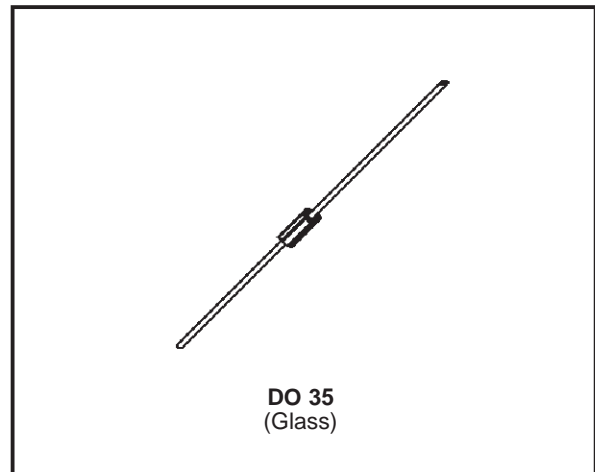


## SMALL SIGNAL SCHOTTKY DIODES

### DESCRIPTION

General purpose, metal to silicon diodes featuring very low turn-on voltage fast switching.

These devices have integrated protection against excessive voltage such as electrostatic discharges.



### ABSOLUTE RATINGS (limiting values)

| Symbol             | Parameter   |  | Value                        | Unit                                 |
|--------------------|---|--|------------------------------|--------------------------------------|
| $V_{RRM}$          | Repetitive Peak Reverse Voltage                               |  | 30                           | V                                    |
| $I_F$              | Forward Continuous Current                                    | $T_a = 25\text{ }^\circ\text{C}$           | 200                          | mA                                   |
| $I_{FRM}$          | Repetitive Peak Forward Current                               | $t_p \leq 1\text{ s}$<br>$\delta \leq 0.5$ | 500                          | mA                                   |
| $I_{FSM}$          | Surge non Repetitive Forward Current*                         | $t_p = 10\text{ ms}$                       | 4                            | A                                    |
| $P_{tot}$          | Power Dissipation*  | $T_l = 65\text{ }^\circ\text{C}$           | 200                          | 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               |
|---------------|-------------------|-------|--------------------|
| $R_{th(j-a)}$ | Junction-ambient* | 300   | $^\circ\text{C/W}$ |

\* On infinite heatsink with 4mm lead length

**ELECTRICAL CHARACTERISTICS**

**STATIC CHARACTERISTICS**

| Symbol   | Test Conditions           |                        | Min.      | Typ. | Max. | Unit          |
|----------|---------------------------|------------------------|-----------|------|------|---------------|
| $V_{BR}$ | $T_j = 25^\circ\text{C}$  | $I_R = 100\mu\text{A}$ | 30        |      |      | V             |
| $V_F^*$  | $T_j = 25^\circ\text{C}$  | $I_F = 200\text{mA}$   | All Types |      | 1    | V             |
|          | $T_j = 25^\circ\text{C}$  | $I_F = 10\text{mA}$    | BAT 42    |      | 0.4  |               |
|          | $T_j = 25^\circ\text{C}$  | $I_F = 50\text{mA}$    |           |      | 0.65 |               |
|          | $T_j = 25^\circ\text{C}$  | $I_F = 2\text{mA}$     | BAT 43    |      | 0.33 |               |
|          | $T_j = 25^\circ\text{C}$  | $I_F = 15\text{mA}$    |           |      | 0.45 |               |
| $I_R^*$  | $T_j = 25^\circ\text{C}$  | $V_R = 25\text{V}$     |           |      | 0.5  | $\mu\text{A}$ |
|          | $T_j = 100^\circ\text{C}$ |                        |           |      | 100  |               |

**DYNAMIC CHARACTERISTICS**

| Symbol | Test Conditions          |  | Min. | Typ. | Max. | Unit |
|--------|--------------------------|--|------|------|------|------|
| C      | $T_j = 25^\circ\text{C}$ | $V_R = 1\text{V}$ $f = 1\text{MHz}$  |      | 7    |      | pF   |
| trr    | $T_j = 25^\circ\text{C}$ | $I_F = 10\text{mA}$ $I_R = 10\text{mA}$ $i_{rr} = 1\text{mA}$ $R_L = 100\Omega$    |      |      | 5    | ns   |
| h      | $T_j = 25^\circ\text{C}$ | $R_L = 15\text{K}\Omega$ $C_L = 300\text{pF}$ $f = 45\text{MHz}$ $V_i = 2\text{V}$ | 80   |      |      | %    |

