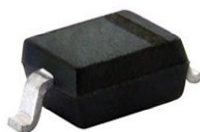


## Small Signal Schottky Diode



### MECHANICAL DATA

**Case:** SOD-323

**Weight:** approx. 4.3 mg

**Packaging codes/options:**

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

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

### 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](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT

### PARTS TABLE

| PART    | ORDERING CODE                    | INTERNAL CONSTRUCTION | TYPE MARKING | REMARKS       |
|---------|----------------------------------|-----------------------|--------------|---------------|
| BAT54WS | BAT54WS-E3-08 or BAT54WS-E3-18   | Single diode          | L4           | Tape and reel |
|         | BAT54WS-HE3-08 or BAT54WS-HE3-18 |                       |              |               |

### ABSOLUTE MAXIMUM RATINGS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

| PARAMETER                                      | TEST CONDITION       | SYMBOL           | VALUE | UNIT |
|------------------------------------------------|----------------------|------------------|-------|------|
| Repetitive peak reverse voltage                |                      | V <sub>RRM</sub> | 30    | V    |
| Forward continuous current <sup>(1)</sup>      |                      | I <sub>F</sub>   | 200   | mA   |
| Repetitive peak forward current <sup>(1)</sup> |                      | I <sub>FRM</sub> | 300   | mA   |
| Surge forward current <sup>(1)</sup>           | t <sub>p</sub> < 1 s | I <sub>FSM</sub> | 600   | mA   |
| Power dissipation <sup>(1)</sup>               |                      | P <sub>tot</sub> | 150   | mW   |

#### Note

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

### THERMAL CHARACTERISTICS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

| PARAMETER                                                 | TEST CONDITION | SYMBOL            | VALUE       | UNIT |
|-----------------------------------------------------------|----------------|-------------------|-------------|------|
| Thermal resistance junction to ambient air <sup>(1)</sup> |                | R <sub>thJA</sub> | 650         | K/W  |
| Maximum junction temperature                              |                | T <sub>j</sub>    | 125         | °C   |
| Storage temperature range                                 |                | T <sub>stg</sub>  | -65 to +150 | °C   |
| Operating temperature range                               |                | T <sub>op</sub>   | -55 to +125 | °C   |

#### Note

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

### ELECTRICAL CHARACTERISTICS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

| PARAMETER                      | TEST CONDITION                                                                                   | SYMBOL            | MIN. | TYP. | MAX. | UNIT |
|--------------------------------|--------------------------------------------------------------------------------------------------|-------------------|------|------|------|------|
| Reverse breakdown voltage      | Tested with 100 µA pulses                                                                        | V <sub>(BR)</sub> | 30   |      |      | V    |
| Leakage current <sup>(1)</sup> | V <sub>R</sub> = 25 V                                                                            | I <sub>R</sub>    |      |      | 2    | µA   |
| Forward voltage <sup>(1)</sup> | I <sub>F</sub> = 0.1 mA                                                                          | V <sub>F</sub>    |      |      | 240  | mV   |
|                                | I <sub>F</sub> = 1 mA                                                                            | V <sub>F</sub>    |      |      | 320  | mV   |
|                                | I <sub>F</sub> = 10 mA                                                                           | V <sub>F</sub>    |      |      | 400  | mV   |
|                                | I <sub>F</sub> = 30 mA                                                                           | V <sub>F</sub>    |      |      | 500  | mV   |
|                                | I <sub>F</sub> = 100 mA                                                                          | V <sub>F</sub>    |      |      | 800  | mV   |
| Diode capacitance              | V <sub>R</sub> = 1 V, f = 1 MHz                                                                  | C <sub>D</sub>    |      |      | 10   | pF   |
| Reverse recovery time          | I <sub>F</sub> = 10 mA, I <sub>R</sub> = 10 mA,<br>i <sub>R</sub> = 1 mA, R <sub>L</sub> = 100 Ω | t <sub>rr</sub>   |      |      | 5    | ns   |

#### Note

<sup>(1)</sup> Pulse test; t<sub>p</sub> < 300 µs, θ < 2 %

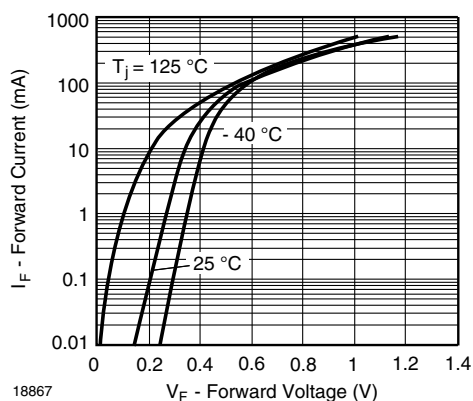
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


