



# Small Signal Schottky Diode



### FEATURES

- Integrated protection ring against static discharge
- Very low forward voltage
- AEC-Q101 qualified
- Material categorization:  
For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



RoHS COMPLIANT HALOGEN FREE

### APPLICATIONS

- Applications where a very low forward voltage is required

### MECHANICAL DATA

Case: DO-35

Weight: approx. 125 mg

Cathode band color: black

Packaging codes/options:

TR/10K per 13" reel (52 mm tape), 50K/box

TAP/10K per ammpack (52 mm tape), 50K/box

| PARTS TABLE |                         |                       |              |                       |
|-------------|-------------------------|-----------------------|--------------|-----------------------|
| PART        | ORDERING CODE           | INTERNAL CONSTRUCTION | TYPE MARKING | REMARKS               |
| BAT86S      | BAT86S-TR or BAT86S-TAP | Single diode          | BAT86S       | Tape and reel/ammpack |

| ABSOLUTE MAXIMUM RATINGS (T <sub>amb</sub> = 25 °C, unless otherwise specified) |  |                  |       |      |
|---|--|------------------|-------|------|
| PARAMETER   | TEST CONDITION   | SYMBOL           | VALUE | UNIT |
| Reverse voltage   |  | V <sub>R</sub>   | 50    | V    |
| Peak forward surge current  | t <sub>p</sub> ≤ 10 ms   | I <sub>FSM</sub> | 5     | A    |
| Repetitive peak forward current   | t <sub>p</sub> ≤ 1 s   | I <sub>FRM</sub> | 500   | mA   |
| Forward continuous current  |  | I <sub>F</sub>   | 200   | mA   |
| Average forward current   | PCB mounting, l = 4 mm;<br>V <sub>RWM</sub> = 25 V, T <sub>amb</sub> = 50 °C | I <sub>FAV</sub> | 200   | mA   |

| THERMAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified) |                                     |                   |               |      |
|--|-------------------------------------|-------------------|---------------|------|
| PARAMETER  | TEST CONDITION                      | SYMBOL            | VALUE         | UNIT |
| Thermal resistance junction to ambient air                                     | l = 4 mm, T <sub>L</sub> = constant | R <sub>thJA</sub> | 320           | K/W  |
| Junction temperature   |                                     | T <sub>j</sub>    | 125           | °C   |
| Storage temperature range  |                                     | T <sub>stg</sub>  | - 65 to + 150 | °C   |

| ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified) |                                 |                |      |      |      |      |
|---|---------------------------------|----------------|------|------|------|------|
| PARAMETER   | TEST CONDITION                  | SYMBOL         | MIN. | TYP. | MAX. | UNIT |
| Forward voltage   | I <sub>F</sub> = 0.1 mA         | V <sub>F</sub> |      |      | 300  | mV   |
|   | I <sub>F</sub> = 1 mA           | V <sub>F</sub> |      |      | 380  | mV   |
|   | I <sub>F</sub> = 10 mA          | V <sub>F</sub> |      |      | 450  | mV   |
|   | I <sub>F</sub> = 30 mA          | V <sub>F</sub> |      |      | 600  | mV   |
|   | I <sub>F</sub> = 100 mA         | V <sub>F</sub> |      |      | 900  | mV   |
| Reverse current   | V <sub>R</sub> = 40 V           | I <sub>R</sub> |      |      | 5    | µA   |
| Diode capacitance   | V <sub>R</sub> = 1 V, f = 1 MHz | C <sub>D</sub> |      |      | 8    | pF   |

