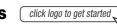
Vishay Semiconductors

Small Signal Schottky Diode



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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[®]

- 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 _{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, δ < 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 ($T_{amb} = 25 \degree C$, unless otherwise specified)					
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT	
Thermal resistance junction to ambient air ⁽¹⁾		R _{thJA}	300	K/W	
Junction temperature		Tj	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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BAT42W, BAT43W



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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
Leakage current	$V_{R} = 25 \text{ V}, \text{ T}_{j} = 100 ^{\circ}\text{C}$		I _R			100	μA
	I _F = 200 mA		V _F			1000	mV
	I _F = 10 mA	BAT42W	VF			400	mV
Forward voltage ⁽¹⁾	I _F = 50 mA	BAT42W	V _F			650	mV
	I _F = 2 mA	BAT43W	V _F	260		330	mV
	l _F = 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 _{rr}			5	ns

Note

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

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

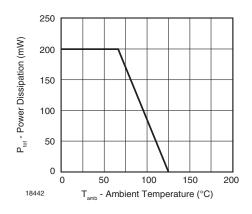


Fig. 1 - Admissible Power Dissipation vs. Ambient Temperature

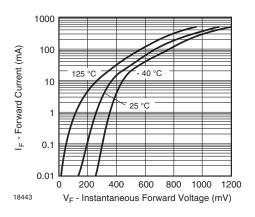


Fig. 2 - Typical Forward Characteristics

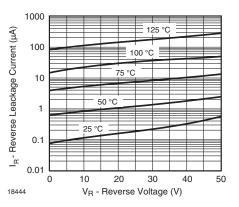


Fig. 3 - Typical Reverse Characteristics

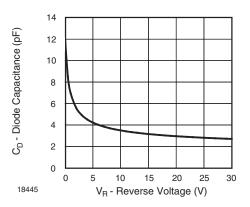


Fig. 4 - Typical Capacitance vs. Reverse Voltage

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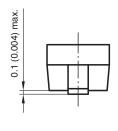
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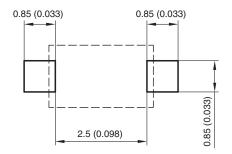
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PACKAGE DIMENSIONS in millimeters (inches): SOD-123



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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