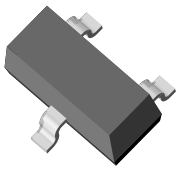
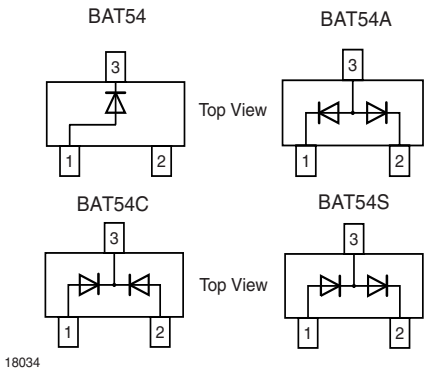
Small Signal Schottky Diodes, Single & Dual

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.





Mechanical Data

Case: SOT-23 Plastic case

Weight: approx. 8.8 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	Marking	Remarks
BAT54	BAT54-GS18 or BAT54-GS08	L4	Tape and Reel
BAT54A	BAT54A-GS18 or BAT54A-GS08	L42	Tape and Reel
BAT54C	BAT54C-GS18 or BAT54C-GS08	L43	Tape and Reel
BAT54S	BAT54S-GS18 or BAT54S-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

[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 ambiant air		R_{thJA}	430[1)]	°C/W
Junction temperature		$T_j = T_{stg}$	- 65 to + 150	°C
Storage temperature range		T_S	- 65 to + 150	°C

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

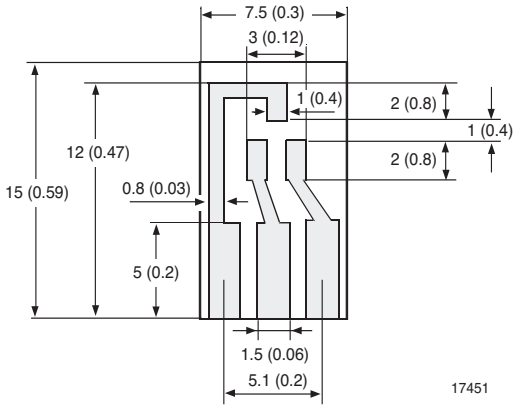
Electrical Characteristics

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

Parameter	Test condition	Symbol	Min	Typ.	Max	Unit
Reverse Breakdown voltage	I_R = 100 μA pulses	$V_{(BR)}$	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			1000	mV
Diode capacitance	V_R = 1 V, f = 1 MHz	C_{tot}			10	pF
Reverse recovery time	I_F = 10 mA through I_R = 10 mA to I_{rr} = 1mA, 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 (Tamb = 25 °C unless otherwise specified)

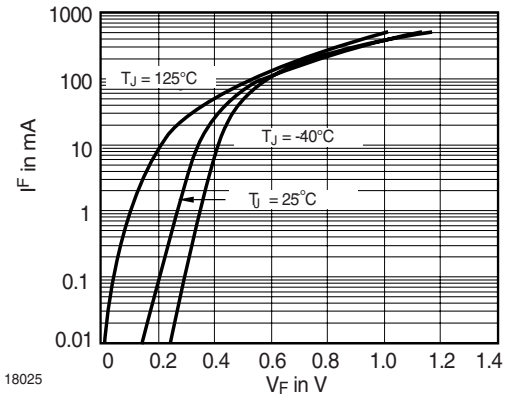


Figure 1. Typical Forward Voltage Forward Current at Various Temperatures

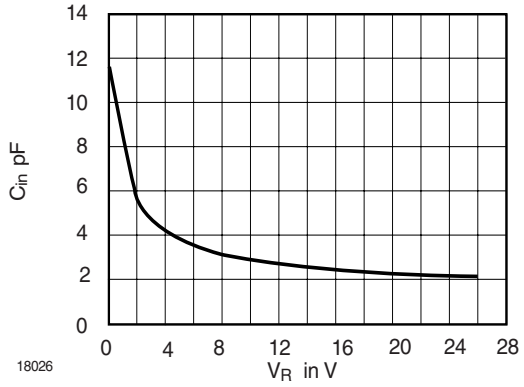


Figure 2. Typical Capacitance °C vs. Reverse Applied Voltage V_R

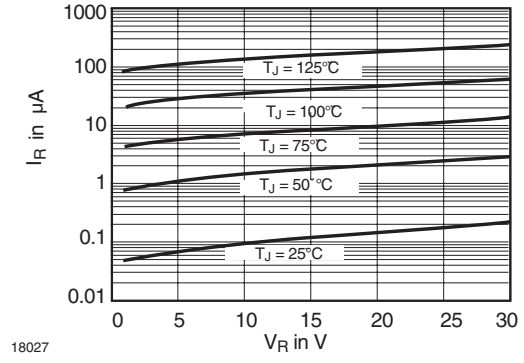


Figure 3. Typical Variation of Reverse Current at Various Temperatures

Package Dimensions in mm (Inches)