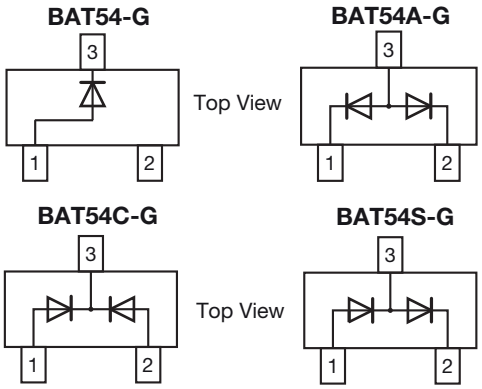
# BAT54-G, BAT54A-G, BAT54C-G, BAT54S-G

## 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 guardring against excessive voltage, such as electrostatic discharges
- AEC-Q101 qualified available (part number on request)
- Base P/N-G3 - green, commercial grade
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free
e3
RoHS COMPLIANT
HALOGEN FREE
GREEN (5-2008)

### 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

**DESIGN SUPPORT TOOLS** click logo to get started

3D Models Available

**PARTS TABLE**

| PART | ORDERING CODE | CIRCUIT CONFIGURATION | TYPE MARKING | REMARKS |
|---|---|---|---|---|
| BAT54-G | BAT54-G3-08 or BAT54-G3-18 | Single | L8 | Tape and reel |
| BAT54A-G | BAT54A-G3-08 or BAT54A-G3-18 | Common anode | L46 | |
| BAT54C-G | BAT54C-G3-08 or BAT54C-G3-18 | Common cathode | L47 | |
| BAT54S-G | BAT54S-G3-08 or BAT54S-G3-18 | Dual serial | L48 | |

**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 |
| 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 (1) | | $R_{thJA}$ | 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 |

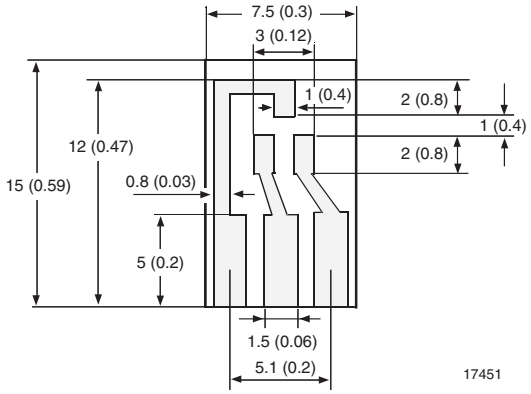
**Note**

(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 (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 inches)
Copper leads 0.3 mm (0.012 inches)




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

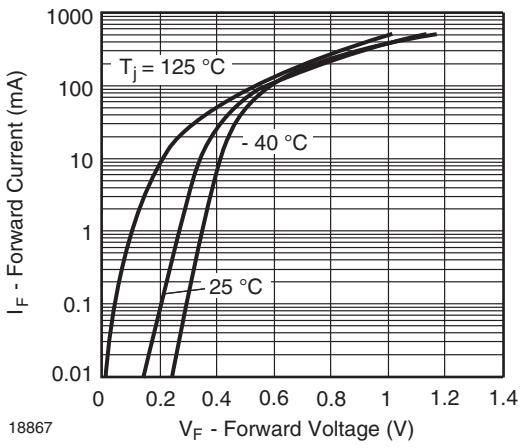



Fig. 1 - Typical Forward Voltage Forward Current vs. Various Temperatures

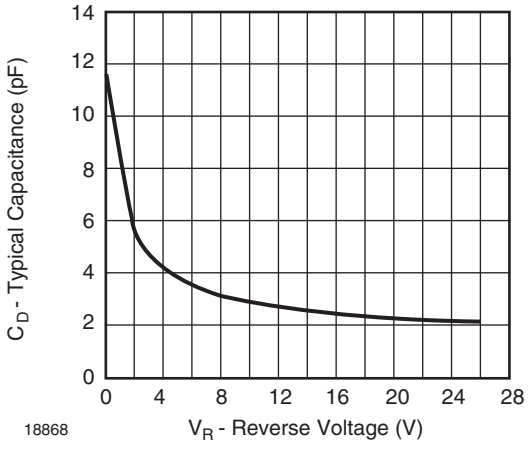



Fig. 2 - Diode Capacitance vs. Reverse Voltage $V_R$

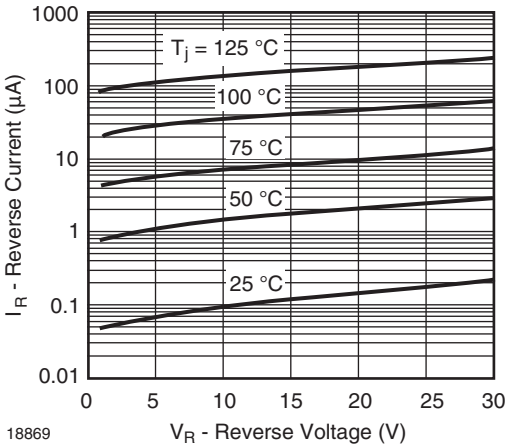
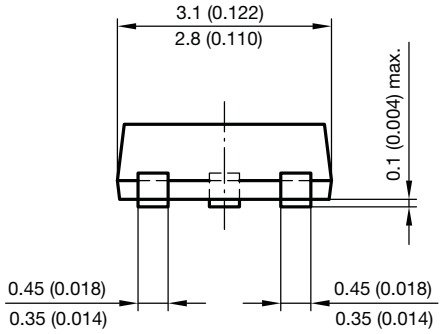
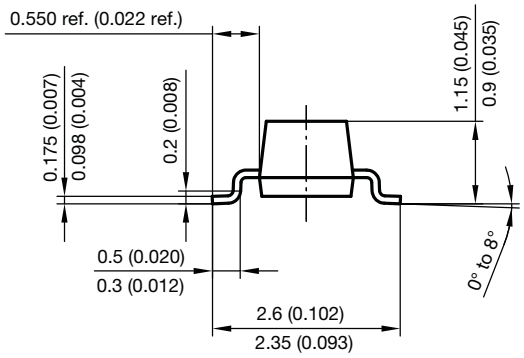
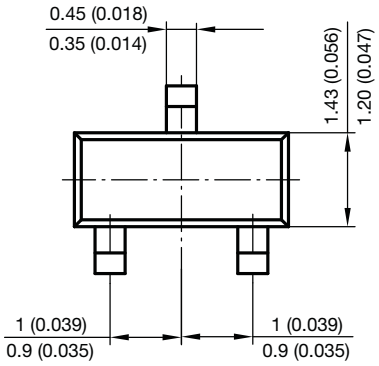



Fig. 3 - Typical Variation of Reverse Current vs. Various Temperatures

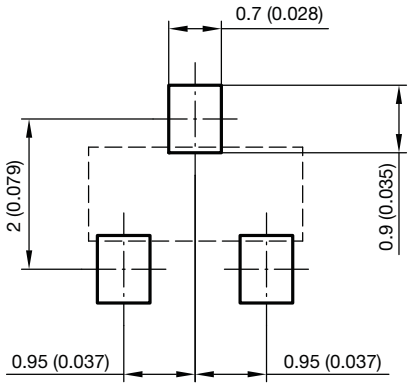
**PACKAGE DIMENSIONS** in millimeters (inches): **SOT-23**




Foot print recommendation:




Document no.: 6.541-5014.01-4
Rev. 8 - Date: 23.Sept.2009
17418

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