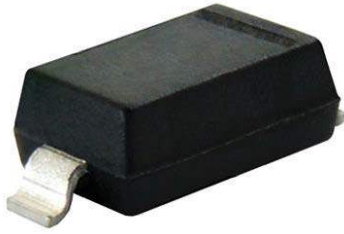




# Small Signal Schottky Diode



### 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 (part number on request)
- Base P/N-G3 - green, commercial grade
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



### DESIGN SUPPORT TOOLS

[click logo to get started](#)



### 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

| PARTS TABLE |                              |                       |              |               |
|-------------|------------------------------|-----------------------|--------------|---------------|
| PART        | ORDERING CODE                | CIRCUIT CONFIGURATION | TYPE MARKING | REMARKS       |
| BAT54W-G    | BAT54W-G3-08 or BAT54W-G3-18 | Single                | L8           | Tape and reel |

| 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 <sup>(1)</sup>   |                                  | $I_F$     | 200   | mA   |
| Repetitive peak forward current <sup>(1)</sup>  | $t_p < 1\text{ s}, \delta < 0.5$ | $I_{FRM}$ | 300   | mA   |
| Surge forward current <sup>(1)</sup>  | $t_p = 10\text{ ms}$             | $I_{FSM}$ | 600   | mA   |
| Power dissipation <sup>(1)</sup>  |                                  | $P_{tot}$ | 150   | mW   |

#### Note

<sup>(1)</sup> 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 <sup>(1)</sup>                                      |                | $R_{thJA}$ | 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

<sup>(1)</sup> Valid provided that electrodes are kept at ambient temperature

| <b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified) |  |            |      |      |      |               |
|--|--|------------|------|------|------|---------------|
| PARAMETER  | TEST CONDITION   | SYMBOL     | MIN. | TYP. | MAX. | UNIT          |
| Reverse breakdown voltage  | Tested with 100 $\mu\text{A}$ pulses   | $V_{(BR)}$ | 30   |      |      | V             |
| Leakage current <sup>(1)</sup>   | $V_R = 25\text{ V}$  | $I_R$      |      |      | 2    | $\mu\text{A}$ |
| Forward voltage <sup>(1)</sup>   | $I_F = 0.1\text{ mA}$  | $V_F$      |      |      | 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            |
| Reverse recovery time  | $I_F = 10\text{ mA}$ , $I_R = 10\text{ mA}$ ,<br>$i_R = 1\text{ mA}$ , $R_L = 100\text{ }\Omega$ | $t_{rr}$   |      |      | 5    | ns            |

**Note**

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

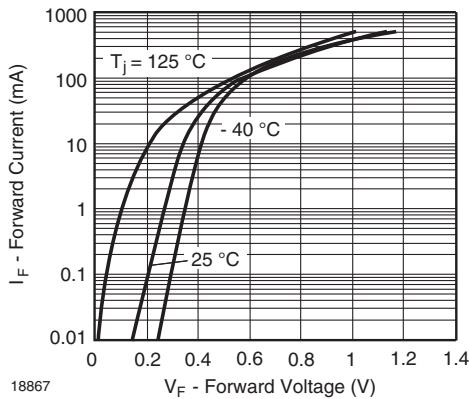
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


