

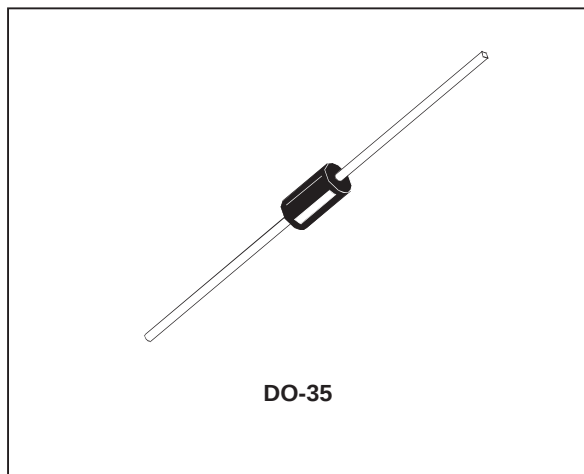


BAT47
BAT48

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°C	350		mA
I _{FRM}	Repetitive Peak Fordward Current*	t _p ≤ 1s δ ≤ 0.5	1		A
I _{FSM}	Surge non Repetitive Forward Current*	t _p = 10ms	7.5		A
		t _p = 1s	1.5		
P _{tot}	Power Dissipation*	T _a = 25°C	330		mW
T _{stg} T _j	Storage and Junction Temperature Range		- 65 to + 150 - 65 to + 125		°C °C
T _L	Maximum Temperature for Soldering during 10s at 4mm from Case		230		°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

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).

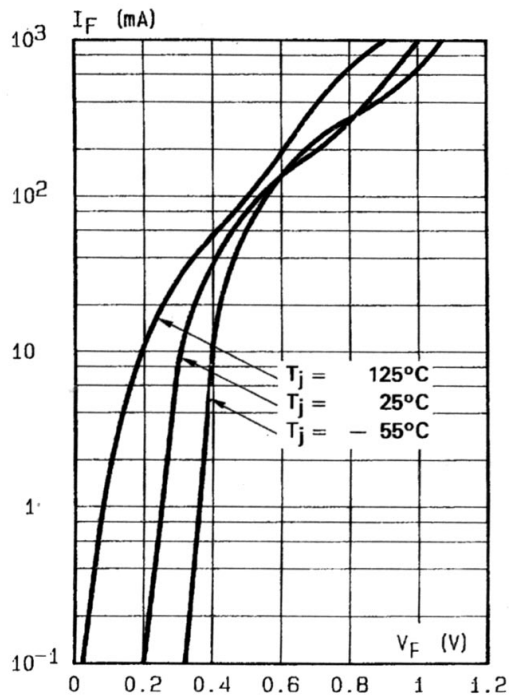


Fig. 2: Forward current versus forward voltage (typical values).

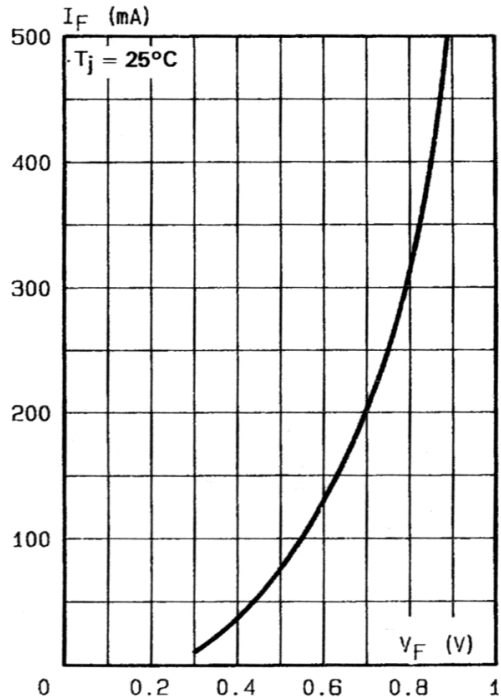


Fig. 3: Reverse current versus junction temperature.

