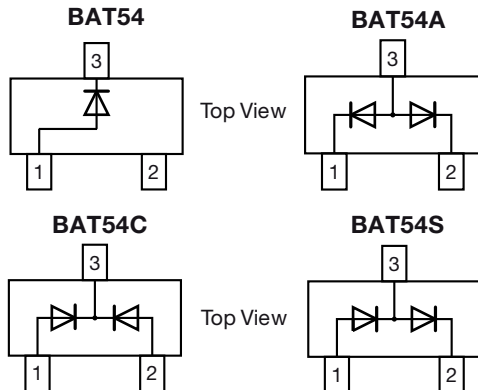


Small Signal Schottky Diodes, Single and Dual



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 available
- 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


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

DESIGN SUPPORT TOOLS click logo to get started


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

| ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, 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⁾ | $t_p < 1\text{ s}$ | I_{FSM} | 600 | mA |
| Power dissipation | | P_{tot} | 230 | mW |

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

| THERMAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, 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_{thJA} | 430 | K/W |
| Junction temperature | | T_j | 125 | $^{\circ}\text{C}$ |
| Storage temperature range | | T_{stg} | -65 to +150 | $^{\circ}\text{C}$ |
| Operating temperature range | | T_{op} | -55 to +125 | $^{\circ}\text{C}$ |

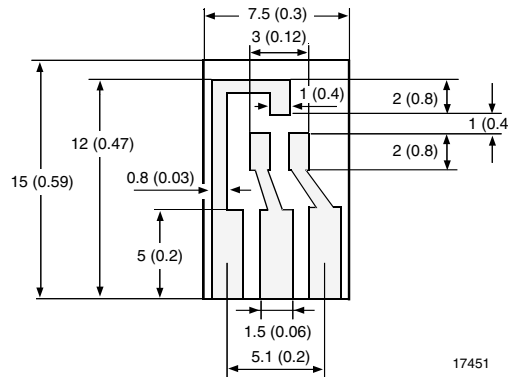
| ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified) | | | | | | |
|--|---|------------|------|------|------|---------------|
| PARAMETER | TEST CONDITION | SYMBOL | MIN. | TYP. | MAX. | UNIT |
| Reverse breakdown voltage | $I_R = 100\text{ }\mu\text{A}$ (pulsed) | $V_{(BR)}$ | 30 | | | V |
| Leakage current | Pulsed test $t_p < 300\text{ }\mu\text{s}$, $\delta < 2\%$ at $V_R = 25\text{ V}$ | I_R | | | 2 | μA |
| Forward voltage | $I_F = 0.1\text{ mA}$, $t_p < 300\text{ }\mu\text{s}$, $\delta < 2\%$ | V_F | | | 240 | mV |
| | $I_F = 1\text{ mA}$, $t_p < 300\text{ }\mu\text{s}$, $\delta < 2\%$ | V_F | | | 320 | mV |
| | $I_F = 10\text{ mA}$, $t_p < 300\text{ }\mu\text{s}$, $\delta < 2\%$ | V_F | | | 400 | mV |
| | $I_F = 30\text{ mA}$, $t_p < 300\text{ }\mu\text{s}$, $\delta < 2\%$ | V_F | | | 500 | mV |
| | $I_F = 100\text{ mA}$, $t_p < 300\text{ }\mu\text{s}$, $\delta < 2\%$ | V_F | | | 800 | mV |
| Diode capacitance | $V_R = 1\text{ V}$, $f = 1\text{ MHz}$ | C_D | | | 10 | pF |
| Reverse recovery time | $I_F = 10\text{ mA}$ to $I_R = 10\text{ mA}$, $i_R = 1\text{ mA}$, $R_L = 100\text{ }\Omega$ | t_{rr} | | | 5 | ns |

LAYOUT FOR R_{thJA} TEST

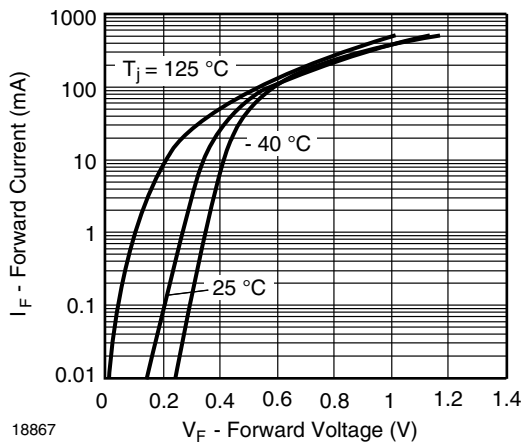
Thickness:

Fiberglass 15 mm (0.059")

Copper leads 0.3 mm (0.012")



17451

TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


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



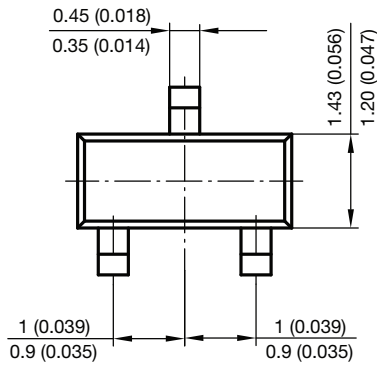
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 Fig. 2 - Diode Capacitance vs. Reverse Voltage V_R



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

PACKAGE DIMENSIONS in millimeters (inches): SOT-23



Foot print recommendation:



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 Rev. 8 - Date: 23.Sept.2009
 17418



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