



**BAT 47**  
**BAT 48**

**SMALL SIGNAL SCHOTTKY DIODE**

**DESCRIPTION**

General purpose, metal to silicon diodes featuring very low turn-on voltage and fast switching. These devices have integrated protection against excessive voltage such as electrostatic discharges.



**ABSOLUTE RATINGS** (limiting values)

| Symbol             | Parameter   | BAT47   | BAT48 | Unit                                 |
|--------------------|---|---|-------|--------------------------------------|
| $V_{RRM}$          | Repetitive Peak Reverse Voltage                               | 20  | 40    | V                                    |
| $I_F$              | Forward Continuous Current*                                   | $T_a = 25\text{ }^\circ\text{C}$<br>350         |       | mA                                   |
| $I_{FRM}$          | Repetitive Peak Forward Current*                              | $t_p \leq 1\text{ s}$<br>$\delta \leq 0.5$<br>1 |       | A                                    |
| $I_{FSM}$          | Surge non Repetitive Forward Current*                         | $t_p = 10\text{ ms}$<br>7.5                     |       | A                                    |
|                    |   | $t_p = 1\text{ s}$<br>1.5                       |       |                                      |
| $P_{tot}$          | Power Dissipation*  | $T_a = 25\text{ }^\circ\text{C}$<br>330         |       | mW                                   |
| $T_{stg}$<br>$T_j$ | Storage and Junction Temperature Range                        | - 65 to + 150<br>- 65 to + 125                  |       | $^\circ\text{C}$<br>$^\circ\text{C}$ |
| $T_L$              | Maximum Temperature for Soldering during 10s at 4mm from Case | 230   |       | $^\circ\text{C}$                     |

**THERMAL RESISTANCE**

| Symbol        | Test Conditions   | Value | Unit               |
|---------------|-------------------|-------|--------------------|
| $R_{th(j-l)}$ | Junction-ambient* | 300   | $^\circ\text{C/W}$ |

\* On infinite heatsink with 4mm lead length



## BAT 47/BAT 48

### ELECTRICAL CHARACTERISTICS

#### STATIC CHARACTERISTICS

| Symbol     | Test Conditions                  |              | Min.      | Typ. | Max. | Unit |         |
|------------|----------------------------------|--------------|-----------|------|------|------|---------|
| $V_{(BR)}$ | $I_R = 10\mu A$                  | BAT47        | 20        |      |      | V    |         |
|            | $I_R = 25\mu A$                  | BAT48        | 40        |      |      |      |         |
| $V_F^*$    | $T_j = 25^\circ C$ $I_F = 0.1mA$ | All Types    |           |      | 0.25 | V    |         |
|            | $T_j = 25^\circ C$ $I_F = 1mA$   |              |           |      | 0.3  |      |         |
|            | $T_j = 25^\circ C$ $I_F = 10mA$  |              |           |      | 0.4  |      |         |
|            | $T_j = 25^\circ C$ $I_F = 30mA$  | BAT47        |           |      | 0.5  |      |         |
|            | $T_j = 25^\circ C$ $I_F = 150mA$ |              |           |      | 0.8  |      |         |
|            | $T_j = 25^\circ C$ $I_F = 300mA$ |              |           |      | 1    |      |         |
|            | $T_j = 25^\circ C$ $I_F = 50mA$  | BAT48        |           |      | 0.5  |      |         |
|            | $T_j = 25^\circ C$ $I_F = 200mA$ |              |           |      | 0.75 |      |         |
|            | $T_j = 25^\circ C$ $I_F = 500mA$ |              |           |      | 0.9  |      |         |
| $I_R^*$    | $T_j = 25^\circ C$               | $V_R = 1.5V$ | All Types |      |      | 1    | $\mu A$ |
|            | $T_j = 60^\circ C$               |              |           |      |      | 10   |         |
|            | $T_j = 25^\circ C$               | $V_R = 10V$  | BAT47     |      |      | 4    |         |
|            | $T_j = 60^\circ C$               |              |           |      |      | 20   |         |
|            | $T_j = 25^\circ C$               | $V_R = 20V$  |           |      |      | 10   |         |
|            | $T_j = 60^\circ C$               |              |           |      |      | 30   |         |
|            | $T_j = 25^\circ C$               | $V_R = 10V$  | BAT48     |      |      | 2    |         |
|            | $T_j = 60^\circ C$               |              |           |      |      | 15   |         |
|            | $T_j = 25^\circ C$               | $V_R = 20V$  |           |      |      | 5    |         |
|            | $T_j = 60^\circ C$               |              |           |      |      | 25   |         |
|            | $T_j = 25^\circ C$               | $V_R = 40V$  |           |      |      | 25   |         |
|            | $T_j = 60^\circ C$               |              |           |      |      | 50   |         |