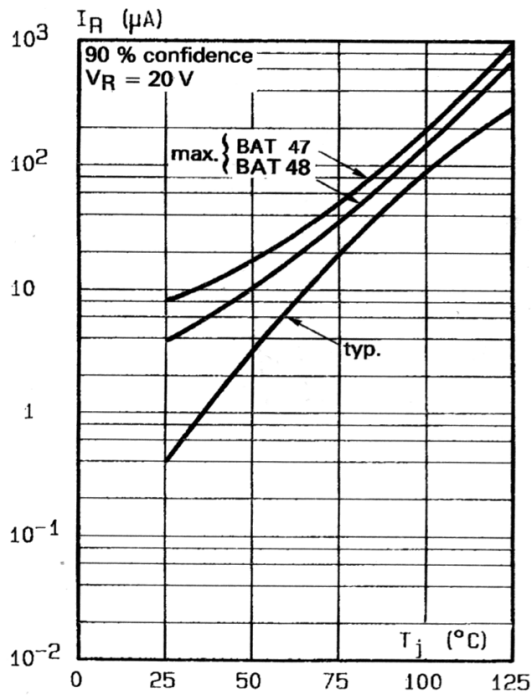


Fig. 4: Reverse current versus continuous reverse voltage (typical values).

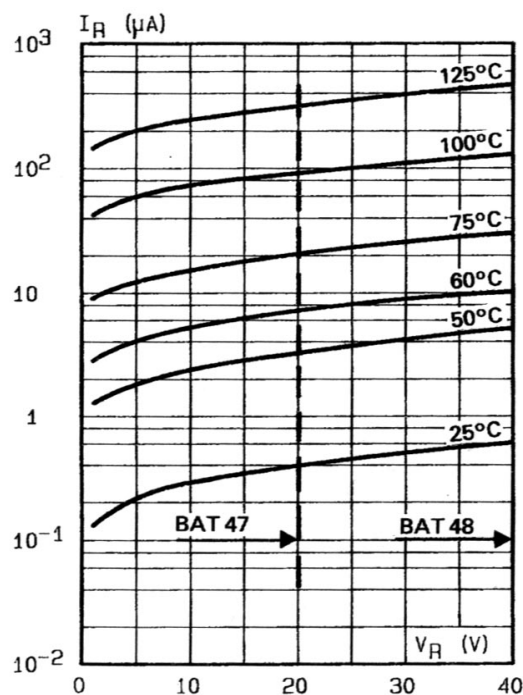
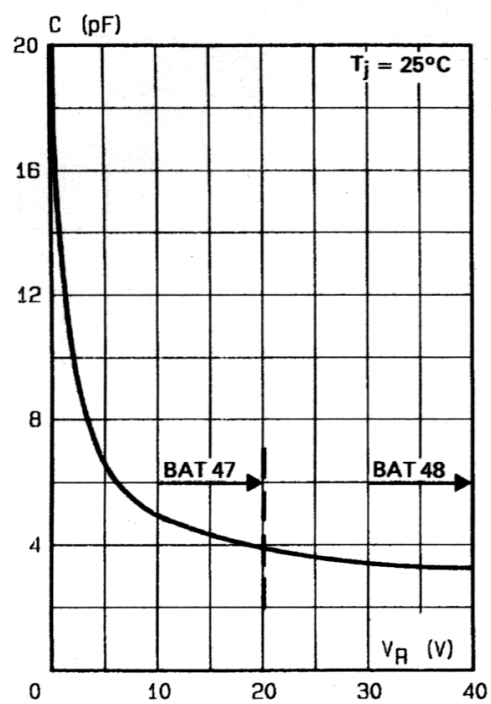


Fig. 5: Capacitance C versus reverse applied voltage V_R (typical values).



PACKAGE MECHANICAL DATA

DO-35

The image shows a mechanical drawing of a DO-35 package. It consists of a side view and a top view. The side view shows a central rectangular body of length A and two leads of length C extending from either side. The leads have a diameter of D. The top view shows a circular body with a diameter of B. The drawing includes dimension lines and arrows indicating the measurement of each dimension.

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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