



Small Signal Schottky Diode



DESIGN SUPPORT TOOLS

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MECHANICAL DATA

Case: SOD-123

Weight: approx. 9.4 mg

Packaging codes/options:

18/10K per 13" reel (8 mm tape), 10K/box

08/3K per 7" reel (8 mm tape), 15K/box

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
- For general purpose applications
- 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



PARTS TABLE

| PART | ORDERING CODE | CIRCUIT CONFIGURATION | TYPE MARKING | REMARKS |
|----------|------------------------------|-----------------------|--------------|---------------|
| BAT42W-G | BAT42W-G3-08 or BAT42W-G3-18 | Single | LC | Tape and reel |
| BAT43W-G | BAT43W-G3-08 or BAT43W-G3-18 | Single | LD | |

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25^{\circ}\text{C}$, 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} | 500 | mA |
| Surge forward current ⁽¹⁾ | $t_p < 10\text{ ms}$ | I_{FSM} | 4 | A |
| Power dissipation ⁽¹⁾ | $T_{amb} = 65^{\circ}\text{C}$ | P_{tot} | 200 | mW |

Note

⁽¹⁾ Valid provided that electrodes are kept at ambient temperatureTHERMAL CHARACTERISTICS ($T_{amb} = 25^{\circ}\text{C}$, unless otherwise specified)

| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
|---|----------------|------------|-------------|--------------------|
| Thermal resistance junction to ambient air ⁽¹⁾ | | R_{thJA} | 300 | K/W |
| Junction temperature | | T_j | 125 | $^{\circ}\text{C}$ |
| Operating temperature range | | T_{op} | -55 to +125 | $^{\circ}\text{C}$ |
| Storage temperature range | | T_{stg} | -55 to +150 | $^{\circ}\text{C}$ |

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 | PART | SYMBOL | MIN. | TYP. | MAX. | UNIT |
| Reverse breakdown voltage | $I_R = 100\text{ }\mu\text{A}$ (pulsed) | | $V_{(BR)}$ | 30 | | | V |
| Leakage current ⁽¹⁾ | $V_R = 25\text{ V}$ | | I_R | | | 0.5 | μA |
| | $V_R = 25\text{ V}, T_j = 100\text{ }^{\circ}\text{C}$ | | I_R | | | 100 | μA |
| Forward voltage ⁽¹⁾ | $I_F = 200\text{ mA}$ | | V_F | | | 1000 | mV |
| | $I_F = 10\text{ mA}$ | BAT42W-G | V_F | | | 400 | mV |
| | $I_F = 50\text{ mA}$ | BAT42W-G | V_F | | | 650 | mV |
| | $I_F = 2\text{ mA}$ | BAT43W-G | V_F | 260 | | 330 | mV |
| | $I_F = 15\text{ mA}$ | BAT43W-G | V_F | | | 450 | mV |
| Diode capacitance | $V_R = 1\text{ V}, f = 1\text{ MHz}$ | | C_D | | 7 | | pF |
| Reverse 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; $t_p \leq 300\text{ }\mu\text{s}$, $t_p/T < 0.02$

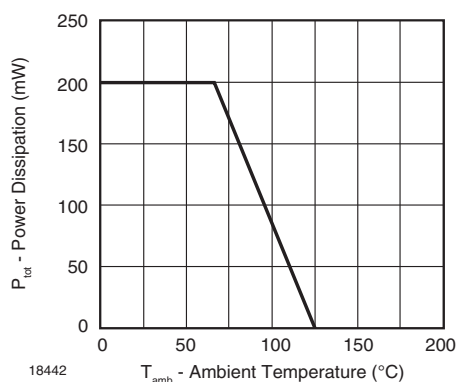
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

