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[Vishay Semiconductor/Diodes Division](#)
[BAT42WS-E3-18](#)

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www.vishay.com

BAT42WS, BAT43WS

Vishay Semiconductors

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



RoHS
COMPLIANT

MECHANICAL DATA

Case: SOD-323

Weight: approx. 4.3 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
BAT42WS	BAT42WS-E3-08 or BAT42WS-E3-18	Single diode	L2	Tape and reel
	BAT42WS-HE3-08 or BAT42WS-HE3-18			
BAT43WS	BAT43WS-E3-08 or BAT43WS-E3-18	Single diode	L3	
	BAT43WS-HE3-08 or BAT43WS-HE3-18			

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, 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}	500	mA
Surge forward current ⁽¹⁾	$t_p < 10\text{ ms}$	I_{FSM}	4	A
Power dissipation ⁽¹⁾		P_{tot}	150	mW

Note

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

THERMAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air ⁽¹⁾		R_{thJA}	650	K/W
Junction temperature		T_j	125	$^{\circ}\text{C}$
Operating temperature range		T_{op}	- 55 to + 125	$^{\circ}\text{C}$
Storage temperature range		T_{stg}	- 55 to + 150	$^{\circ}\text{C}$

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	BAT42WS	V _F			400	mV
	I _F = 50 mA	BAT42WS	V _F			650	mV
	I _F = 2 mA	BAT43WS	V _F	260		330	mV
	I _F = 15 mA	BAT43WS	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 = 100 mA, i _R = 1 mA, R _L = 100 Ω		t _{rr}			5	ns

Note

(1) Pulse test; t_p ≤ 300 μs, t_p/T < 0.02

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

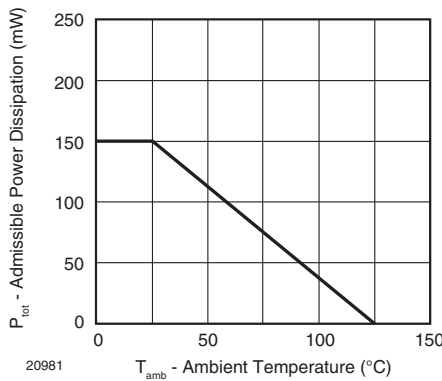


Fig. 1 - Admissible Power Dissipation vs. Ambient Temperature

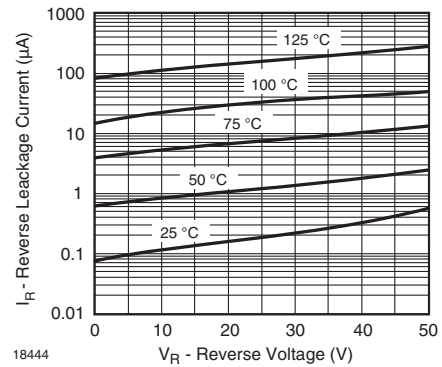


Fig. 3 - Typical Reverse Characteristics

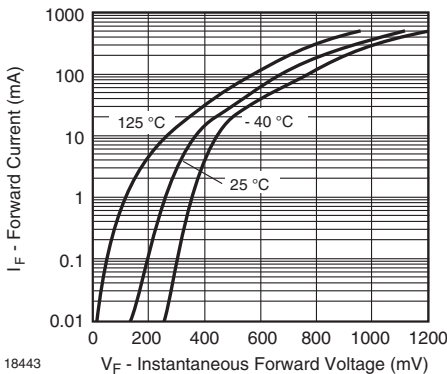


Fig. 2 - Typical Forward Characteristics

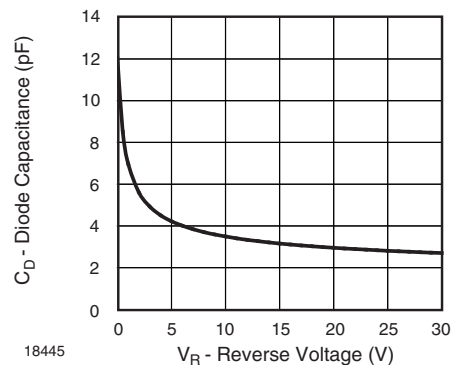


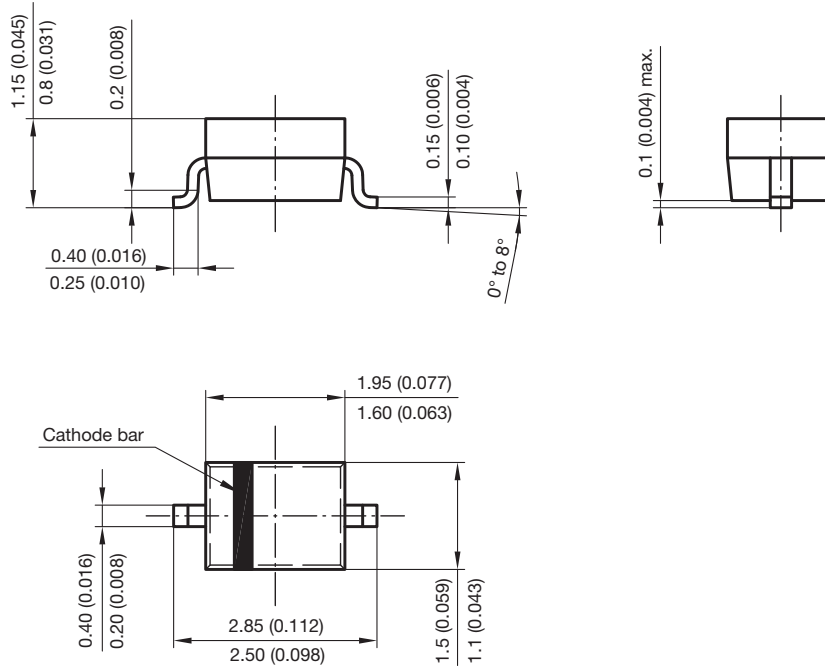
Fig. 4 - Typical Capacitance vs. Reverse Voltage



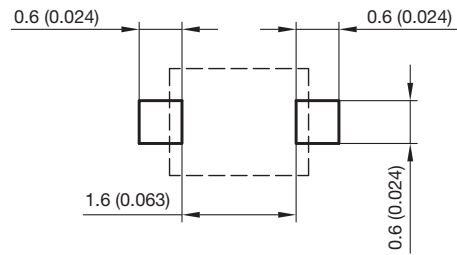
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PACKAGE DIMENSIONS in millimeters (inches): **SOD-323**



Foot print recommendation:



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 17443



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