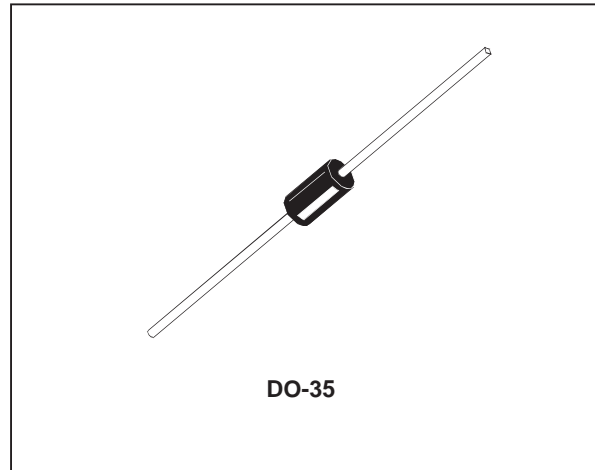




SMALL SIGNAL SCHOTTKY DIODE

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 | | |
| | $T_j = 25^\circ C$ $I_F = 300mA$ | BAT48 | | | 1 | | |
| | $T_j = 25^\circ C$ $I_F = 50mA$ | | | | 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).

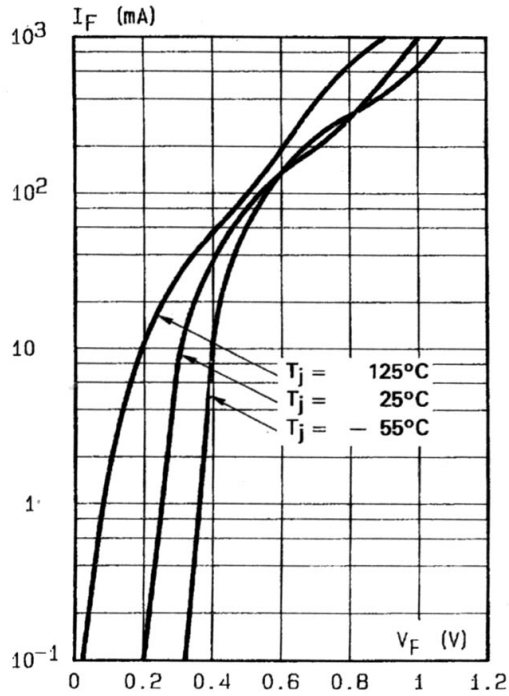


Fig. 2: Forward current versus forward voltage (typical values).

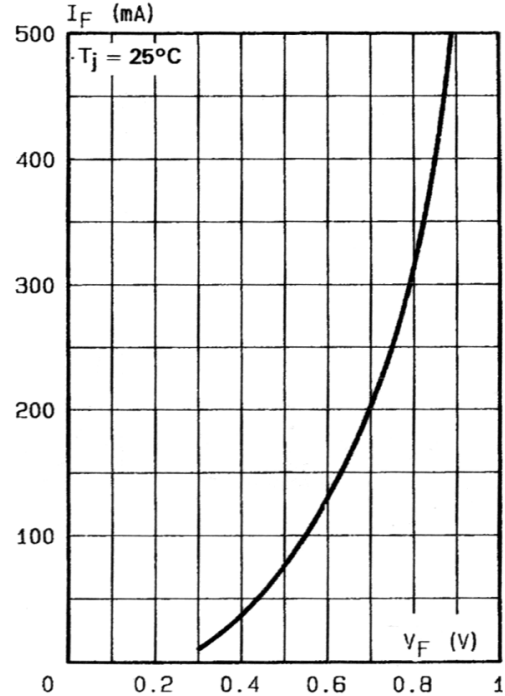


Fig. 3: Reverse current versus junction temperature.