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

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

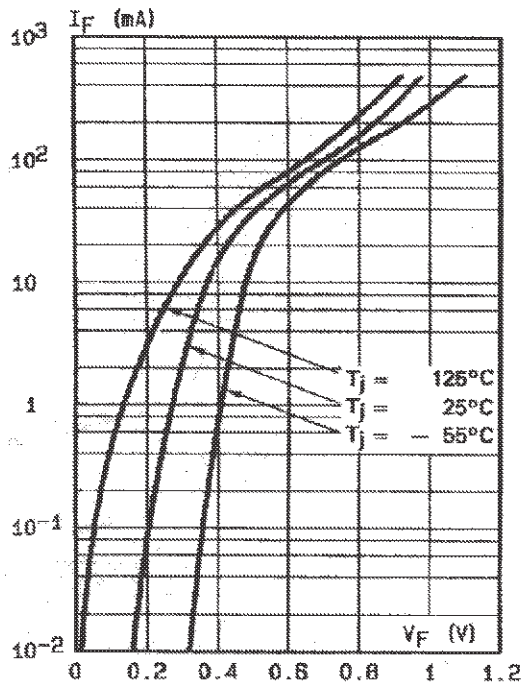


Figure 2. Forward current versus forward voltage (typical values).

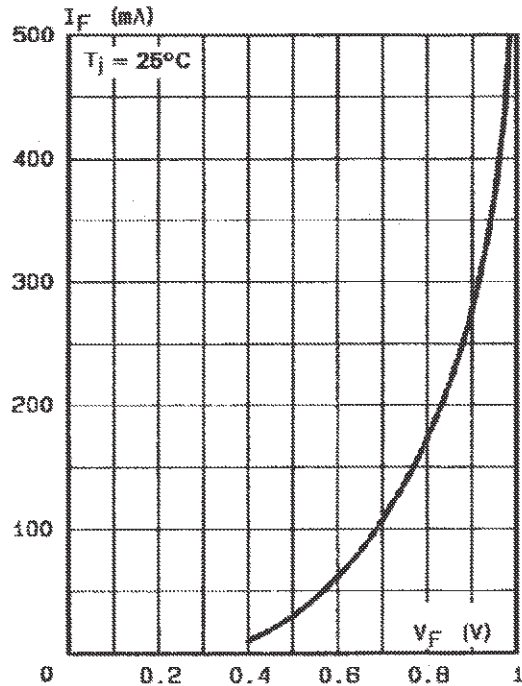


Figure 3. Reverse current versus junction temperature (typical values).

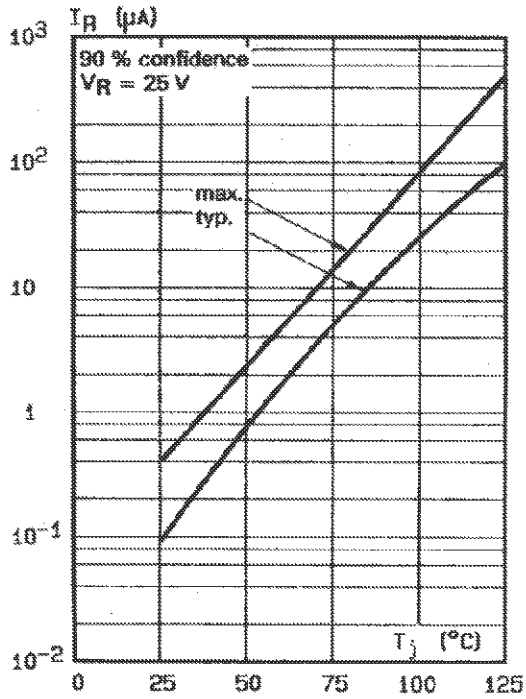


Figure 4. Reverse current versus continuous reverse voltage.

