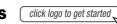
**Vishay Semiconductors** 

## **Small Signal Schottky Diode**



www.vishay.com

## **DESIGN SUPPORT TOOLS**





## **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

## 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



RoHS

COMPLIAN<sup>®</sup>

- For general purpose applications
- 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 <u>www.vishay.com/doc?99912</u>

PARTS TABLE					
PART	ORDERING CODE	CIRCUIT CONFIGURATION	TYPE MARKING	REMARKS	
BAT42W	BAT42W-E3-08 or BAT42W-E3-18	Single	L2	Tape and reel	
	BAT42W-HE3-08 or BAT42W-HE3-18	Sirigie	LZ		
BAT43W	BAT43W-E3-08 or BAT43W-E3-18	Single	L3		
	BAT43W-HE3-08 or BAT43W-HE3-18	Single	LO		

ABSOLUTE MAXIMUM RATINGS (T <sub>amb</sub> = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT	
Repetitive peak reverse voltage		V <sub>RRM</sub>	30	V	
Forward continuous current <sup>(1)</sup>		I <sub>F</sub>	200	mA	
Repetitive peak forward current (1)	t <sub>p</sub> < 1 s, δ < 0.5	I <sub>FRM</sub>	500	mA	
Surge forward current <sup>(1)</sup>	t <sub>p</sub> < 10 ms	I <sub>FSM</sub> 4		A	
Power dissipation <sup>(1)</sup>	T <sub>amb</sub> = 65 °C	P <sub>tot</sub>	200	mW	

#### Note

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

<b>THERMAL CHARACTERISTICS</b> ( $T_{amb} = 25 \degree C$ , unless otherwise specified)					
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT	
Thermal resistance junction to ambient air <sup>(1)</sup>		R <sub>thJA</sub>	300	K/W	
Junction temperature		Tj	125	°C	
Operating temperature range		T <sub>op</sub>	-55 to +125	°C	
Storage temperature range		T <sub>stg</sub>	-55 to +150	°C	

Note

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

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BAT42W, BAT43W



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ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	I <sub>R</sub> = 100 μA (pulsed)		V <sub>(BR)</sub>	30			V
Leakage current <sup>(1)</sup>	V <sub>R</sub> = 25 V		I <sub>R</sub>			0.5	μA
Leakage current	$V_{R} = 25 \text{ V}, \text{ T}_{j} = 100 ^{\circ}\text{C}$		I <sub>R</sub>			100	μA
	I <sub>F</sub> = 200 mA		V <sub>F</sub>			1000	mV
	I <sub>F</sub> = 10 mA	BAT42W	VF			400	mV
Forward voltage <sup>(1)</sup>	I <sub>F</sub> = 50 mA	BAT42W	V <sub>F</sub>			650	mV
	I <sub>F</sub> = 2 mA	BAT43W	V <sub>F</sub>	260		330	mV
	l <sub>F</sub> = 15 mA	BAT43W	VF			450	mV
Diode capacitance	$V_R = 1 V, f = 1 MHz$		CD		7		pF
Reverse recovery time	$I_F = 10 \text{ mA}, I_R = 10 \text{ mA}, \\ i_R = 1 \text{ mA}, R_L = 100 \Omega$		t <sub>rr</sub>			5	ns

#### Note

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

## TYPICAL CHARACTERISTICS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

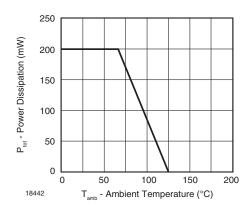


Fig. 1 - Admissible Power Dissipation vs. Ambient Temperature

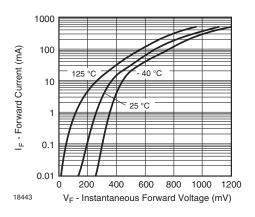


Fig. 2 - Typical Forward Characteristics

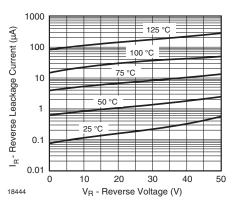


Fig. 3 - Typical Reverse Characteristics

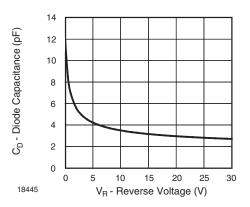


Fig. 4 - Typical Capacitance vs. Reverse Voltage

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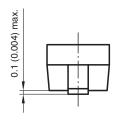
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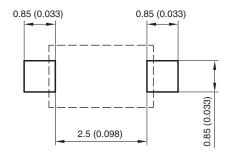
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PACKAGE DIMENSIONS in millimeters (inches): SOD-123



Cathode bar 2.85 (0.112) 2.55 (0.100) 2.55 (0.100) (8 100) (9 0) (9 00) (9 00) (9 00) (9 00) (9 00) (9 0) (9 00) (9 0) ( Mounting Pad Layout



Rev. 4 - Date: 24. Sep. 2009 Document no.: S8-V-3910.01-001 (4) 17432



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