

## 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               |
|--------|-------------------------|-----------------------|--------------|-----------------------|
| BAT85S | BAT85S-TR or BAT85S-TAP | Single diode          | BAT85S       | Tape and reel/ammpack |

### ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25^{\circ}\text{C}$ , unless otherwise specified)

| PARAMETER                       | TEST CONDITION                                                                                  | SYMBOL    | VALUE | UNIT |
|---------------------------------|-------------------------------------------------------------------------------------------------|-----------|-------|------|
| Reverse voltage                 |                                                                                                 | $V_R$     | 30    | V    |
| Peak forward surge current      | $t_p \leq 10 \text{ ms}$                                                                        | $I_{FSM}$ | 5     | A    |
| Repetitive peak forward current | $t_p < 1 \text{ s}$                                                                             | $I_{FRM}$ | 300   | mA   |
| Forward continuous current      |                                                                                                 | $I_F$     | 200   | mA   |
| Average forward current         | PCB mounting, $l = 4 \text{ mm}$ ;<br>$V_{RWM} = 25 \text{ V}$ , $T_{amb} = 50^{\circ}\text{C}$ | $I_{FAV}$ | 200   | mA   |

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

| PARAMETER                                  | TEST CONDITION                               | SYMBOL     | VALUE         | UNIT               |
|--------------------------------------------|----------------------------------------------|------------|---------------|--------------------|
| Thermal resistance junction to ambient air | $l = 4 \text{ mm}$ , $T_L = \text{constant}$ | $R_{thJA}$ | 350           | K/W                |
| Junction temperature                       |                                              | $T_j$      | 125           | $^{\circ}\text{C}$ |
| Storage temperature range                  |                                              | $T_{stg}$  | - 65 to + 150 | $^{\circ}\text{C}$ |

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

| PARAMETER             | TEST CONDITION                                                         | SYMBOL   | MIN. | TYP. | MAX. | UNIT          |
|-----------------------|------------------------------------------------------------------------|----------|------|------|------|---------------|
| Forward voltage       | $I_F = 0.1 \text{ mA}$                                                 | $V_F$    |      |      | 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            |
| Reverse current       | $V_R = 25 \text{ V}$                                                   | $I_R$    |      |      | 2    | $\mu\text{A}$ |
| Diode capacitance     | $V_R = 1 \text{ V}$ , $f = 1 \text{ MHz}$                              | $C_D$    |      |      | 10   | pF            |
| Reverse recovery time | $I_F = 10 \text{ mA}$ to $I_R = 10 \text{ mA}$ to $i_R = 1 \text{ mA}$ | $t_{rr}$ |      |      | 5    | ns            |

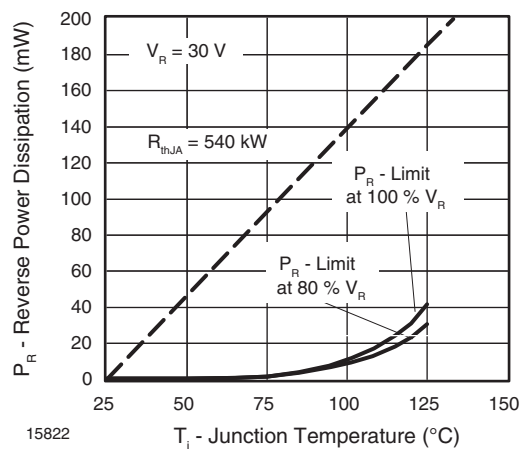
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


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

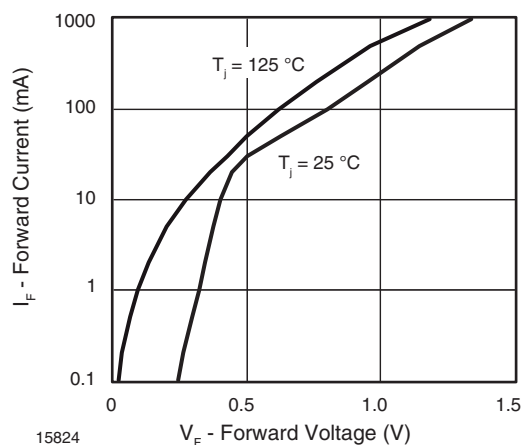


Fig. 3 - Forward Current vs. Forward Voltage

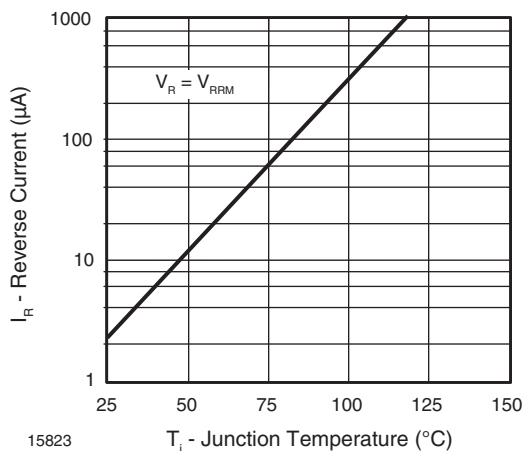


Fig. 2 - Reverse Current vs. Junction Temperature

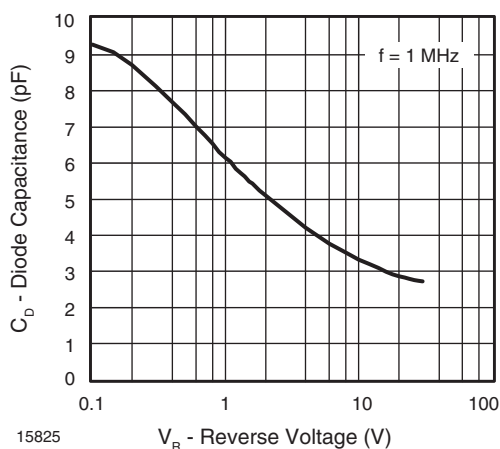
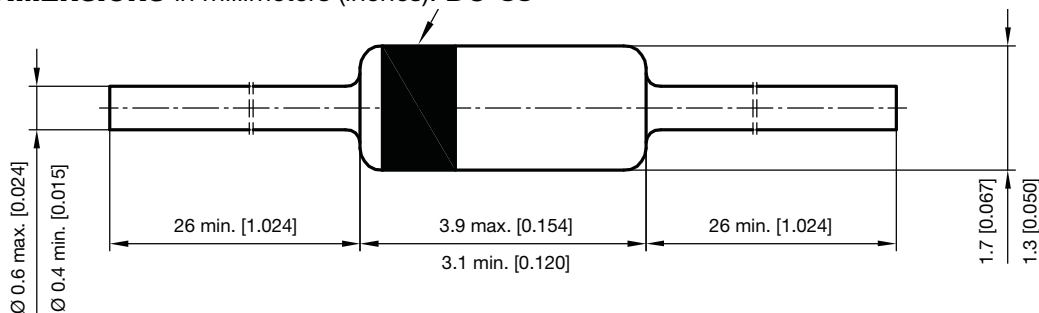


Fig. 4 - Diode Capacitance vs. Reverse Voltage

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


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