



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





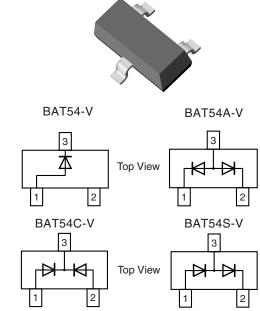
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC

Mechanical Data

Case: SOT-23

Weight: approx. 8.8 mg
Packaging codes/options:

GS18/10K per 13" reel (8 mm tape), 10K/box GS08/3K per 7" reel (8 mm tape), 15K/box



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Parts Table

Part	Ordering code	Type marking	Remarks	
BAT54-V	BAT54-V-GS18 or BAT54-V-GS08	L4	Tape and reel	
BAT54A-V	BAT54A-V-GS18 or BAT54A-V-GS08	L42	Tape and reel	
BAT54C-V	BAT54C-V-GS18 or BAT54C-V-GS08	L43	Tape and reel	
BAT54S-V	BAT54S-V-GS18 or BAT54S-V-GS08	L44	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	

Vote

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		Tj	125	°C	
Storage temperature range		T _{stg}	- 65 to + 150	°C	

Note

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For technical questions within your region, please contact one of the following: DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com

¹⁾ Device on fiberglass substrate, see layout on next page.

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BAT54-V, **BAT54A-V**, **BAT54C-V**, **BAT54S-V**

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Electrical Characteristics

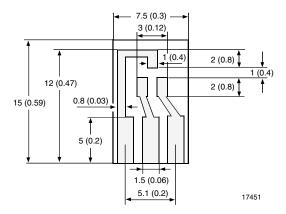
T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Symbol	Min.	Тур.	Max.	Unit
Reverse Breakdown voltage	$I_R = 100 \mu A \text{ (pulsed)}$	$V_{(BR)}$	30			V
Leakage current	Pulse test t_p < 300 μ s, δ < 2 % at V_R = 25 V	I _R			2	μΑ
	I_F = 0.1 mA, t_p < 300 μ s, δ < 2 %	V _F			240	mV
	$I_F = 1 \text{ mA}, t_p < 300 \mu s, \delta < 2 \%$	V _F			320	mV
Forward voltage	I_F = 10 mA, t_p < 300 μ s, δ < 2 %	V_{F}			400	mV
	$I_F = 30 \text{ mA}, t_p < 300 \mu\text{s}, \delta < 2 \%$	V_{F}			500	mV
	$I_F = 100 \text{ mA}, t_p < 300 \mu\text{s}, \delta < 2 \%$	V_{F}			800	mV
Diode capacitance	V _R = 1 V, f = 1 MHz	C _D			10	pF
Reverse recovery time	$I_F = 10 \text{ mA to } I_R = 10 \text{ mA},$ $I_R = 1 \text{ mA}, R_L = 100 \Omega$	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

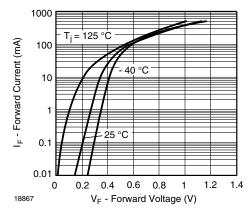


Figure 1. Typical Forward Voltage Forward Current vs. Various Temperatures

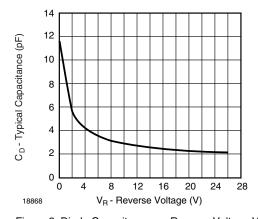


Figure 2. Diode Capacitance vs. Reverse Voltage \mathbf{V}_{R}



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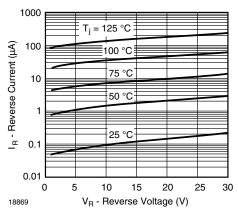
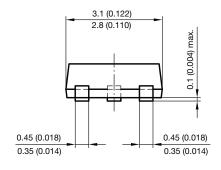
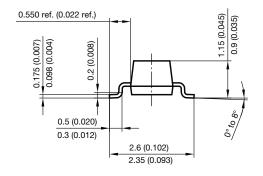
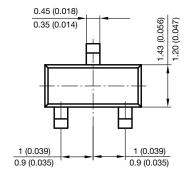


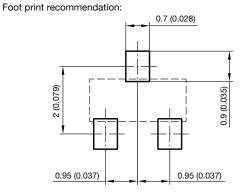
Figure 3. Typical Variation of Reverse Current vs. Various Temperatures

Package Dimensions in millimeters (inches): SOT-23









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