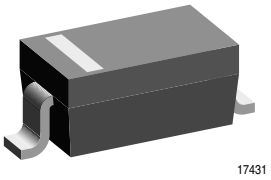
Small Signal Schottky Diode

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: SOD123 Plastic case
Weight: approx. 10.3 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
BAT54W-V	BAT54W-V-GS18 or BAT54W-V-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_p < 1 s, δ < 0.5, T_{amb} = 25 °C	I_{FRM}	300[1)]	mA
Surge forward current	t_p < 10 ms, T_{amb} = 25 °C	I_{FSM}	600[1)]	mA
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	$V_{(BR)}$	30			V
Leakage current[2)]	V_R = 25 V	I_R			2	µA
Forward voltage[2)]	I_F = 0.1 mA	V_F			240	mV
	I_F = 1 mA	V_F			320	mV
	I_F = 10 mA	V_F			400	mV
	I_F = 30 mA	V_F			500	mV
	I_F = 100 mA	V_F			800	mV
Diode capacitance	V_R = 1 V, f = 1 MHz	C_D			10	pF
Reverse recovery time	$I_F = I_R$ = 10 mA; 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

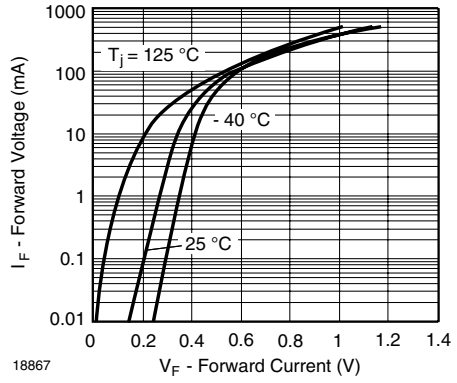


Figure 1. Typical Forward Voltage Forward Current at Various Temperatures

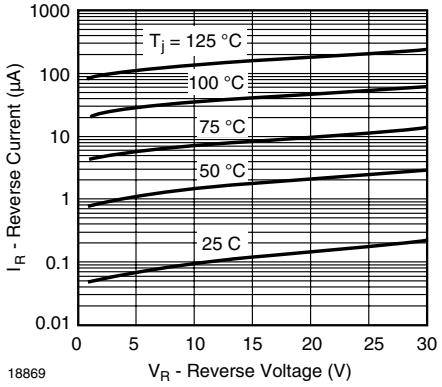


Figure 3. Typical Variation of Reverse Current at Various Temperatures

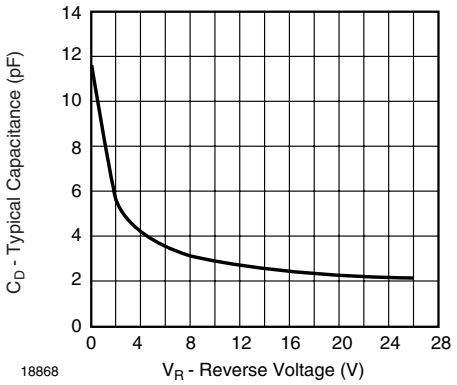


Figure 2. Typical Capacitance °C vs. Reverse Applied Voltage V_R

Package Dimensions in mm (Inches)