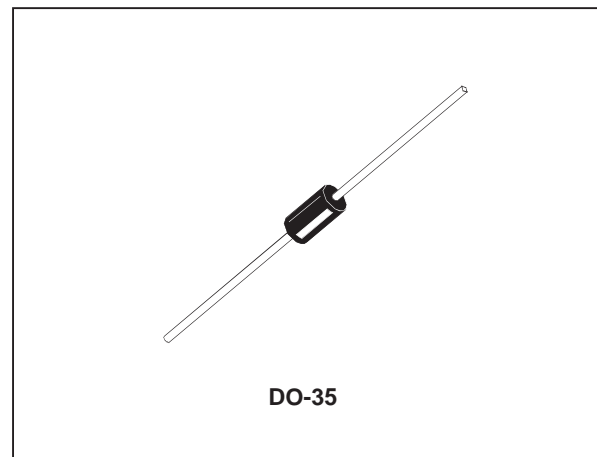


SMALL SIGNAL SCHOTTKY DIODES

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 dis-



ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		30	V
I_F	Forward Continuous Current	$T_a = 25^\circ\text{C}$	200	mA
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 1\text{s}$ $\delta \leq 0.5$	500	mA
I_{FSM}	Surge non Repetitive Forward Current*	$t_p = 10\text{ms}$	4	A
P_{tot}	Power Dissipation*	$T_l = 65^\circ\text{C}$	200	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
$R_{th(j-a)}$	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^*	$T_j = 25^\circ\text{C}$	$I_F = 200\text{mA}$			1	V
	$T_j = 25^\circ\text{C}$	$I_F = 10\text{mA}$			0.4	
	$T_j = 25^\circ\text{C}$	$I_F = 50\text{mA}$			0.65	
	$T_j = 25^\circ\text{C}$	$I_F = 2\text{mA}$	0.26		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	μA
	$T_j = 100^\circ\text{C}$				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: $t_p \leq 300\mu\text{s}$ $\delta < 2\%$.

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

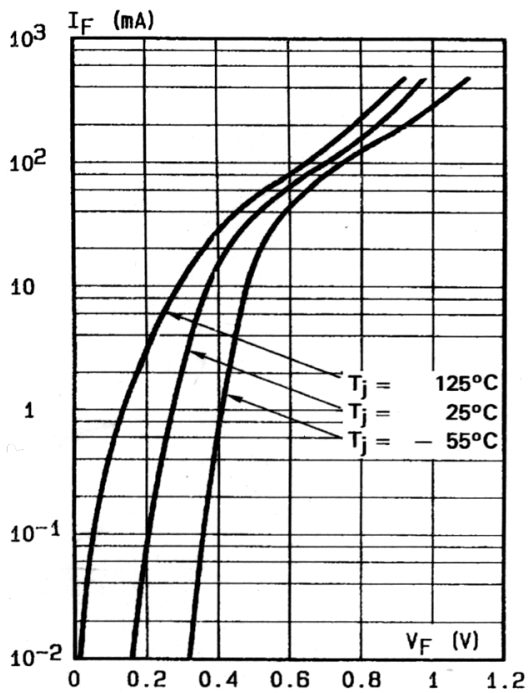


Fig. 2: Forward current versus forward voltage (typical values).

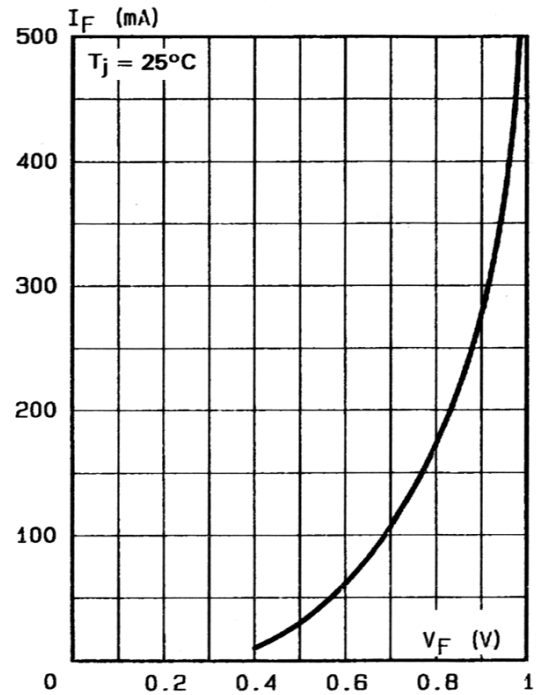


Fig. 3: Reverse current versus junction temperature (typical values).