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

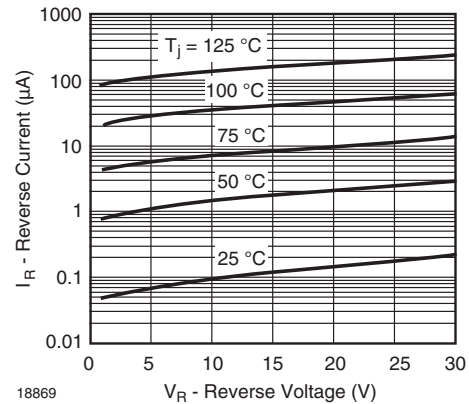


Fig. 3 - Typical Reverse Current vs. Reverse Voltage vs. Various Temperatures

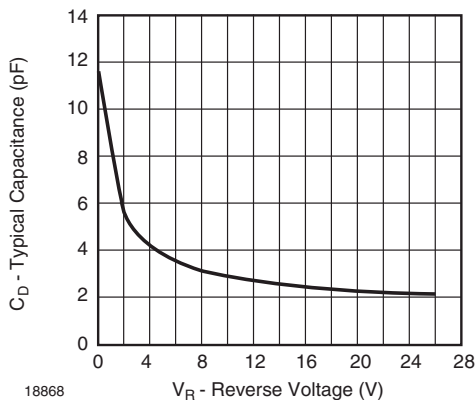
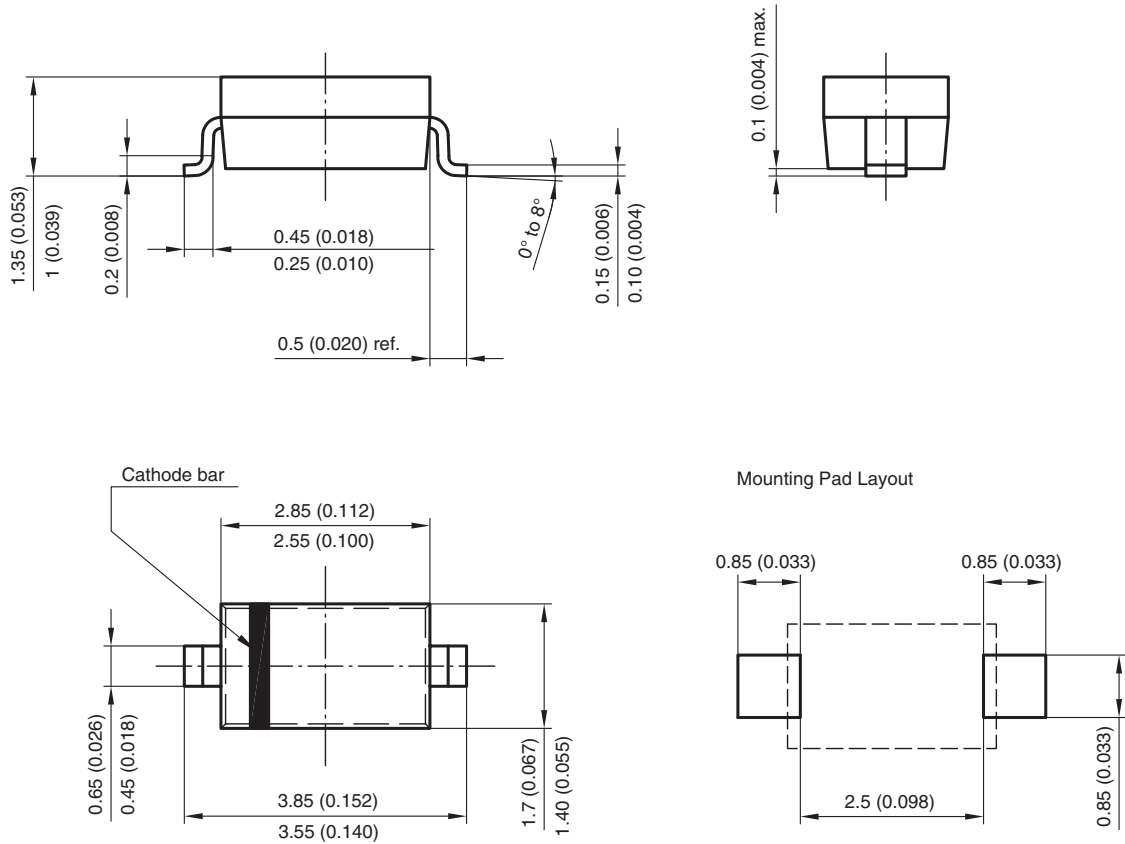


Fig. 2 - Typical Capacitance vs. Reverse Applied Voltage



PACKAGE DIMENSIONS in millimeters (inches): SOD-123



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