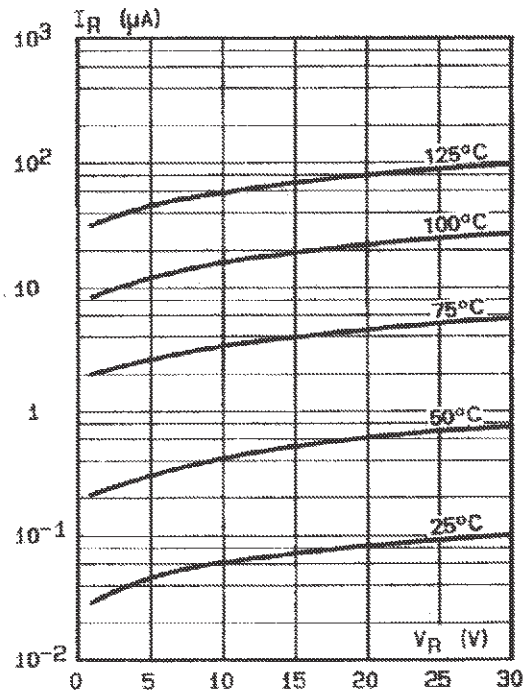
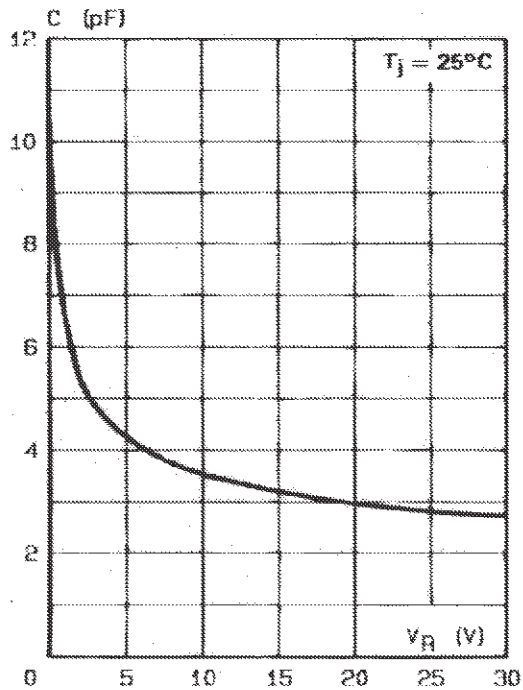


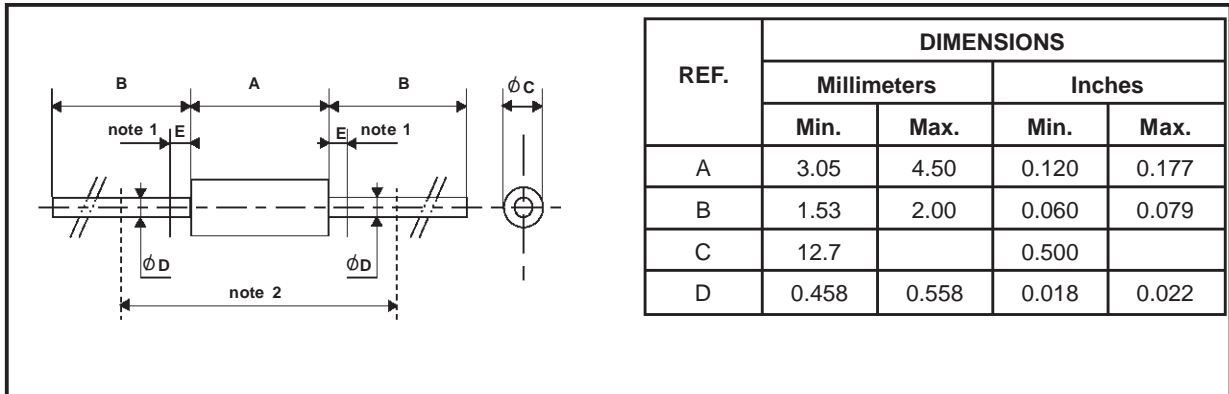
Figure 5. Capacitance C versus reverse applied voltage  $V_R$  (typical values).



## BAT 42/BAT 43

### PACKAGE MECHANICAL DATA

DO 35 Glass



Cooling method: by convection and conduction  
Marking: clear, ring at cathode end.  
Weight: 0.15g

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