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[Vishay Semiconductor/Diodes Division](#)  
[BAT54WS-E3-08](#)

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**BAT54WS**

Vishay Semiconductors

## Small Signal Schottky Diode



### 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

### 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
- 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](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT

PARTS TABLE				
PART	ORDERING CODE	INTERNAL CONSTRUCTION	TYPE MARKING	REMARKS
BAT54WS	BAT54WS-E3-08 or BAT54WS-E3-18	Single diode	L4	Tape and reel
	BAT54WS-HE3-08 or BAT54WS-HE3-18			

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 <sup>(1)</sup>		I <sub>FRM</sub>	300	mA
Surge forward current <sup>(1)</sup>	t <sub>p</sub> < 1 s	I <sub>FSM</sub>	600	mA
Power dissipation <sup>(1)</sup>		P <sub>tot</sub>	150	mW

### Note

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

THERMAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air <sup>(1)</sup>		R <sub>thJA</sub>	650	K/W
Maximum junction temperature		T <sub>j</sub>	125	°C
Storage temperature range		T <sub>stg</sub>	- 65 to + 150	°C
Operating temperature range		T <sub>op</sub>	- 55 to + 125	°C

### Note

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

ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	Tested with 100 μA pulses	V <sub>(BR)</sub>	30			V
Leakage current <sup>(1)</sup>	V <sub>R</sub> = 25 V	I <sub>R</sub>			2	μA
Forward voltage <sup>(1)</sup>	I <sub>F</sub> = 0.1 mA	V <sub>F</sub>			240	mV
	I <sub>F</sub> = 1 mA	V <sub>F</sub>			320	mV
	I <sub>F</sub> = 10 mA	V <sub>F</sub>			400	mV
	I <sub>F</sub> = 30 mA	V <sub>F</sub>			500	mV
	I <sub>F</sub> = 100 mA	V <sub>F</sub>			800	mV
Diode capacitance	V <sub>R</sub> = 1 V, f = 1 MHz	C <sub>D</sub>			10	pF
Reverse recovery time	I <sub>F</sub> = 10 mA, I <sub>R</sub> = 10 mA, I <sub>R</sub> = 1 mA, R <sub>L</sub> = 100 Ω	t <sub>rr</sub>			5	ns

### Note

<sup>(1)</sup> Pulse test; t<sub>p</sub> < 300 μs, θ < 2 %



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

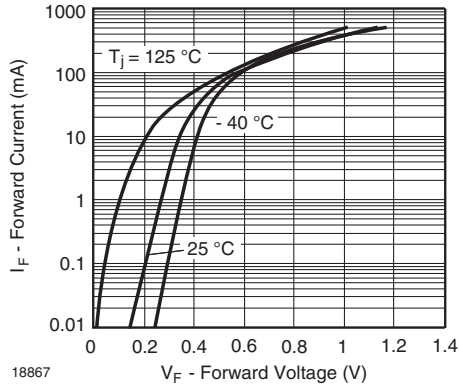


Fig. 1 - Typical Forward Current vs. Forward Voltage vs. Various Temperatures

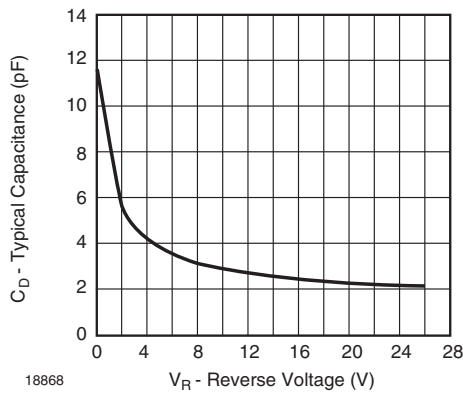


Fig. 2 - Typical Capacitance vs. Reverse Applied Voltage

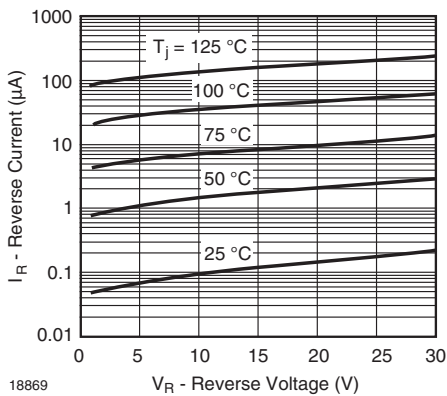


Fig. 3 - Typical Reverse Current vs. Reverse Voltage vs. Various Temperatures

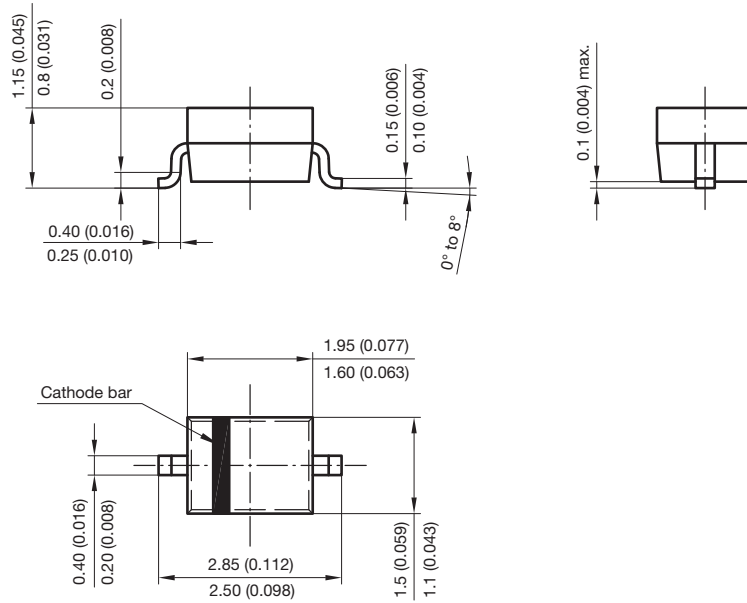


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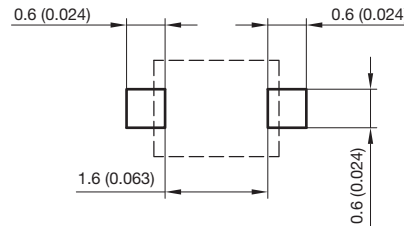
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**PACKAGE DIMENSIONS** in millimeters (inches): **SOD-323**



Foot print recommendation:



Document no.:S8-V-3910.02-001 (4)  
 Created - Date: 24.August.2004  
 Rev. 5 - Date: 23.Sept.2009  
 17443



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