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

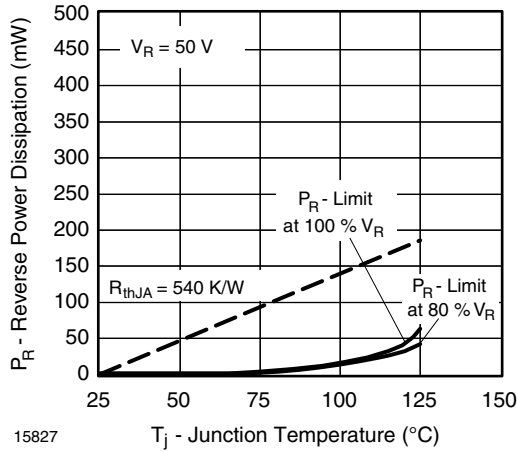


Fig. 1 - Max. Reverse Power Dissipation vs. Junction Temperature

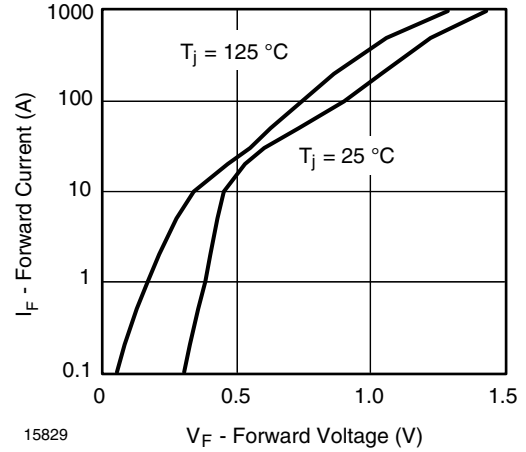


Fig. 3 - Forward Current vs. Forward Voltage

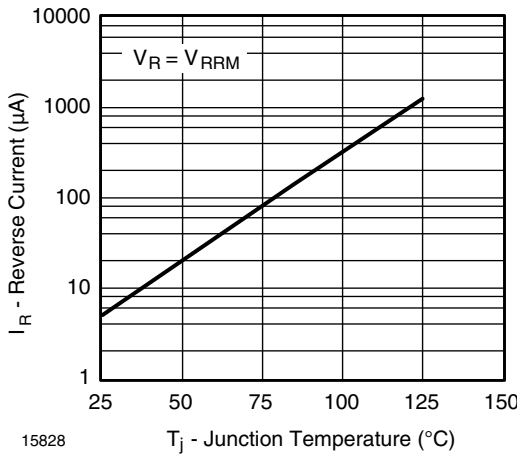


Fig. 2 - Reverse Current vs. Junction Temperature

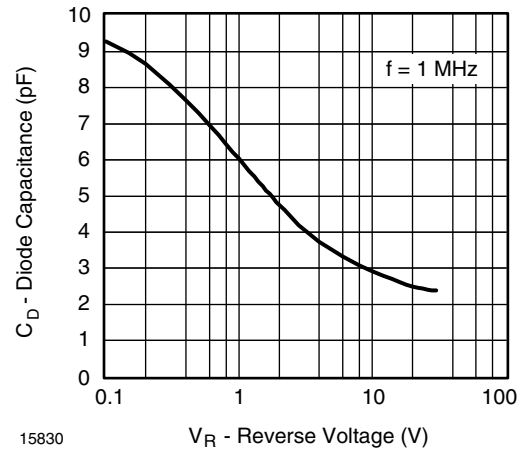
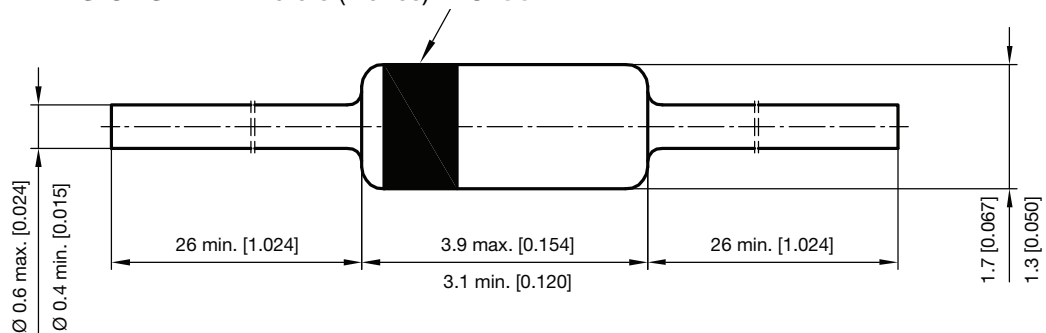


Fig. 4 - Diode Capacitance vs. Reverse Voltage

**PACKAGE DIMENSIONS** in millimeters (inches): **DO-35**



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