BAT54-V-G, BAT54A-V-G, BAT54C-V-G, BAT54S-V-G

Vishay Semiconductors

Small Signal Schottky Diodes, Single and Dual

Features

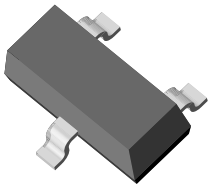
- These diodes feature very low turn-on voltage and fast switching
- These devices are protected by a PN junction guard ring against excessive voltage, such as electrostatic discharges
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC

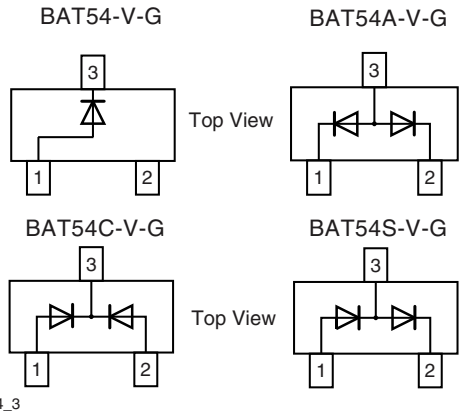
Pb-free

e3

RoHS COMPLIANT

GREEN (5-2008)**





18034_3

Mechanical Data

Case: SOT-23

Weight: approx. 8.1 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	Type marking	Remarks
BAT54-V-G	BAT54-V-G-18 or BAT54-V-G-08	L8	Tape and reel
BAT54A-V-G	BAT54A-V-G-18 or BAT54A-V-G-08	L46	Tape and reel
BAT54C-V-G	BAT54C-V-G-18 or BAT54C-V-G-08	L47	Tape and reel
BAT54S-V-G	BAT54S-V-G-18 or BAT54S-V-G-08	L48	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		I_F	200 [1]	mA
Repetitive peak forward current		I_{FRM}	300 [1]	mA
Surge forward current current	t_p < 1 s	I_{FSM}	600 [1]	mA
Power dissipation		P_{tot}	230	mW

Note

[1] Device on fiberglass substrate, see layout on next page.

Thermal Characteristics

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

Parameter	Test condition	Symbol	Value	Unit
Thermal resistance junction to ambient air		R_{thJA}	430 [1]	K/W
Junction temperature		T_j	125	°C
Storage temperature range		T_{stg}	- 65 to + 150	°C

Note

[1] Device on fiberglass substrate, see layout on next page.

** Please see document “Vishay Material Category Policy”: www.vishay.com/doc?99902

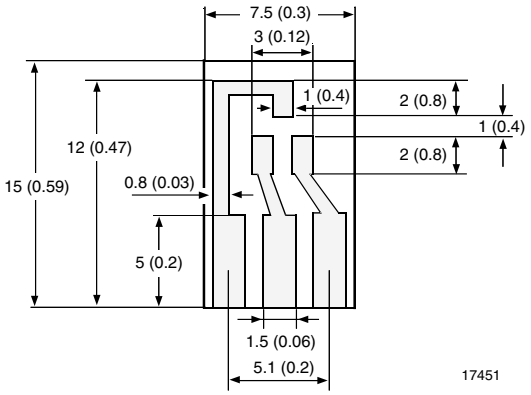
Electrical Characteristics

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

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

Layout for R_{thJA} test

Thickness:
Fiberglass 1.5 mm (0.059 in.)
Copper leads 0.3 mm (0.012 in.)



Typical Characteristics

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

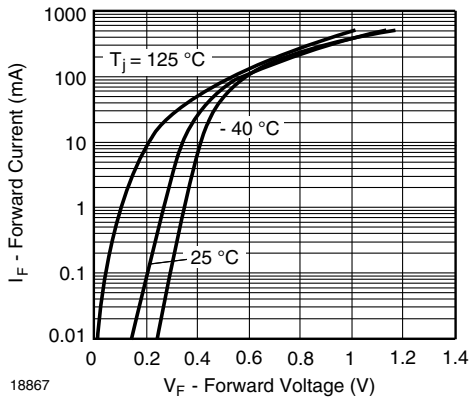


Figure 1. Typical Forward Voltage Forward Current vs. Various Temperatures

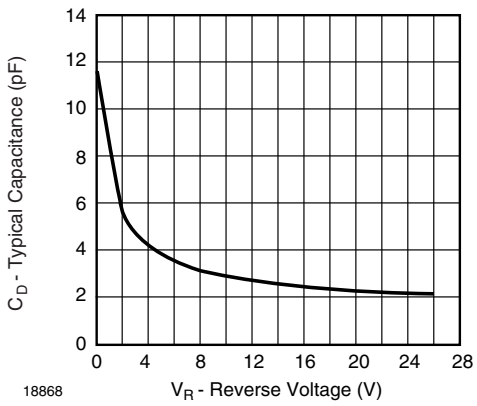


Figure 2. Diode Capacitance vs. Reverse Voltage V_R

For technical questions within your region, please contact one of the following:
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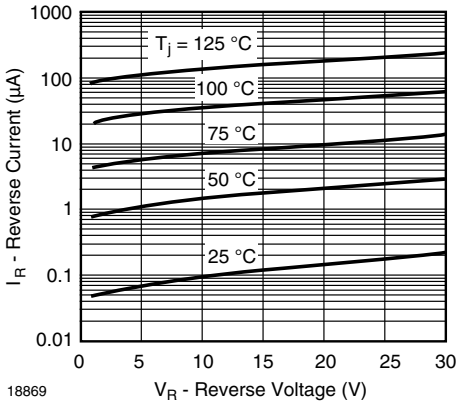
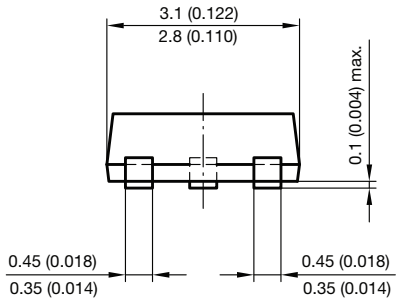
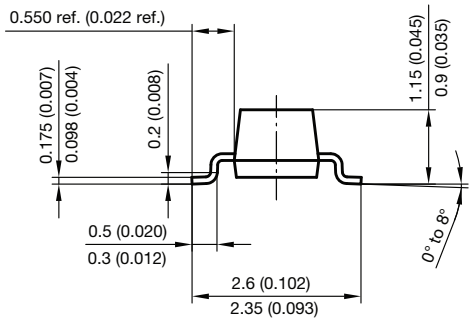
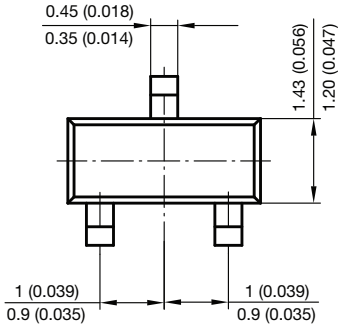


Figure 3. Typical Variation of Reverse Current vs. Various Temperatures

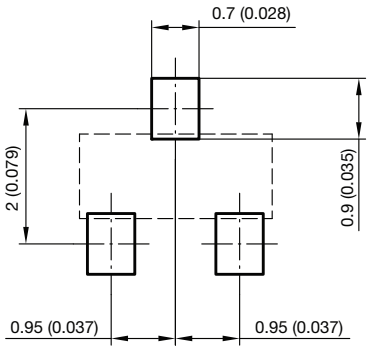
Package Dimensions in millimeters (inches): **SOT-23**







Foot print recommendation:



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