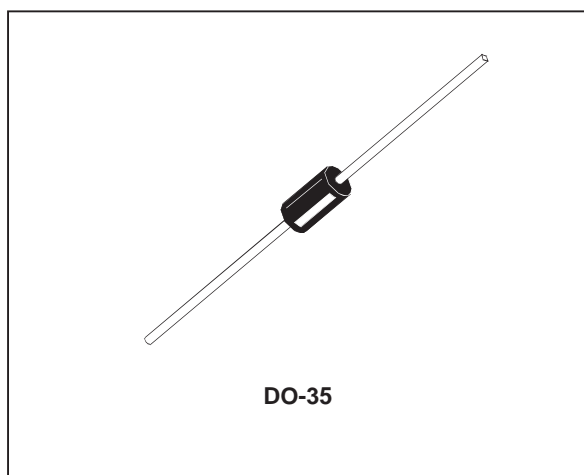


SMALL SIGNAL SCHOTTKY DIODE

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* | $T_a = 25^\circ\text{C}$ 350 | | mA |
| I_{FRM} | Repetitive Peak Forward Current* | $t_p \leq 1\text{s}$ $\delta \leq 0.5$ 1 | | A |
| I_{FSM} | Surge non Repetitive Forward Current* | $t_p = 10\text{ms}$ 7.5 | | A |
| | | $t_p = 1\text{s}$ 1.5 | | |
| P_{tot} | Power Dissipation* | $T_a = 25^\circ\text{C}$ 330 | | mW |
| T_{stg} T_j | Storage and Junction Temperature Range | - 65 to + 150 - 65 to + 125 | | $^\circ\text{C}$ $^\circ\text{C}$ |
| 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

BAT47 / BAT48

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 | μA |
| | $T_j = 60^\circ C$ | | | | | 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 | | |

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

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

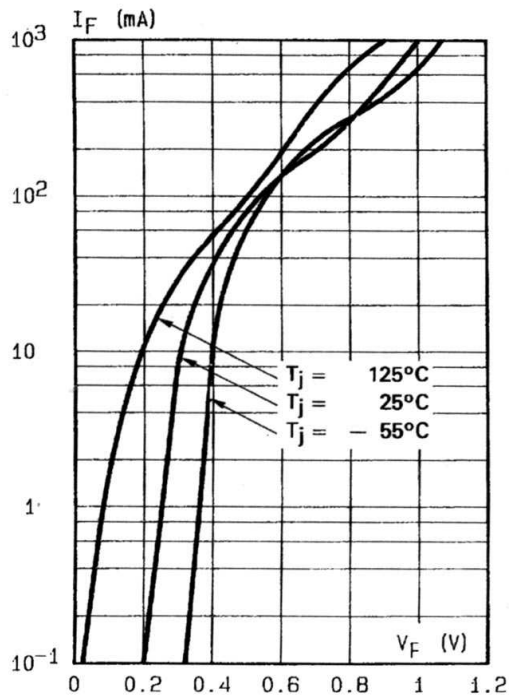


Fig. 2: Forward current versus forward voltage (typical values).

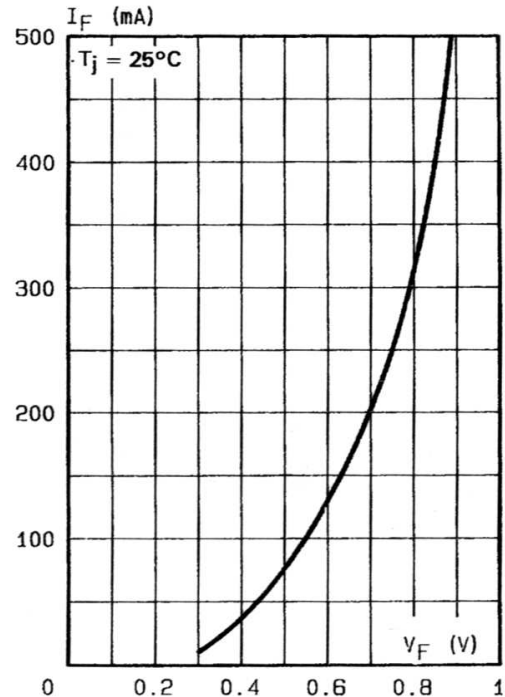


Fig. 3: Reverse current versus junction temperature.

