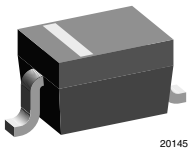
Small Signal Schottky Diode

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
- Lead (Pb)-free component
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



Mechanical Data

Case: SOD323 Plastic case
Weight: approx. 5.0 mg
Packaging Codes/Options:
GS18/10 k per 13" reel (8 mm tape), 10 k/box
GS08/3 k per 7" reel (8 mm tape), 15 k/box

Parts Table

Part	Ordering code	Type Marking	Remarks
BAT54WS	BAT54WS-GS18 or BAT54WS-GS08	L4	Tape and Reel

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	T_{amb} = 25 °C	I_F	200[1)]	mA
Repetitive peak forward current	T_{amb} = 25 °C	I_{FRM}	300[1)]	mA
Surge forward current	t_p < 1 s, T_{amb} = 25 °C	I_{FSM}	600[1)]	A
Power dissipation[1)]	T_{amb} = 25 °C	P_{tot}	150[1)]	mW

[1)] Valid provided that electrodes are kept at ambient temperature

Thermal Characteristics

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Thermal resistance junction to ambient air		R_{thJA}	650[1)]	K/W
Maximum junction temperature		T_j	125	°C
Storage temperature range		T_{stg}	- 65 to + 150	°C

[1)] Valid provided that electrodes are kept at ambient temperature

Electrical Characteristics

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Symbol	Min	Typ.	Max	Unit
Reverse breakdown voltage	tested with 100 µA pulses	$V_{(BR)R}$	30			V
Leakage current[2)]	Pulse test t_p < 300 µs, δ < 2 % at V_R = 25 V	I_R			2	µA
Forward voltage[2)]	Pulse test t_p < 300 µs, δ < 2 % at I_F = 0.1 mA	V_F			240	mV
	Pulse test t_p < 300 µs, δ < 2 % at I_F = 1 mA	V_F			320	mV
	Pulse test t_p < 300 µs, δ < 2 % at I_F = 10 mA	V_F			400	mV
	Pulse test t_p < 300 µs, δ < 2 % at I_F = 30 mA	V_F			500	mV
	Pulse test t_p < 300 µs, δ < 2 % at I_F = 100 mA	V_F			800	mV
Diode capacitance	V_F = 1 V, f = 1 MHz	C_{tot}			10	pF
Reverse recovery time	from I_F = 10 mA through I_R = 10 mA to I_R = 1 mA, R_L = 100 Ω	t_{rr}			5	ns

[2)] Pulse test: t_p < 300 µs, θ < 2 %

Typical Characteristics

T_{amb} = 25 °C, unless otherwise specified

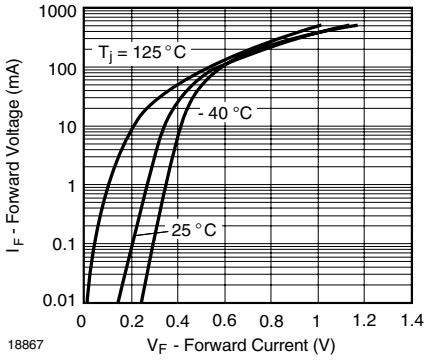


Figure 1. Typical Forward Voltage Forward Current at Various Temperatures

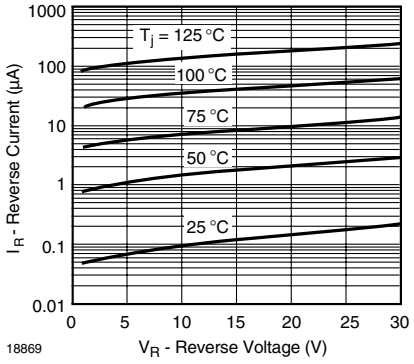


Figure 3. Typical Variation of Reverse Current at Various Temperatures

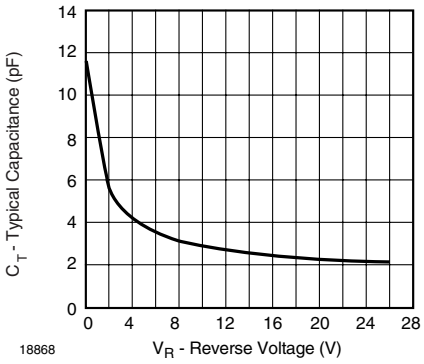
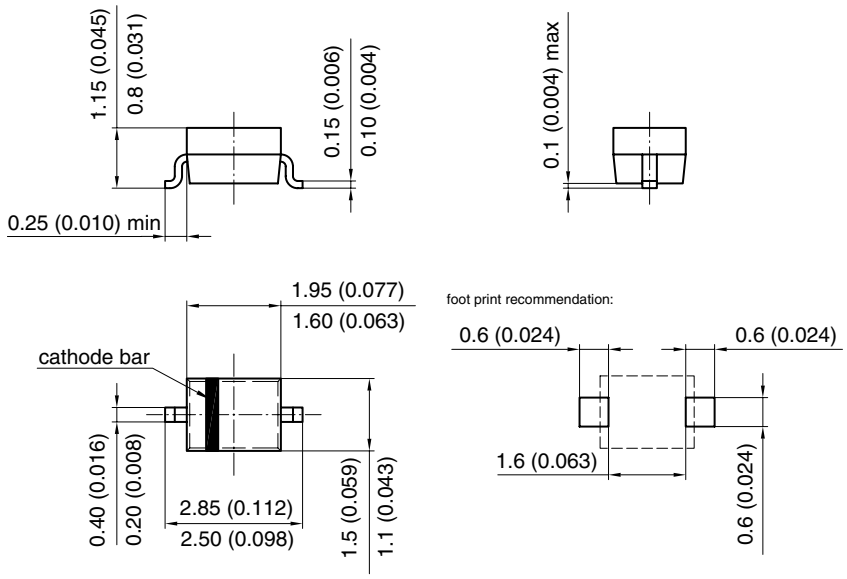


Figure 2. Typical Capacitance °C vs. Reverse Applied Voltage V_R

Package Dimensions in mm (Inches): SOD323



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Ozone Depleting Substances Policy Statement

It is the policy of Vishay Semiconductor GmbH to

1. Meet all present and future national and international statutory requirements.
2. Regularly and continuously improve the performance of our products, processes, distribution and operating systems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

Vishay Semiconductor GmbH has been able to use its policy of continuous improvements to eliminate the use of ODSs listed in the following documents.

1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively
2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA
3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

Vishay Semiconductor GmbH can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.

Vishay Semiconductor GmbH, P.O.B. 3535, D-74025 Heilbronn, Germany

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