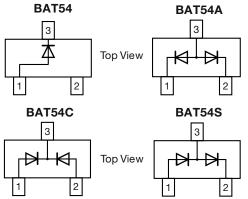
BAT54, BAT54A, BAT54C, BAT54S

**Vishay Semiconductors** 

# Small Signal Schottky Diodes, Single and Dual



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### DESIGN SUPPORT TOOLS click logo to get started



#### PARTS TABLE PART **ORDERING CODE CIRCUIT CONFIGURATION TYPE MARKING** REMARKS BAT54-E3-08 or BAT54-E3-18 BAT54 L4 Single BAT54-HE3-08 or BAT54-HE3-18 BAT54A-E3-08 or BAT54A-E3-18 BAT54A Common anode L42 BAT54A-HE3-08 or BAT54A-HE3-18 Tape and reel BAT54C-E3-08 or BAT54C-E3-18 Common cathode BAT54C L43 BAT54C-HE3-08 or BAT54C-HE3-18 BAT54S-E3-08 or BAT54S-E3-18 BAT54S Dual serial L44 BAT54S-HE3-08 or BAT54S-HE3-18

ABSOLUTE MAXIMUM RATINGS (T <sub>amb</sub> = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT			
Repetitive peak reverse voltage		V <sub>RRM</sub>	30	V			
Forward continuous current <sup>(1)</sup>		I <sub>F</sub>	200	mA			
Repetitive peak forward current (1)		I <sub>FRM</sub>	300	mA			
Surge forward current <sup>(1)</sup>	t <sub>p</sub> < 1 s	I <sub>FSM</sub>	600	mA			
Power dissipation		P <sub>tot</sub>	230	mW			

#### Note

<sup>(1)</sup> Device on fiberglass substrate, see layout on next page

<b>THERMAL CHARACTERISTICS</b> ( $T_{amb} = 25 \text{ °C}$ , unless otherwise specified)								
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT				
Thermal resistance junction to ambient air	Device on fiberglass substrate, see layout on next page	R <sub>thJA</sub>	430	K/W				
Junction temperature		Тj	125	°C				
Storage temperature range		T <sub>stg</sub>	-65 to +150	°C				
Operating temperature range		T <sub>op</sub>	-55 to +125	°C				

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- RoHS COMPLIANT
- electrostatic discharges AEC-Q101 gualified available
- Base P/N-E3 RoHS-compliant, commercial grade

These diodes feature very low turn-on voltage

• These devices are protected by a PN junction guard ring against excessive voltage, such as

- Base P/N-HE3 RoHS-compliant, AEC-Q101 qualified
- · Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

### **MECHANICAL DATA**

Case: SOT-23

**FEATURES** 

and fast switching

Weight: approx. 8.8 mg

#### Packaging codes/options:

18/10K per 13" reel (8 mm tape), 10K/box 08/3K per 7" reel (8 mm tape), 15K/box



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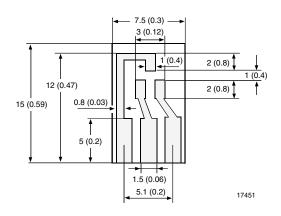
## BAT54, BAT54A, BAT54C, BAT54S

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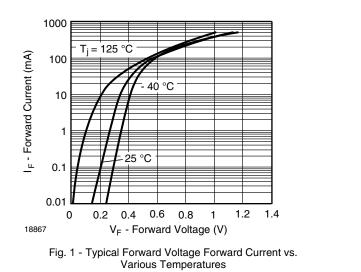
ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)								
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT		
Reserve breakdown voltage	I <sub>R</sub> = 100 μA (pulsed)	V <sub>(BR)</sub>	30			V		
Leakage current	Pulsed test t <sub>p</sub> < 300 µs, $\delta$ <2 % at V <sub>R</sub> = 25 V	I <sub>R</sub>			2	μA		
Forward voltage	$I_F$ = 0.1 mA, $t_p$ < 300 µs, $\delta$ < 2 %	V <sub>F</sub>			240	mV		
	$I_F$ = 1 mA, $t_p$ < 300 µs, $\delta$ < 2 %	VF			320	mV		
	$I_F$ = 10 mA, $t_p$ < 300 µs, $\delta$ < 2 %	V <sub>F</sub>			400	mV		
	$I_{F}$ = 30 mA, $t_{p}$ < 300 µs, $\delta$ < 2 %	V <sub>F</sub>			500	mV		
	$I_F$ = 100 mA, $t_p$ < 300 $\mu s,  \delta$ < 2 $\%$	VF			800	mV		
Diode capacitance	V <sub>R</sub> = 1 V, f = 1 MHz	CD			10	pF		
Reserve recovery time	$I_F$ = 10 mA to $I_R$ = 10 mA, $i_R$ = 1 mA, $R_L$ = 100 $\Omega$	t <sub>rr</sub>			5	ns		

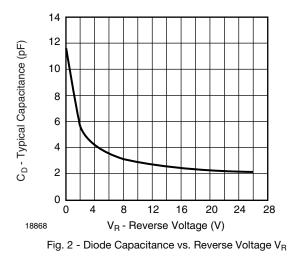
### LAYOUT FOR R<sub>thJA</sub> TEST

Thickness: Fiberglas 15 mm (0.059") Copper leads 0.3 mm (0.012")



TYPICAL CHARACTERISTICS (Tamb = 25 °C, unless otherwise specified)





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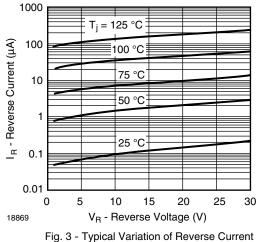
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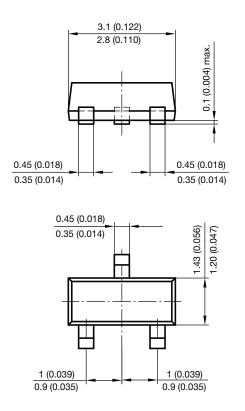
### BAT54, BAT54A, BAT54C, BAT54S

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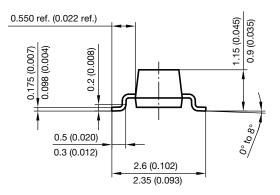


vs. Various Temperatures

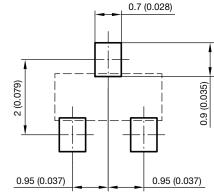
#### PACKAGE DIMENSIONS in millimeters (inches): SOT-23



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Foot print recommendation:



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