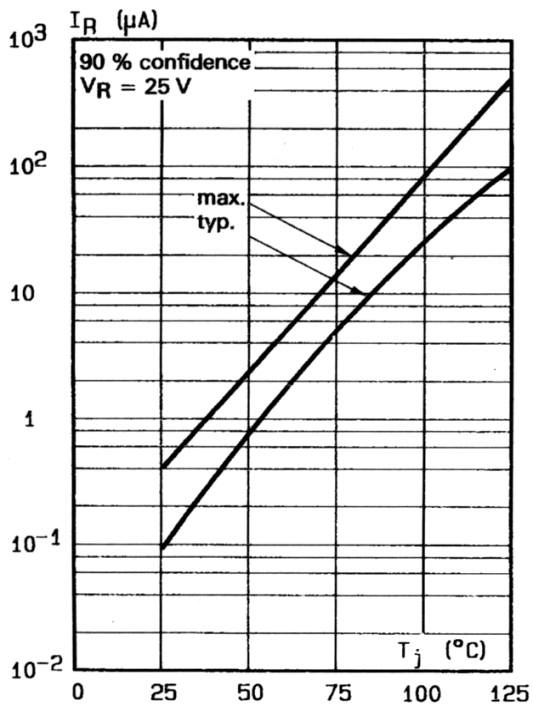


Fig. 4: Reverse current versus continuous reverse voltage.

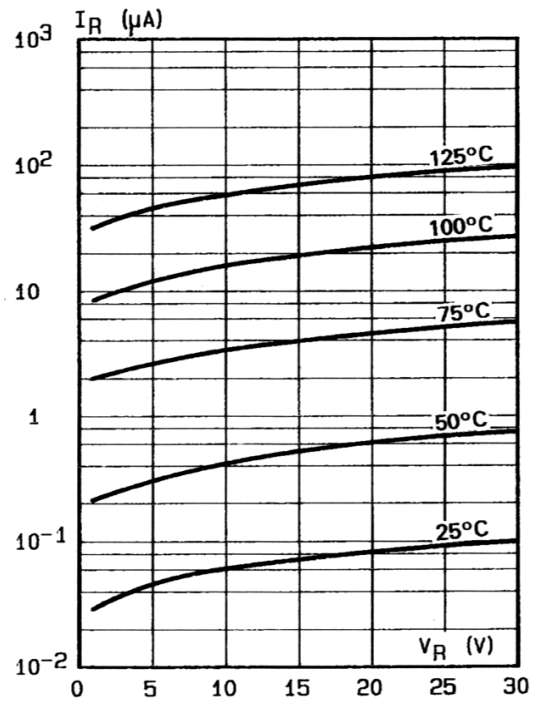
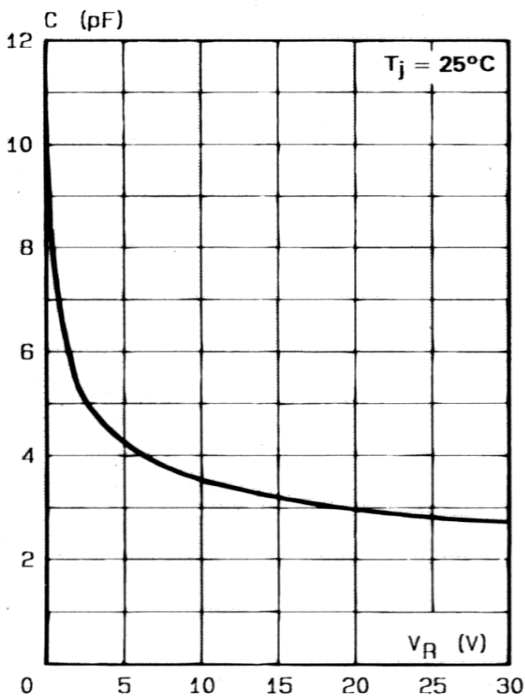
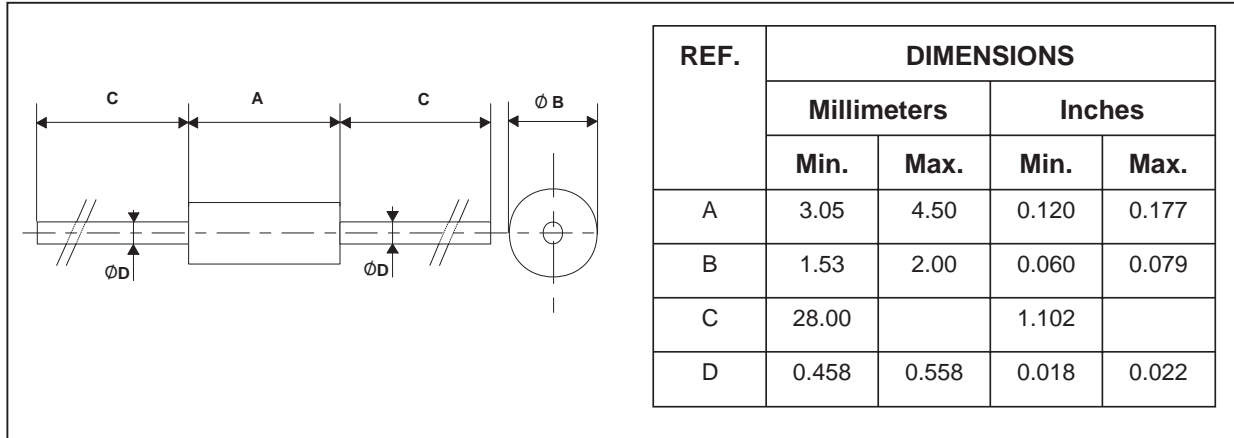


Fig. 5: Capacitance C versus reverse applied voltage V_R (typical values).



BAT42 / BAT43

PACKAGE MECHANICAL DATA
DO-35



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

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