range		T_{op}	-55 to +125	$^{\circ}\text{C}$

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

PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	$I_R = 100\text{ }\mu\text{A}$ (pulsed)	$V_{(BR)}$	100			V
Leakage current ⁽¹⁾	$V_R = 1.5\text{ V}$	I_R			0.5	μA
	$V_R = 1.5\text{ V}, T_j = 60\text{ }^{\circ}\text{C}$	I_R			5	μA
	$V_R = 10\text{ V}$	I_R			0.8	μA
	$V_R = 10\text{ V}, T_j = 60\text{ }^{\circ}\text{C}$	I_R			7.5	μA
	$V_R = 50\text{ V}$	I_R			2	μA
	$V_R = 50\text{ V}, T_j = 60\text{ }^{\circ}\text{C}$	I_R			15	μA
	$V_R = 75\text{ V}$	I_R			5	μA
	$V_R = 75\text{ V}, T_j = 60\text{ }^{\circ}\text{C}$	I_R			20	μA
Forward voltage ⁽¹⁾	$I_F = 0.1\text{ mA}$	V_F			250	mV
	$I_F = 10\text{ mA}$	V_F			450	mV
	$I_F = 250\text{ mA}$	V_F			1000	mV
Diode capacitance	$V_R = 0\text{ V}, f = 1\text{ MHz}$	C_D		10		pF
	$V_R = 1\text{ V}, f = 1\text{ MHz}$	C_D		6		pF

Note

⁽¹⁾ Pulse test; $t_p \leq 300\text{ }\mu\text{s}$, duty cycle $t_p/T < 0.02$

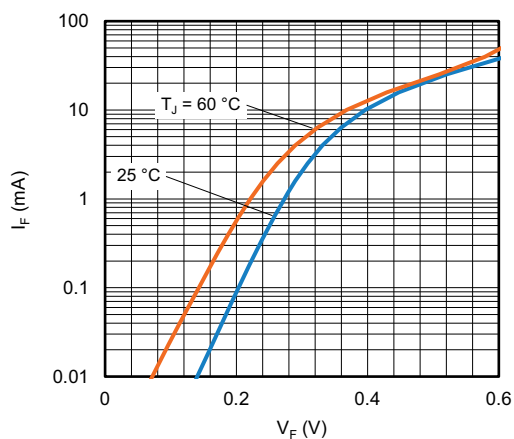
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Admissible Power Dissipation vs. Ambient Temperature

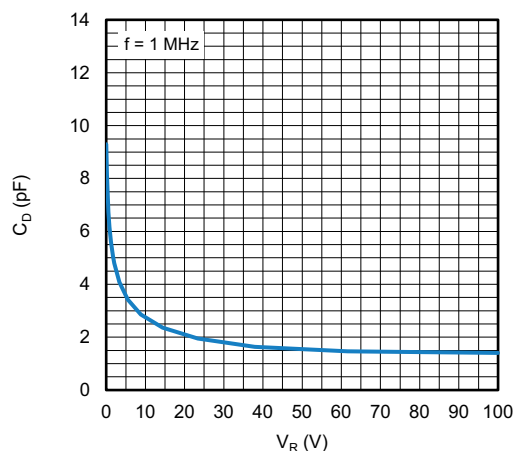


Fig. 3 - Typical Reverse Characteristics

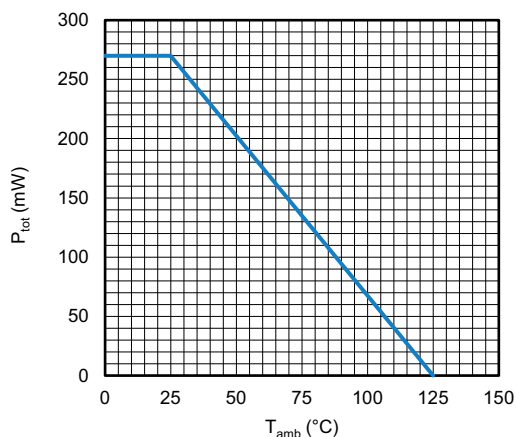


Fig. 2 - Typical Forward Characteristics

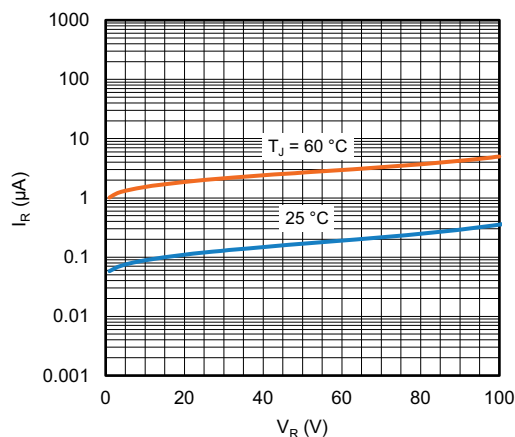
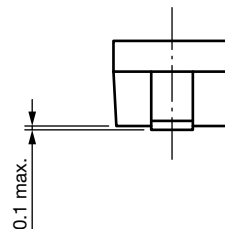


Fig. 4 - Typical Capacitance vs. Reverse Voltage



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



Foot print recommendation



Rev. 01 - Date: 18. Jan. 2022

Document no.: S8-V-3910.01-003 (4)

23223

CARRIER TAPE SOD-123


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

23224

OIRIENTATION IN CARRIER TAPE SOD-123


Rev. 02 - Date: 07. Nov. 2022
Document no.: S8-V-3717.10-003 (4)

23225



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