#### DYNAMIC CHARACTERISTICS

| Symbol   | Test Conditions                 |   | Min. | Typ. | Max. | Unit |
|----------|---------------------------------|---|------|------|------|------|
| C        | $T_j = 25^\circ C$ $V_R = 0V$   | f = 1MHz                                    |      | 20   |      | pF   |
|          | $T_j = 25^\circ C$ $V_R = 1V$   |   |      | 12   |      |      |
| $t_{rr}$ | $T_j = 25^\circ C$ $I_F = 10mA$ | $V_R = 1V$ $i_{rr} = 1mA$ $R_L = 100\Omega$ |      | 10   |      | ns   |

\* Pulse test:  $t_p \leq 300\mu s$   $\delta < 2\%$ .

Figure 1. Forward current versus forward voltage at different temperatures (typical values).

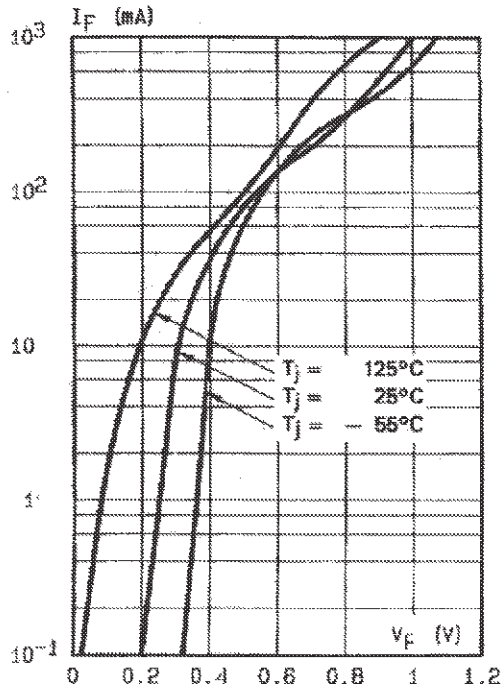


Figure 2. Forward current versus forward voltage (typical values).

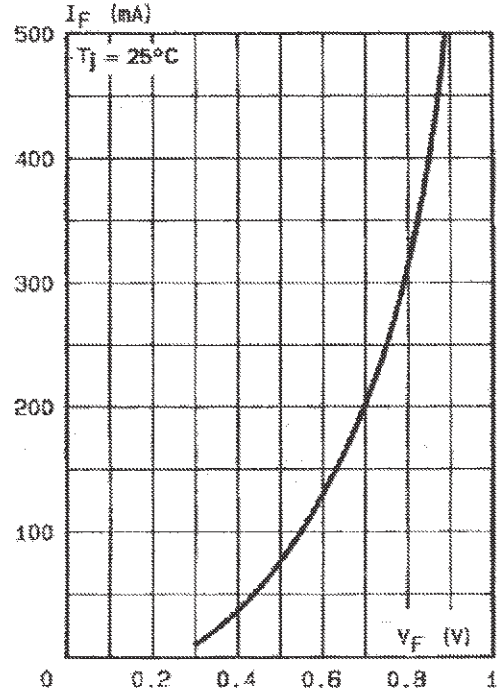


Figure 3. Reverse current versus junction temperature.

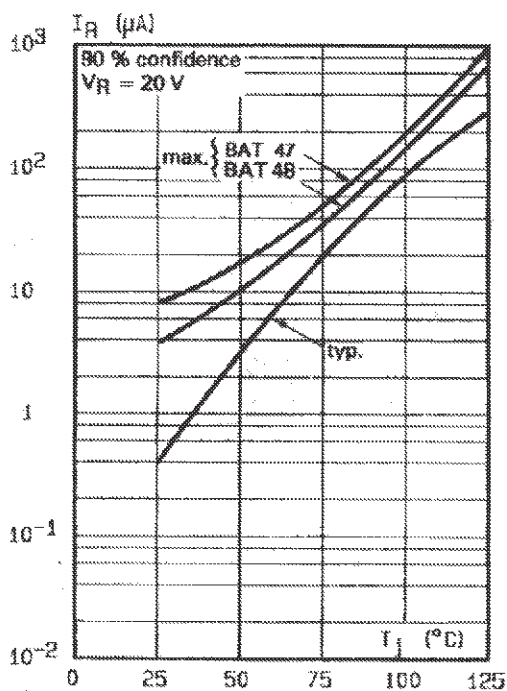


Figure 4. Reverse current versus continuous reverse voltage (typical values).

