



Small Signal Schottky Diode



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

DESIGN SUPPORT TOOLS

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MECHANICAL DATA

Case: SOD-123

Weight: approx. 10.3 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 | CIRCUIT CONFIGURATION | TYPE MARKING | REMARKS |
| BAT54W | BAT54W-E3-08 or BAT54W-E3-18 | Single | L4 | Tape and reel |
| | BAT54W-HE3-08 or BAT54W-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⁾ | $t_p < 1\text{ s}, \delta < 0.5$ | I_{FRM} | 300 | mA |
| Surge forward current ⁽¹⁾ | $t_p = 10\text{ ms}$ | I_{FSM} | 600 | mA |
| Power dissipation ⁽¹⁾ | | P_{tot} | 150 | mW |

Note

⁽¹⁾ Valid provided that electrodes are kept at ambient temperature

| THERMAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified) | | | | |
|--|----------------|------------|-------------|--------------------|
| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
| Thermal resistance junction to ambient air ⁽¹⁾ | | R_{thJA} | 650 | K/W |
| Maximum 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 | $^{\circ}\text{C}$ |

Note

⁽¹⁾ Valid provided that electrodes are kept at ambient temperature

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

Note

⁽¹⁾ Pulse test: $t_p < 300\text{ }\mu\text{s}$, $\theta < 2\%$

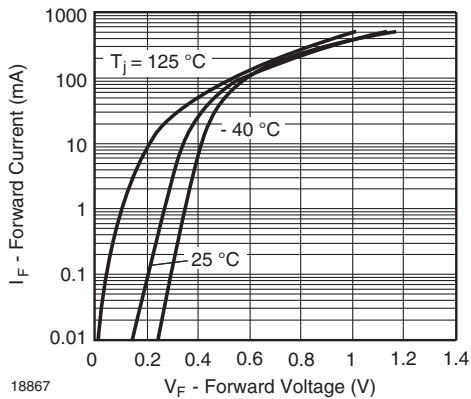
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


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

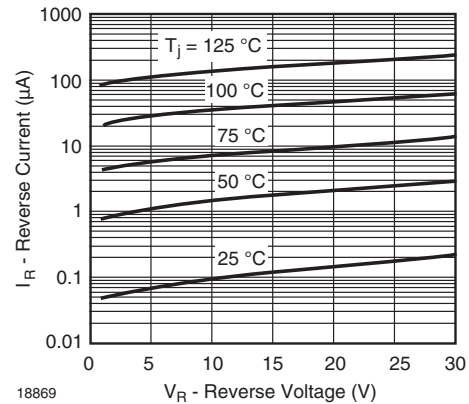


Fig. 3 - Typical Reverse Current vs. Reverse Voltage vs. Various Temperatures

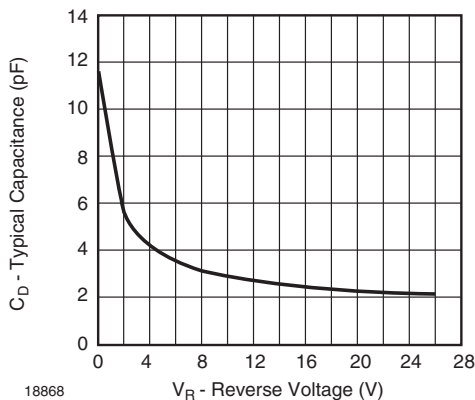
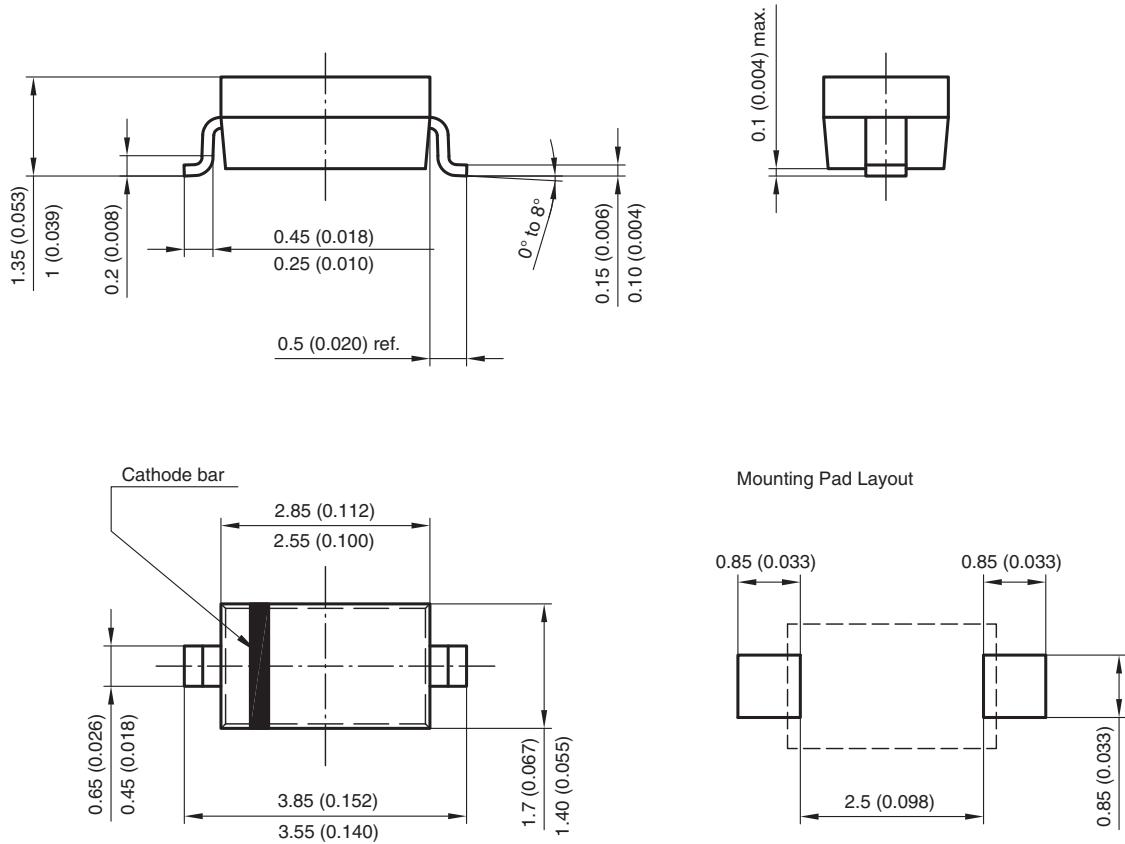


Fig. 2 - Typical Capacitance vs. Reverse Applied Voltage



PACKAGE DIMENSIONS in millimeters (inches): **SOD-123**



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