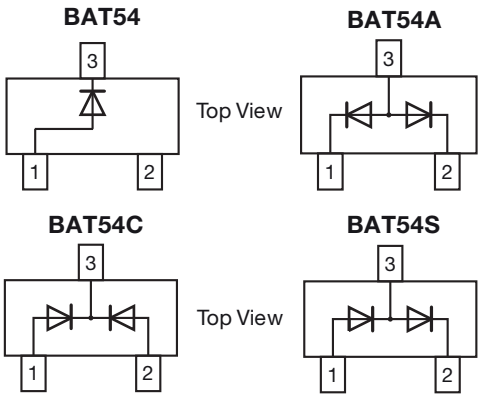
Small Signal Schottky Diodes, Single and Dual



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
- Base P/N-E3 - RoHS-compliant, commercial grade
- Base P/N-HE3 - RoHS-compliant, AEC-Q101 qualified
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

Pb-free

e3

RoHS COMPLIANT

MECHANICAL DATA

Case: SOT-23

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

PARTS TABLE

PART	ORDERING CODE	INTERNAL CONSTRUCTION	TYPE MARKING	REMARKS
BAT54	BAT54-E3-08 or BAT54-E3-18	Single diode	L4	Tape and reel
	BAT54-HE3-08 or BAT54-HE3-18			
BAT54A	BAT54A-E3-08 or BAT54A-E3-18	Dual diodes common anode	L42	
	BAT54A-HE3-08 or BAT54A-HE3-18			
BAT54C	BAT54C-E3-08 or BAT54C-E3-18	Dual diodes common cathode	L43	
	BAT54C-HE3-08 or BAT54C-HE3-18			
BAT54S	BAT54S-E3-08 or BAT54S-E3-18	Dual diodes serial	L44	
	BAT54S-HE3-08 or BAT54S-HE3-18			

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 (1)		I_F	200	mA
Repetitive peak forward current (1)		I_{FRM}	300	mA
Surge forward current (1)	t_p < 1 s	I_{FSM}	600	mA
Repetitive peak forward current		P_{tot}	230	mW

Note

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

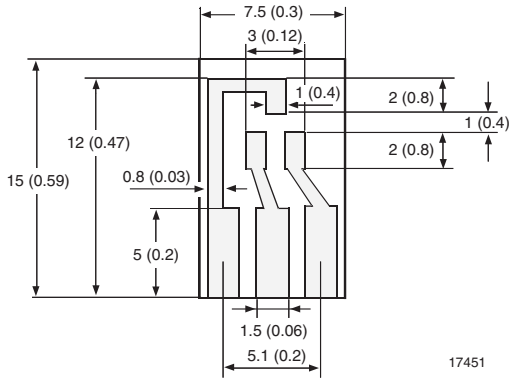
THERMAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air	Device on fiberglass substrate, see layout on next page	R_{thJA}	430	K/W
Junction temperature		T_j	125	°C
Storage temperature range		T_{stg}	- 65 to + 150	°C
Operating temperature range		T_{op}	- 55 to + 125	°C

ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)						
PARAMETER	**TEST CONDITION**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Reserve breakdown voltage	I_R = 100 µA (pulsed)	$V_{(BR)}$	30			V
Leakage current	Pulsed 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
Reserve 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:
Fiberglas 15 mm (0.059")
Copper leads 0.3 mm (0.012")



TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

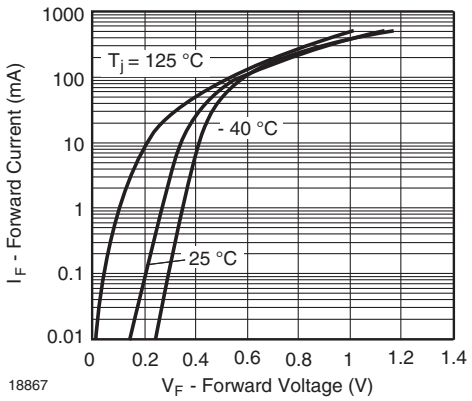


Fig. 1 - Typical Forward Voltage Forward Current vs. Various Temperatures

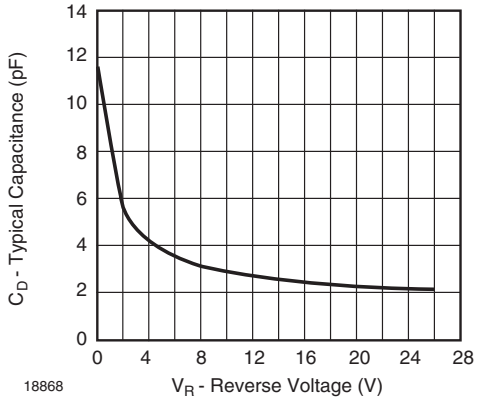


Fig. 2 - Diode Capacitance vs. Reverse Voltage V_R

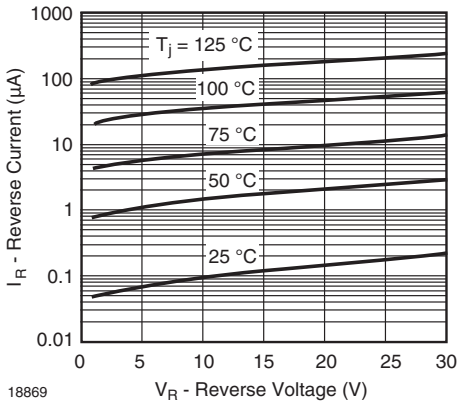
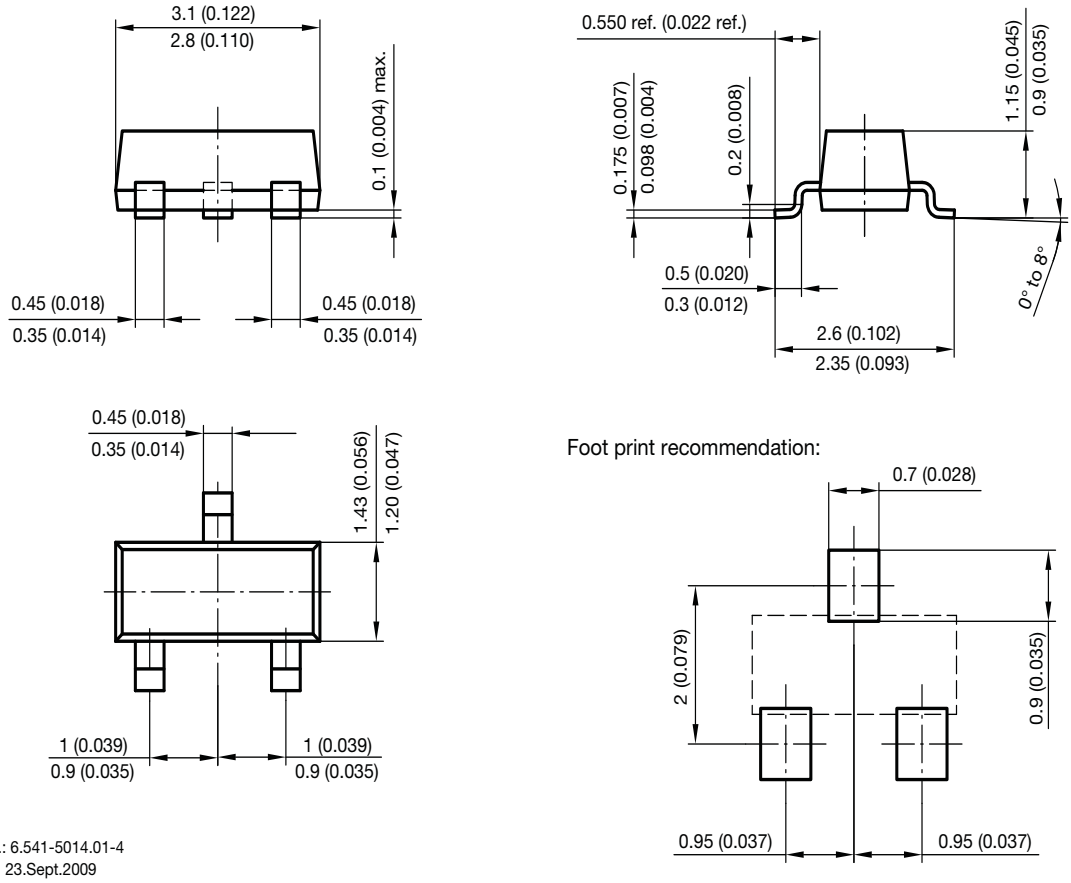


Fig. 3 - Typical Variation of Reverse Current vs. Various Temperatures

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



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