

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
- AEC-Q101 qualified available
- 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


RoHS
COMPLIANT

DESIGN SUPPORT TOOLS

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3D
Models
Available

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	CIRCUIT CONFIGURATION	TYPE MARKING	REMARKS
BAT54W	BAT54W-E3-08 or BAT54W-E3-18	Single	L4	Tape and reel
	BAT54W-HE3-08 or BAT54W-HE3-18			

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25^{\circ}\text{C}$, 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⁾	$t_p < 1\text{ s}, \delta < 0.5$	I_{FRM}	300	mA
Surge forward current ⁽¹⁾	$t_p = 10\text{ ms}$	I_{FSM}	600	mA
Power dissipation ⁽¹⁾		P_{tot}	150	mW

Note

⁽¹⁾ Valid provided that electrodes are kept at ambient temperature

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

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air ⁽¹⁾		R_{thJA}	650	K/W
Maximum 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	$^{\circ}\text{C}$

Note

⁽¹⁾ Valid provided that electrodes are kept at ambient temperature

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	Tested with 100 μA pulses	$V_{(BR)}$	30			V
Leakage current ⁽¹⁾	$V_R = 25\text{ V}$	I_R			2	μA
Forward voltage ⁽¹⁾	$I_F = 0.1\text{ mA}$	V_F			240	mV
	$I_F = 1\text{ mA}$	V_F			320	mV
	$I_F = 10\text{ mA}$	V_F			400	mV
	$I_F = 30\text{ mA}$	V_F			500	mV
	$I_F = 100\text{ mA}$	V_F			800	mV
Diode capacitance	$V_R = 1\text{ V}$, $f = 1\text{ MHz}$	C_D			10	pF
Reverse recovery time	$I_F = 10\text{ mA}$, $I_R = 10\text{ mA}$, $i_R = 1\text{ mA}$, $R_L = 100\text{ }\Omega$	t_{rr}			5	ns

Note

⁽¹⁾ Pulse test: $t_p < 300\text{ }\mu\text{s}$, $\theta < 2\text{ }\%$

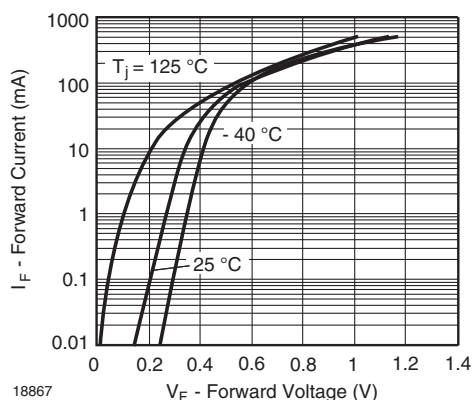
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Typical Forward Current vs. Forward Voltage vs. Various Temperatures

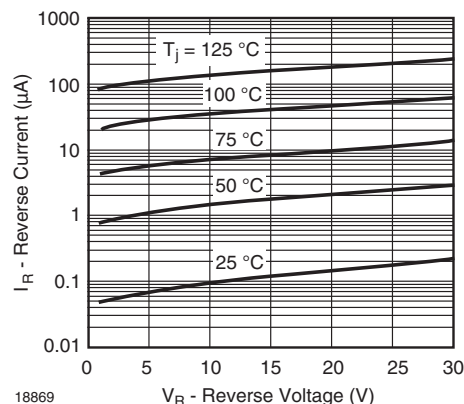


Fig. 3 - Typical Reverse Current vs. Reverse Voltage vs. Various Temperatures

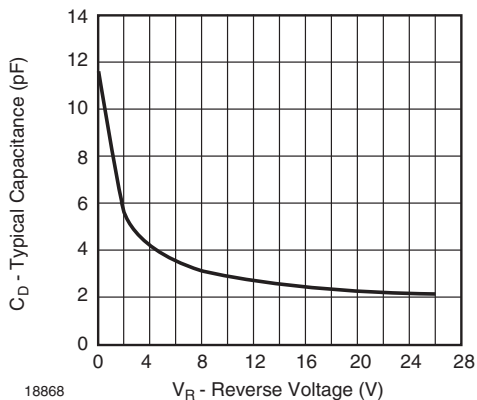
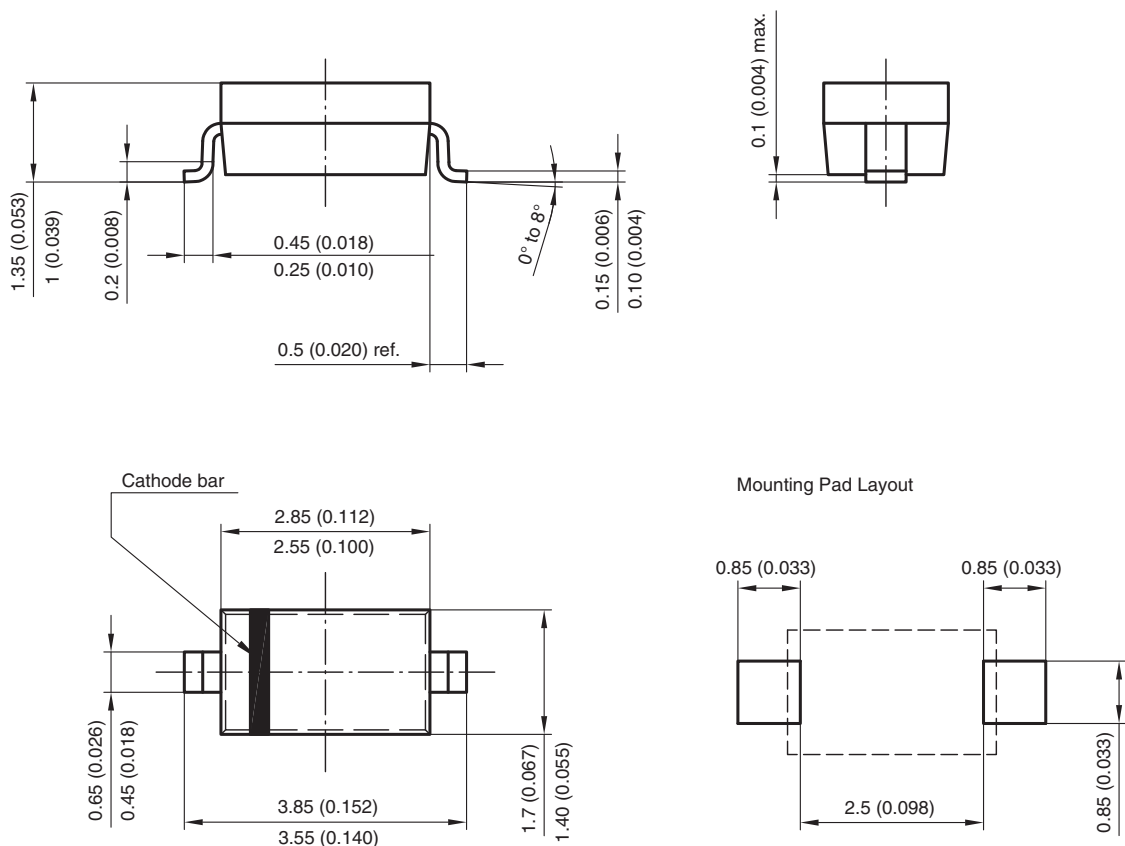


Fig. 2 - Typical Capacitance vs. Reverse Applied Voltage

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


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