# Excellent Integrated System Limited

Stocking Distributor

Click to view price, real time Inventory, Delivery & Lifecycle Information:

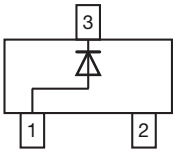
Vishay Semiconductor/Diodes Division
BAT54A-G3-18

For any questions, you can email us directly:
sales@integrated-circuit.com

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

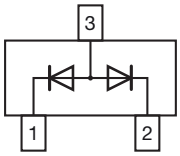
## Small Signal Schottky Diodes, Single and Dual

BAT54-G

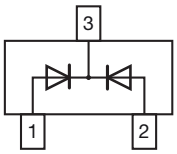



Top View

BAT54A-G

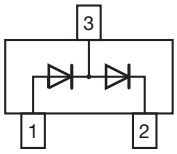



BAT54C-G




Top View

BAT54S-G




### 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
- 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

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

**PARTS TABLE**

| PART | ORDERING CODE | INTERNAL CONSTRUCTION | TYPE MARKING | REMARKS |
|---|---|---|---|---|
| BAT54-G | BAT54-G3-08 or BAT54-G3-18 | Single diode | L8 | Tape and reel |
| BAT54A-G | BAT54A-G3-08 or BAT54A-G3-18 | Dual diodes common anode | L46 | |
| BAT54C-G | BAT54C-G3-08 or BAT54C-G3-18 | Dual diodes common cathode | L47 | |
| BAT54S-G | BAT54S-G3-08 or BAT54S-G3-18 | Dual diodes 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 |

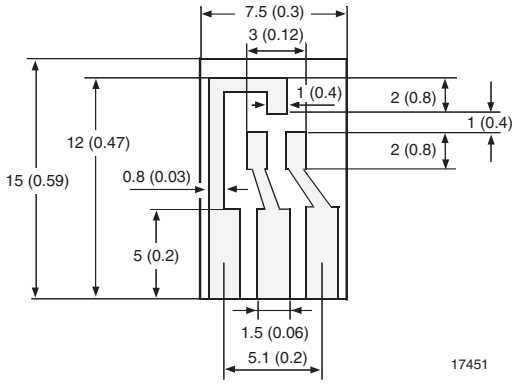
**Note**

(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)

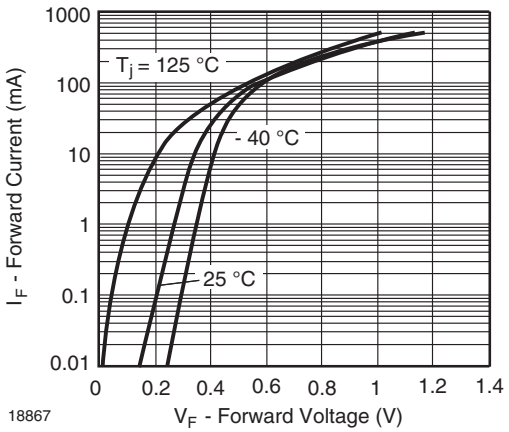



Fig. 1 - Typical Forward Voltage Forward Current vs. Various Temperatures

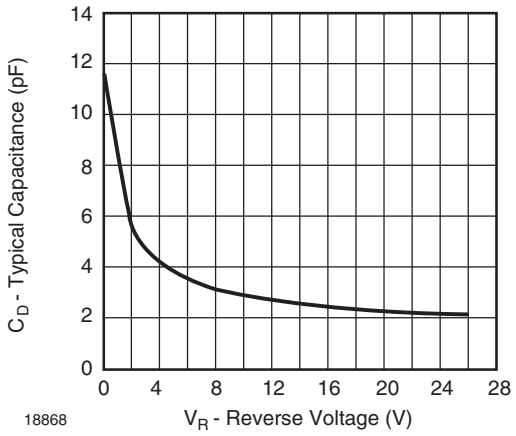



Fig. 2 - Diode Capacitance vs. Reverse Voltage $V_R$

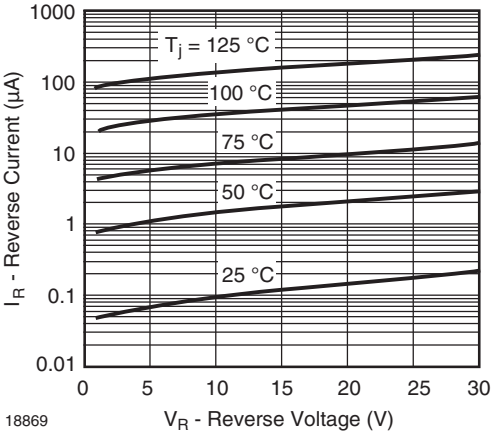
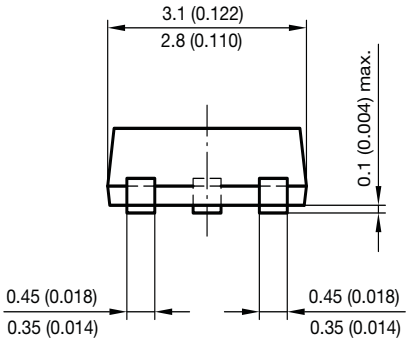
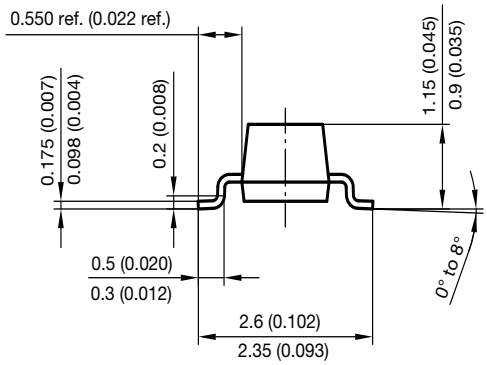
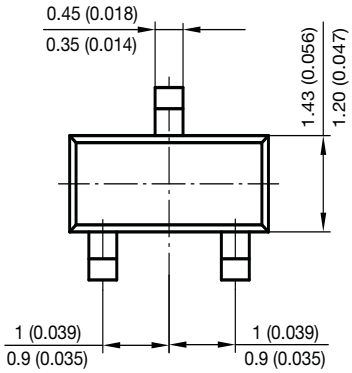



Fig. 3 - Typical Variation of Reverse Current vs. Various Temperatures

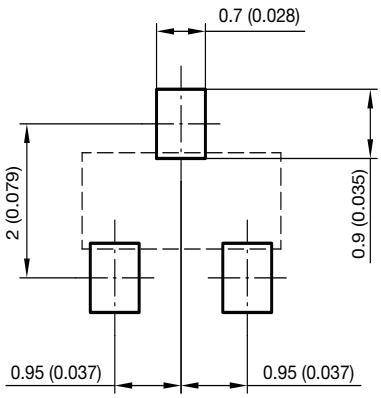
**PACKAGE DIMENSIONS** in millimeters (inches): **SOT-23**




Foot print recommendation:




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

# Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, “Vishay”), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay’s knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer’s responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer’s technical experts. Product specifications do not expand or otherwise modify Vishay’s terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.