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

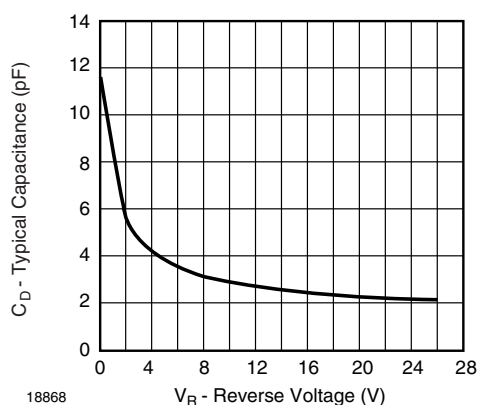


Fig. 2 - Typical Capacitance vs. Reverse Applied Voltage

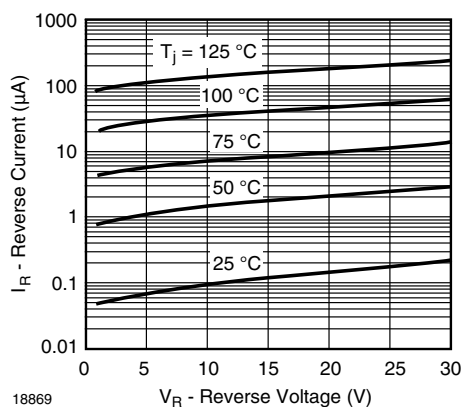
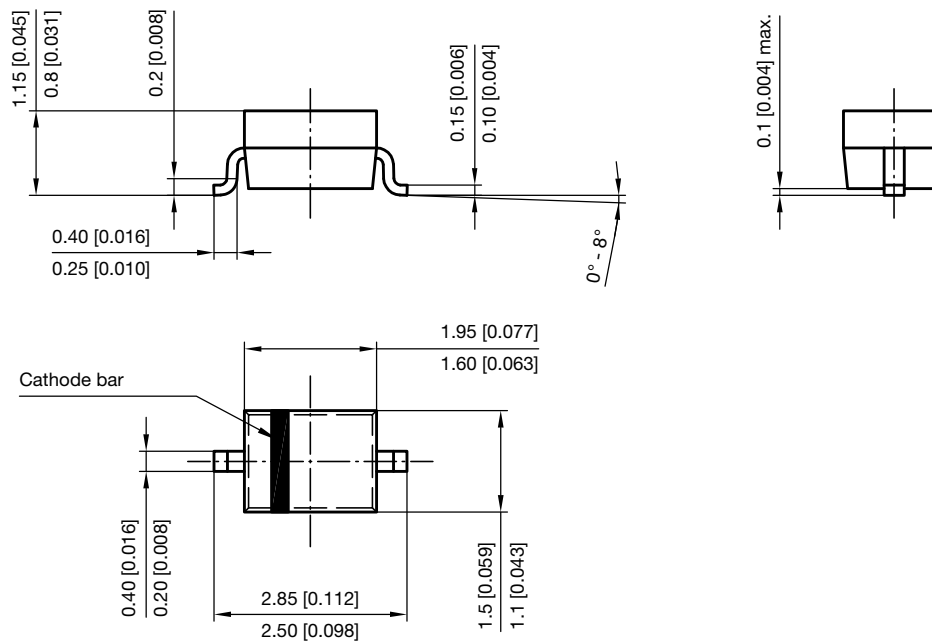
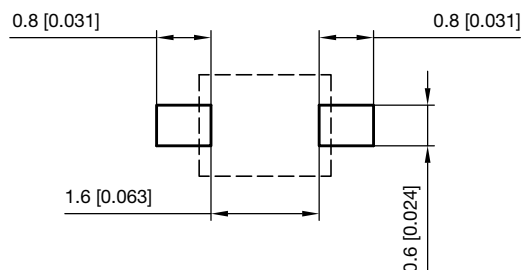


Fig. 3 - Typical Reverse Current vs. Reverse Voltage vs. Various Temperatures

**PACKAGE DIMENSIONS** in millimeters (inches): **SOD-323**


Footprint recommendation:



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 17443



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