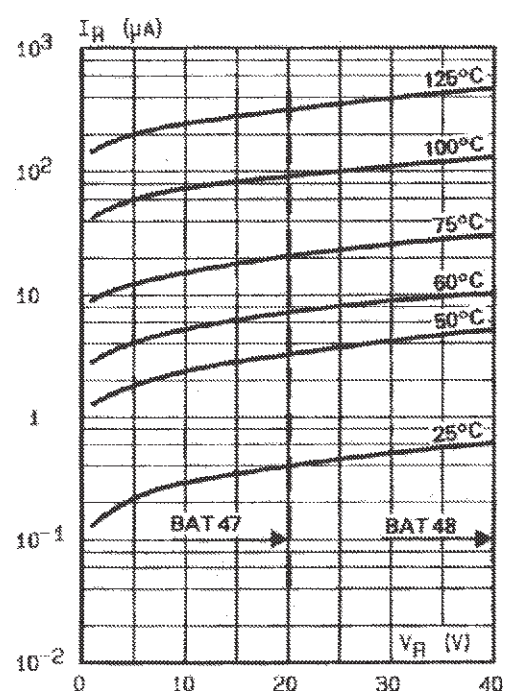
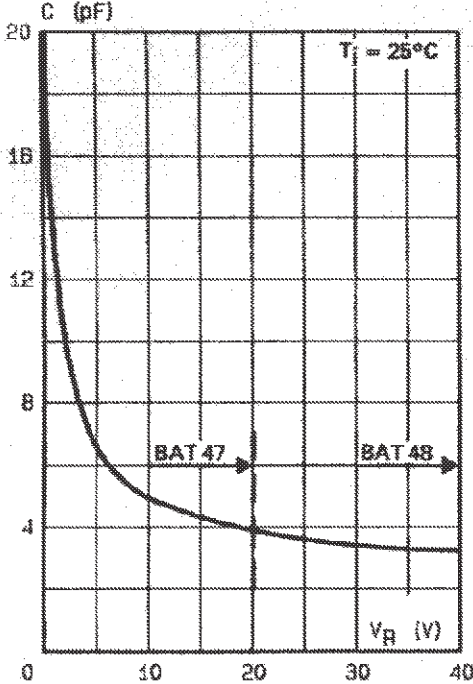
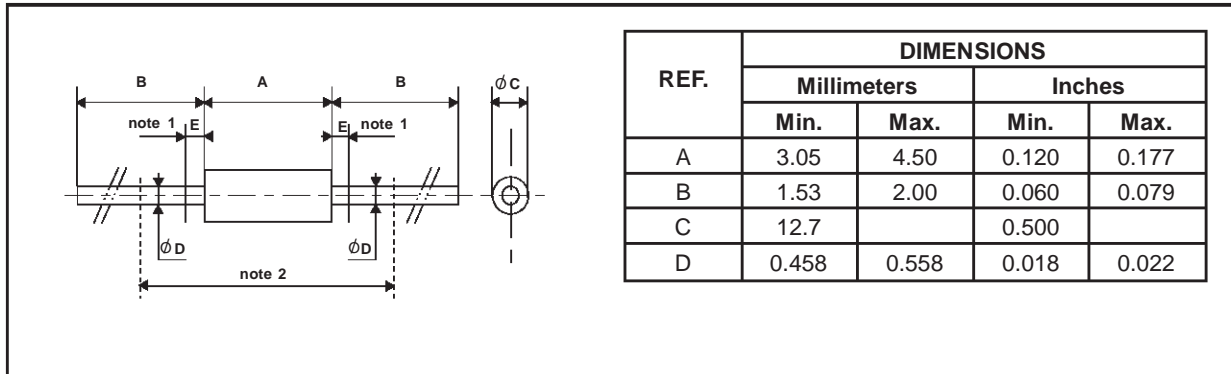


Figure 5. Capacitance C versus reverse



**PACKAGE MECHANICAL DATA**

DO 35 Glass



Cooling method: by convection and conduction.  
 Marking: clear, ring at cathode end.  
 Weight: 0.015g

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