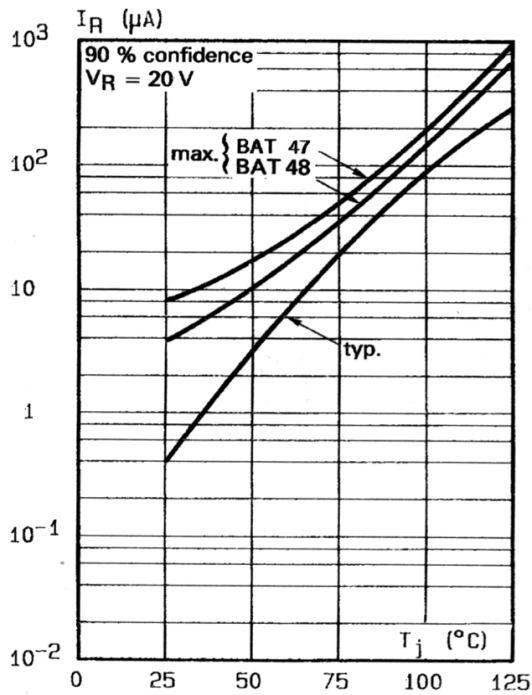
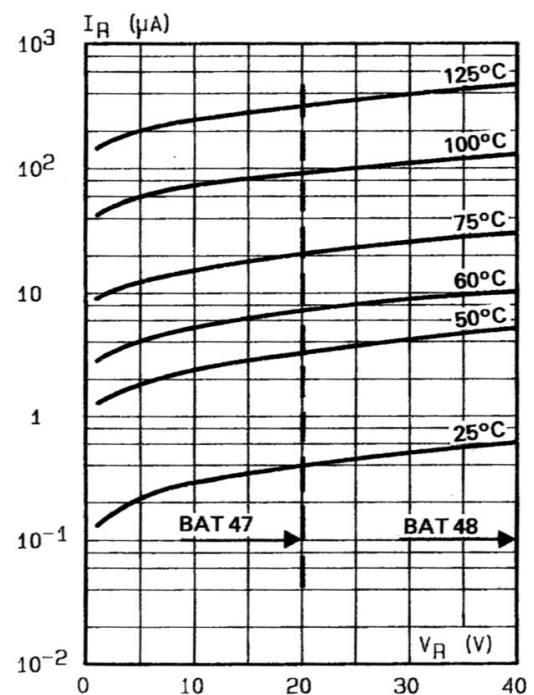
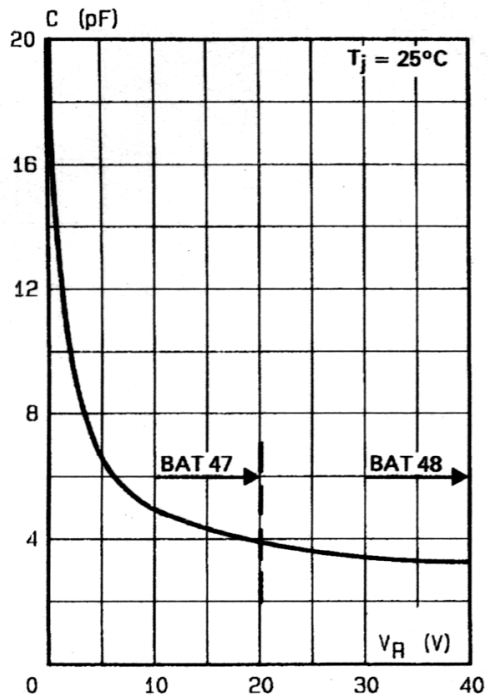


Fig. 4: Reverse current versus continuous reverse voltage (typical values).



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



PACKAGE MECHANICAL DATA

DO-35

| REF. | DIMENSIONS | | | |
|------|-------------|-------|--------|-------|
| | Millimeters | | Inches | |
| | Min. | Max. | Min. | Max. |
| A | 3.05 | 4.50 | 0.120 | 0.177 |
| B | 1.53 | 2.00 | 0.060 | 0.079 |
| C | 28.00 | | 1.102 | |
| D | 0.458 | 0.558 | 0.018 | 0.022 |

Cooling method: by convection and conduction.

Marking: clear, ring at cathode end.

Weight: 0.015g

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