

## Small Signal Schottky Diode



### DESIGN SUPPORT TOOLS

**3D**  
Models Available

*click logo to get started*

### MECHANICAL DATA

**Case:** SOD-123

**Weight:** approx. 9.4 mg

**Packaging codes/options:**

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

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

### 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 (part number on request)
- Base P/N-G3 - green commercial grade
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
**GREEN**  
(S-2008)

### PARTS TABLE

PART	ORDERING CODE	CIRCUIT CONFIGURATION	TYPE MARKING	REMARKS
BAT42W-G	BAT42W-G3-08 or BAT42W-G3-18	Single	LC	Tape and reel
BAT43W-G	BAT43W-G3-08 or BAT43W-G3-18	Single	LD	

### 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 <sup>(1)</sup>		$I_F$	200	mA
Repetitive peak forward current <sup>(1)</sup>	$t_p < 1 \text{ s}, \delta < 0.5$	$I_{FRM}$	500	mA
Surge forward current <sup>(1)</sup>	$t_p < 10 \text{ ms}$	$I_{FSM}$	4	A
Power dissipation <sup>(1)</sup>	$T_{amb} = 65^\circ\text{C}$	$P_{tot}$	200	mW

#### Note

<sup>(1)</sup> 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 <sup>(1)</sup>		$R_{thJA}$	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

<sup>(1)</sup> Valid provided that electrodes are kept at ambient temperature

ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25^\circ C$ , unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	$I_R = 100 \mu A$ (pulsed)		$V_{(BR)}$	30			V
Leakage current <sup>(1)</sup>	$V_R = 25 V$		$I_R$		0.5	$\mu A$	
	$V_R = 25 V, T_j = 100^\circ C$		$I_R$		100	$\mu A$	
Forward voltage <sup>(1)</sup>	$I_F = 200 mA$		$V_F$		1000	mV	
	$I_F = 10 mA$	BAT42W-G	$V_F$		400	mV	
	$I_F = 50 mA$	BAT42W-G	$V_F$		650	mV	
	$I_F = 2 mA$	BAT43W-G	$V_F$	260	330	mV	
	$I_F = 15 mA$	BAT43W-G	$V_F$		450	mV	
Diode capacitance	$V_R = 1 V, f = 1 MHz$		$C_D$		7		pF
Reverse recovery time	$I_F = 10 mA, I_R = 10 mA, i_R = 1 mA, R_L = 100 \Omega$		$t_{rr}$		5	ns	

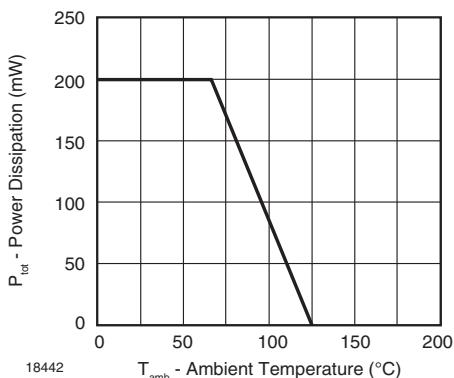
**Note**
<sup>(1)</sup> Pulse test;  $t_p \leq 300 \mu s, t_p/T < 0.02$ 
**TYPICAL CHARACTERISTICS ( $T_{amb} = 25^\circ C$ , unless otherwise specified)**


