



Small Signal Schottky Diode



FEATURES

- Integrated protection ring against static discharge
- Low capacitance
- Low leakage current
- Low forward voltage drop
- Very low switching time
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912



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

APPLICATIONS

- General purpose and switching Schottky barrier diode
- HF-detector
- Protection circuit
- Diode for low currents with a low supply voltage
- Small battery charger
- Power supplies
- DC/DC converter for notebooks

| PARTS TABLE | | | | | |
|-------------|----------------------|-------------------------|-----------------------|--------------|-----------------------|
| PART | TYPE DIFFERENTIATION | ORDERING CODE | INTERNAL CONSTRUCTION | TYPE MARKING | REMARKS |
| BAT81S | $V_R = 40\text{ V}$ | BAT81S-TR or BAT81S-TAP | Single diode | BAT81S | Tape and reel/ammpack |
| BAT82S | $V_R = 50\text{ V}$ | BAT82S-TR or BAT82S-TAP | Single diode | BAT82S | Tape and reel/ammpack |
| BAT83S | $V_R = 60\text{ V}$ | BAT83S-TR or BAT83S-TAP | Single diode | BAT83S | Tape and reel/ammpack |

| ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25\text{ }^\circ\text{C}$, unless otherwise specified) | | | | | |
|---|-------------------------|--------|-----------|-------|------|
| PARAMETER | TEST CONDITION | PART | SYMBOL | VALUE | UNIT |
| Reverse voltage | | BAT81S | V_R | 40 | V |
| | | BAT82S | V_R | 50 | V |
| | | BAT83S | V_R | 60 | V |
| Forward continuous current | | | I_F | 30 | mA |
| Peak forward surge current | $t_p \leq 10\text{ ms}$ | | I_{FSM} | 500 | mA |
| Repetitive peak forward current | $t_p \leq 1\text{ s}$ | | I_{FRM} | 150 | mA |

| THERMAL CHARACTERISTICS ($T_{amb} = 25\text{ }^\circ\text{C}$, 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} | 320 | K/W |
| Junction temperature | | T_j | 125 | $^\circ\text{C}$ |
| Storage temperature range | | T_{stg} | - 65 to + 150 | $^\circ\text{C}$ |

| ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^\circ\text{C}$, unless otherwise specified) | | | | | | |
|---|---|--------|------|------|------|------|
| PARAMETER | TEST CONDITION | SYMBOL | MIN. | TYP. | MAX. | UNIT |
| Forward voltage | $I_F = 0.1\text{ mA}$ | V_F | | | 330 | mV |
| | $I_F = 1\text{ mA}$ | V_F | | | 410 | mV |
| | $I_F = 15\text{ mA}$ | V_F | | | 1000 | mV |
| Reverse current | $V_R = V_{Rmax.}$ | I_R | | | 200 | nA |
| Diode capacitance | $V_R = 1\text{ V}$, $f = 1\text{ MHz}$ | C_D | | | 1.6 | pF |

TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

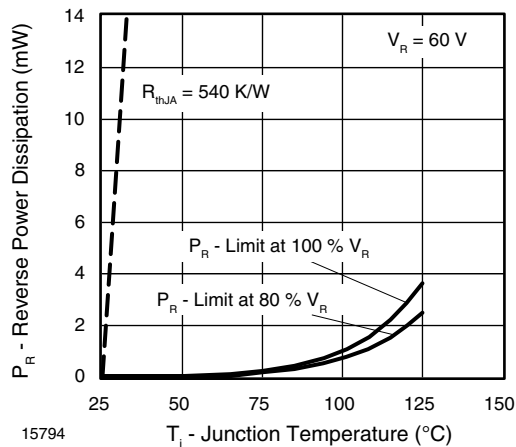


Fig. 1 - Max. Reverse Power Dissipation vs. Junction Temperature

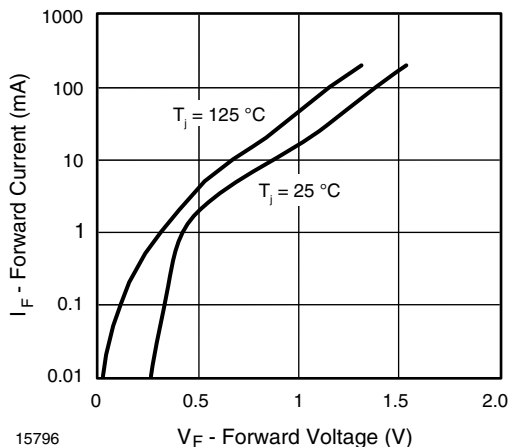


Fig. 3 - Forward Current vs. Forward Voltage

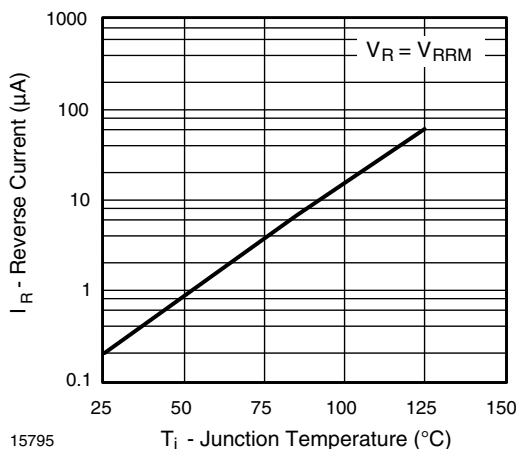


Fig. 2 - Reverse Current vs. Junction Temperature

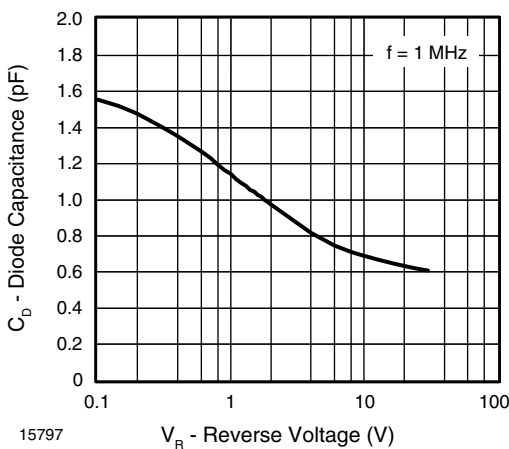
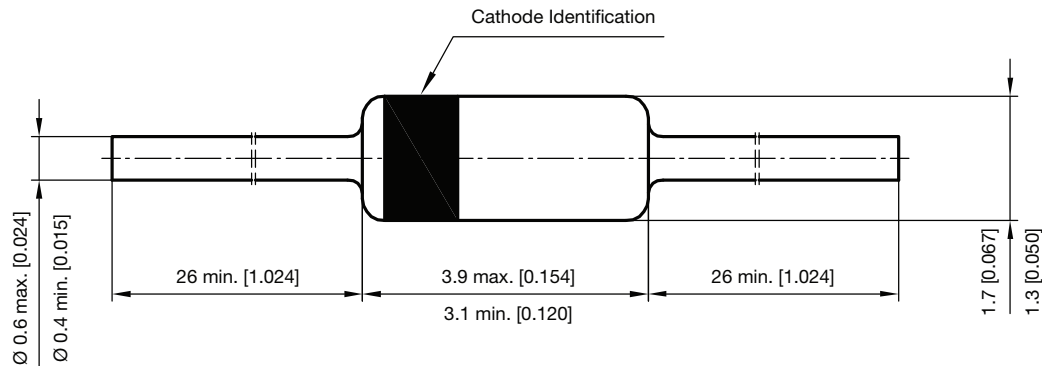


Fig. 4 - Diode Capacitance vs. Reverse Voltage

PACKAGE DIMENSIONS in millimeters (inches): DO-35



Rev. 6 - Date: 19. December 2011
 Document no.: SB-V-3906.04-031(4)
 94 9366



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