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
- 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

MECHANICAL DATA

Case: SOD-123
Weight: approx. 10.3 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	INTERNAL CONSTRUCTION	TYPE MARKING	REMARKS
BAT42W	BAT42W-E3-08 or BAT42W-E3-18	Single diode	L2	Tape and reel
	BAT42W-HE3-08 or BAT42W-HE3-18			
BAT43W	BAT43W-E3-08 or BAT43W-E3-18	Single diode	L3	
	BAT43W-HE3-08 or BAT43W-HE3-18			

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	200	mA
Repetitive peak forward current [1]	$t_p < 1$ s, $\delta < 0.5$	I_{FRM}	500	mA
Surge forward current [1]	$t_p < 10$ ms	I_{FSM}	4	A
Power dissipation [1]	T_{amb} = 65 °C	P_{tot}	200	mW

Note
[1] Valid provided that electrodes are kept at ambient temperature

THERMAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air [1]		R_{thJA}	300	K/W
Junction temperature		T_j	125	°C
Operating temperature range		T_{op}	- 55 to + 125	°C
Storage temperature range		T_{stg}	- 55 to + 150	°C

Note
[1] Valid provided that electrodes are kept at ambient temperature

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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; $t_p \leq 300$ µs, $t_p/T < 0.02$

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

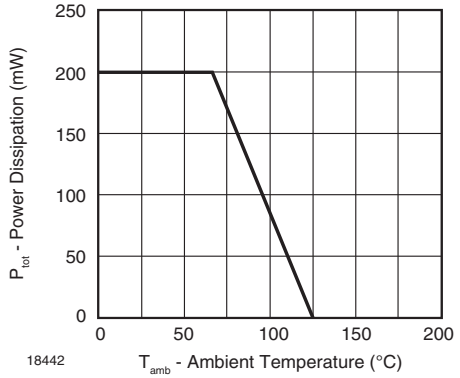

Fig. 1 - Admissible Power Dissipation vs. Ambient Temperature

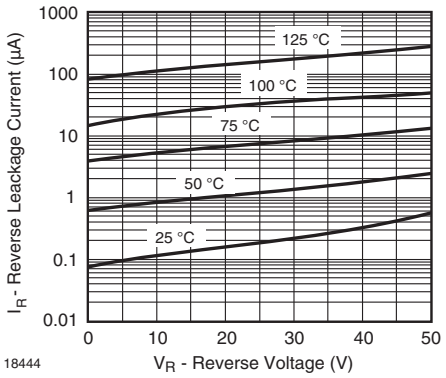

Fig. 3 - Typical Reverse Characteristics

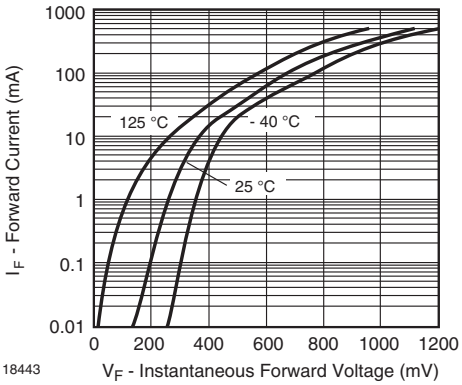

Fig. 2 - Typical Forward Characteristics

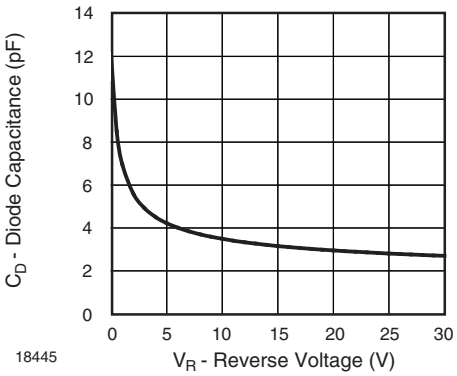

Fig. 4 - Typical Capacitance vs. Reverse Voltage

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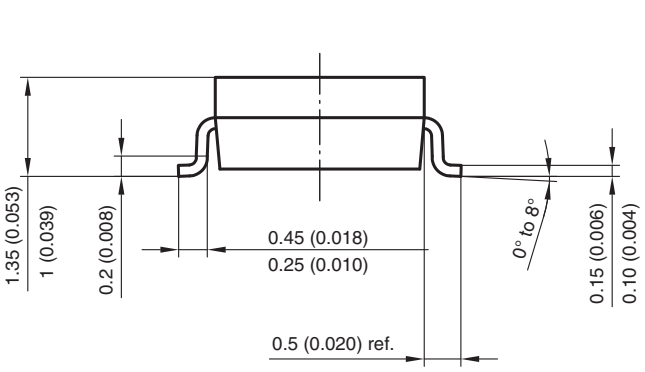
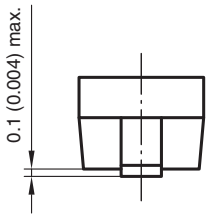
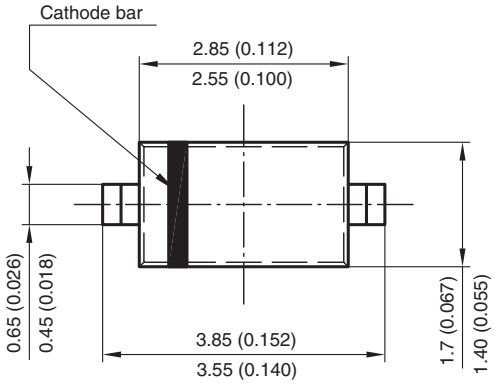
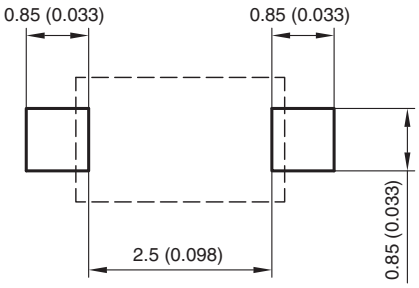
PACKAGE DIMENSIONS in millimeters (inches): **SOD-123**









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