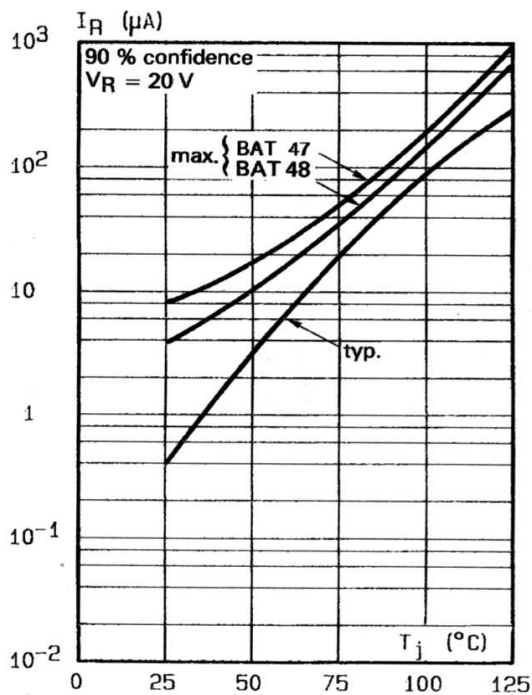
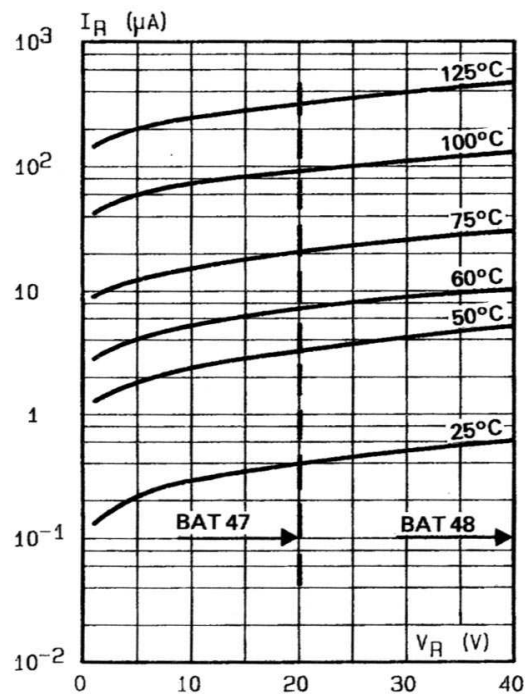
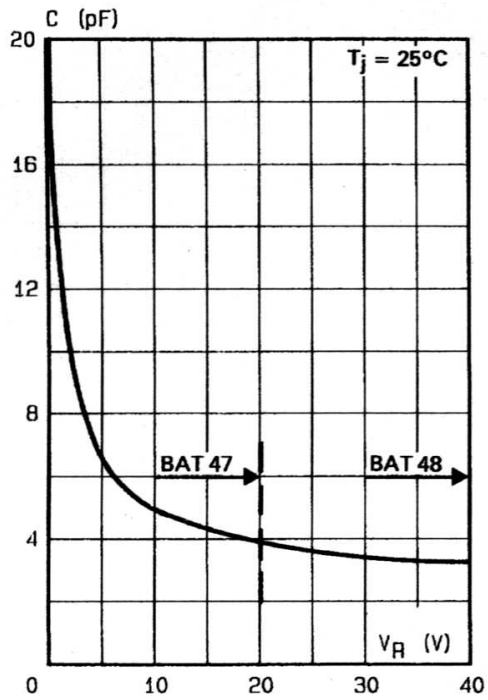


Fig. 4: Reverse current versus continuous reverse voltage (typical values).



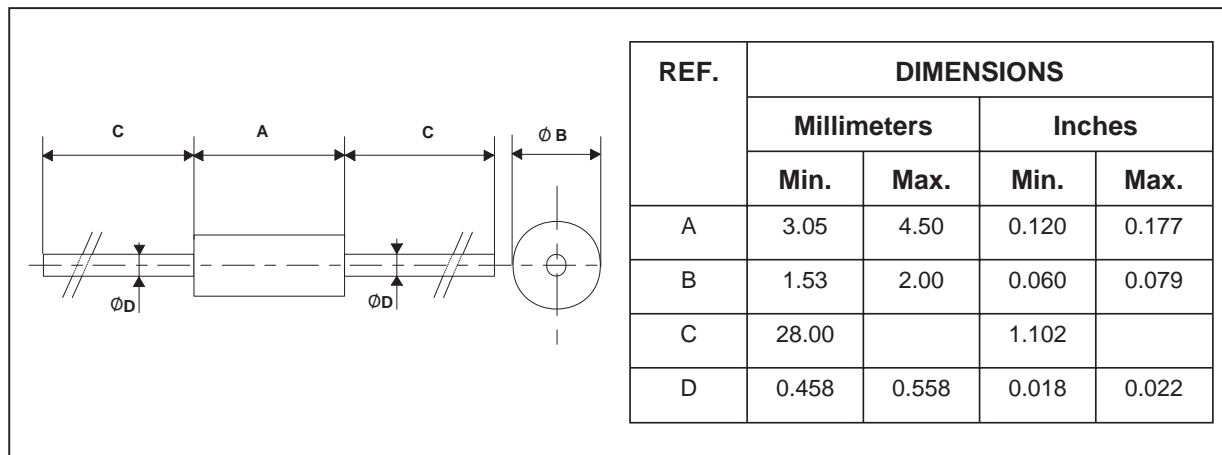
BAT47 / BAT48

Fig. 5: Capacitance C versus reverse applied voltage V_R (typical values).



PACKAGE MECHANICAL DATA

DO-35



Cooling method: by convection and conduction.

Marking: clear, ring at cathode end.

Weight: 0.015g

Information furnished is believed to be accurate and reliable. However, STMicroelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

The ST logo is a registered trademark of STMicroelectronics

© 2001 STMicroelectronics - Printed in Italy - All rights reserved.

STMicroelectronics GROUP OF COMPANIES

Australia - Brazil - China - Finland - France - Germany - Hong Kong - India - Italy - Japan - Malaysia

Malta - Morocco - Singapore - Spain - Sweden - Switzerland - United Kingdom - U.S.A.

<http://www.st.com>