Fig. 1 - Admissible Power Dissipation vs. Ambient Temperature

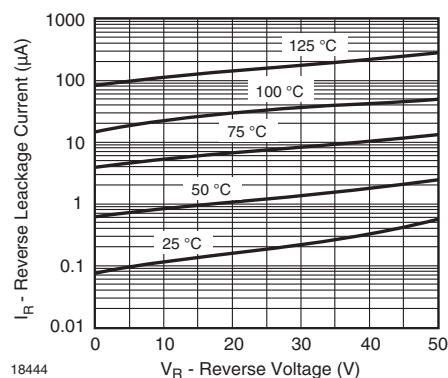


Fig. 3 - Typical Reverse Characteristics

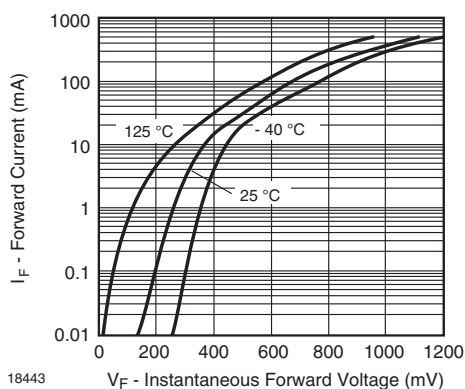


Fig. 2 - Typical Forward Characteristics

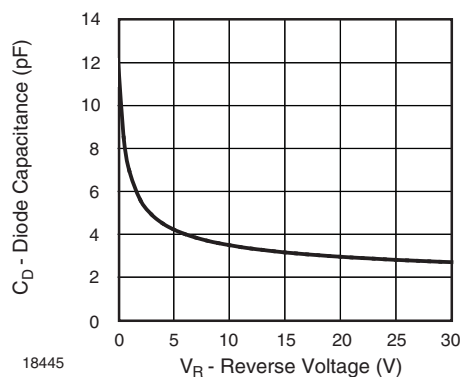
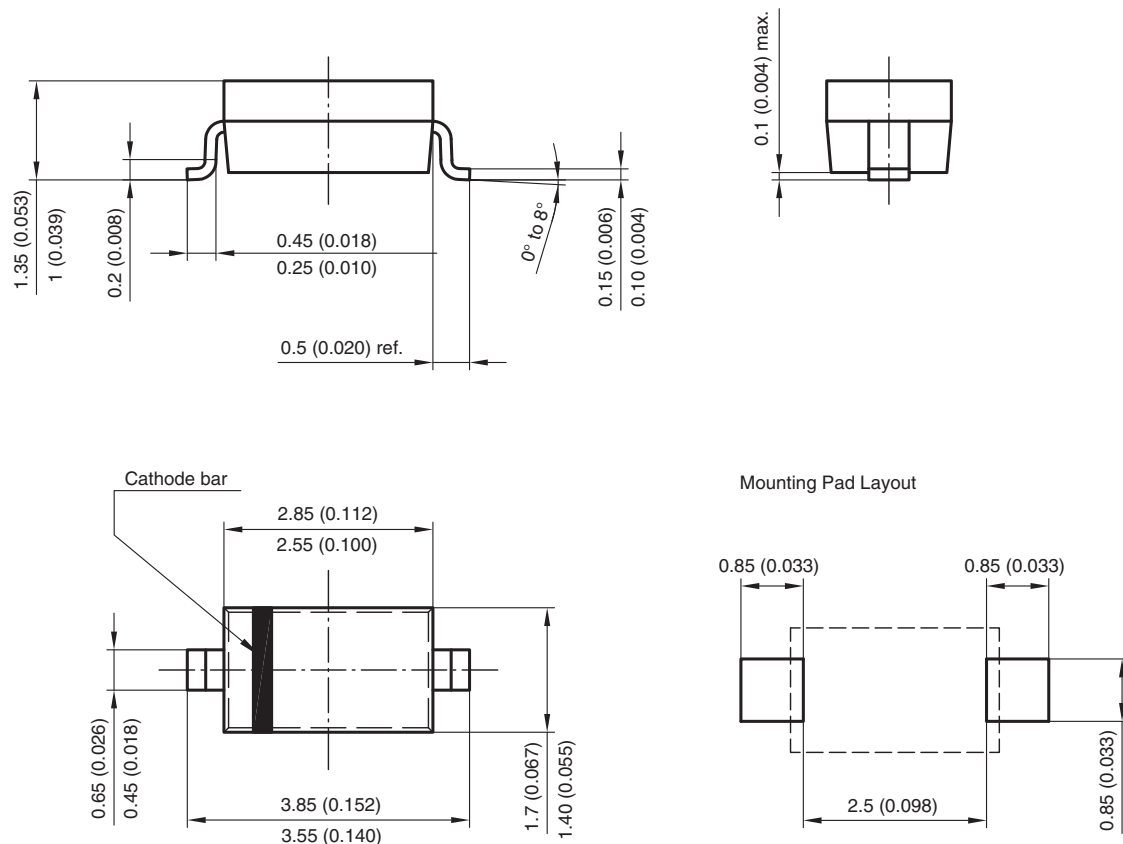


Fig. 4 - Typical Capacitance vs. Reverse Voltage



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



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