Fig. 1 - Admissible Power Dissipation vs. Ambient Temperature

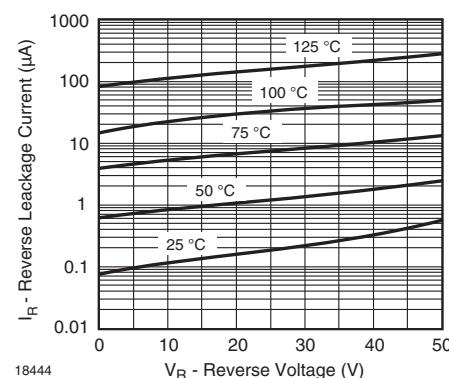


Fig. 3 - Typical Reverse Characteristics

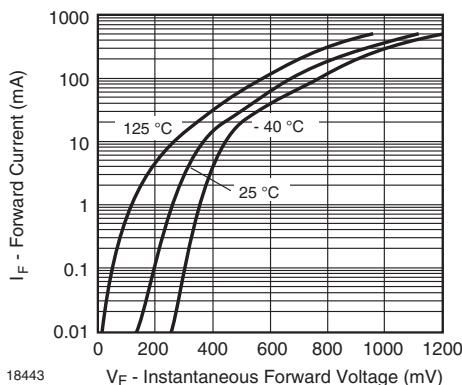


Fig. 2 - Typical Forward Characteristics

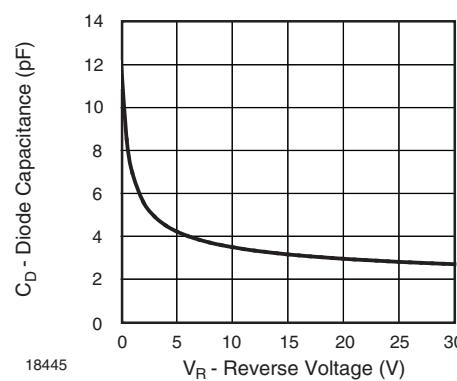
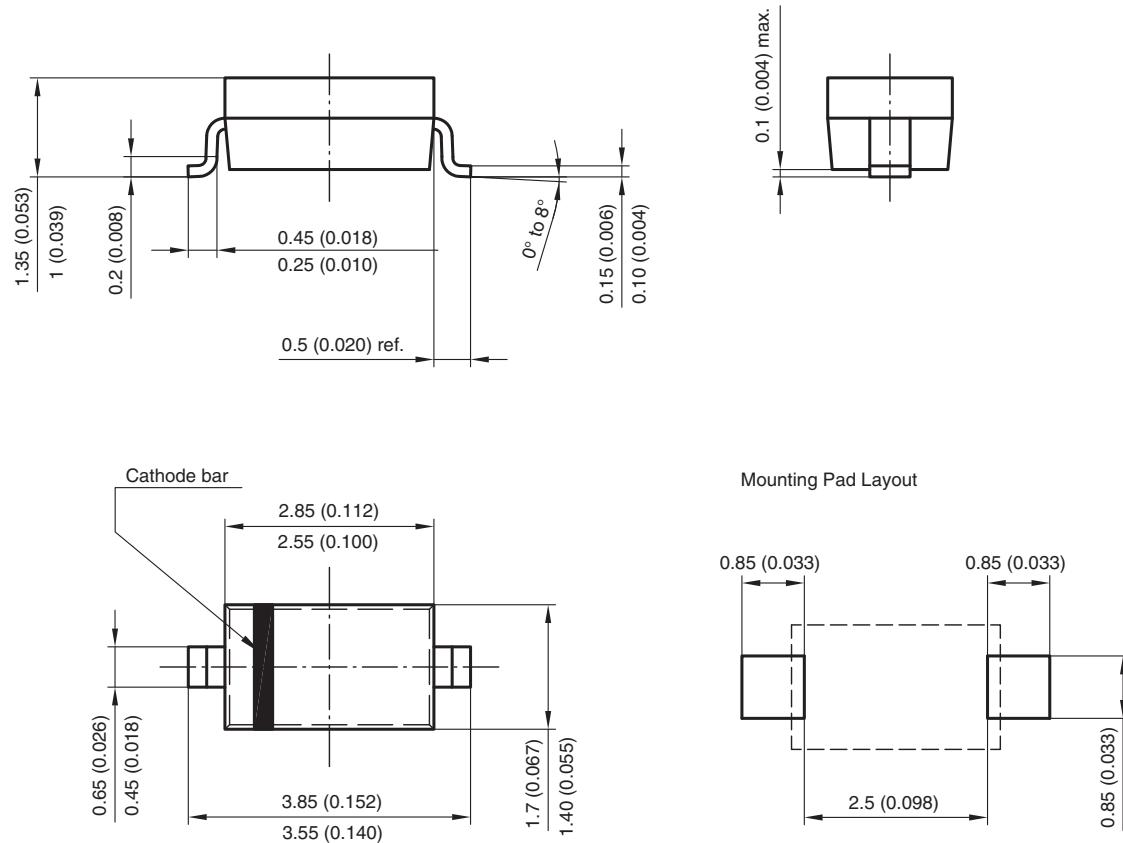


Fig. 4 - Typical Capacitance vs. Reverse Voltage

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


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