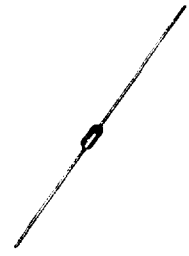
SGS-THOMSON MICROELECTRONICS

BAT 47
BAT 48

SMALL SIGNAL SCHOTTKY DIODES



DO 35
(Glass)

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		BAT 47	BAT 48	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 Forward Current*	$t_p \leq 1s$ $\delta \leq 0.5$	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 Lead Temperature for Soldering during 10s at 4mm from Case		230		°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction-ambient*	300	C/W

* On infinite heatsink with 4mm lead length

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
$V_{(BR)}$	I_R = 10µA		BAT 47	20			V
	I_R = 25µA		BAT 48	40			
V_F*	T_j = 25°C I_F = 0.1mA		All Types			0.25	V
	T_j = 25°C I_F = 1mA					0.3	
	T_j = 25°C I_F = 10mA					0.4	
	T_j = 25°C I_F = 30mA		BAT 47			0.5	
	T_j = 25°C I_F = 150mA					0.8	
	T_j = 25°C I_F = 300mA					1	
	T_j = 25°C I_F = 50mA		BAT 48			0.5	
	T_j = 25°C I_F = 200mA					0.75	
	T_j = 25°C I_F = 500mA					0.9	
I_R*	T_j = 25°C	V_R = 1.5V	All Types			1	µA
	T_j = 60°C					10	
	T_j = 25°C	V_R = 10V	BAT 47			4	
	T_j = 60°C					20	
	T_j = 25°C	V_R = 20V				10	
	T_j = 60°C					30	
	T_j = 25°C	V_R = 10V	BAT 48			2	
	T_j = 60°C					15	
	T_j = 25°C	V_R = 20V				5	
	T_j = 60°C					25	
	T_j = 25°C	V_R = 40V				25	
	T_j = 60°C					50	

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
C	T_j = 25°C V_R = 0V	f = 1MHz		20		pF
	T_j = 25°C V_R = 1V			12		
t_{rr}	T_j = 25°C I_F = 10mA V_R = 1V i_{rr} = 1mA R_L = 100Ω			10		ns

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

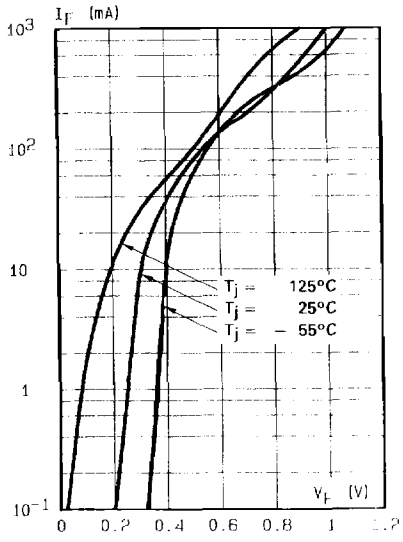


Fig.1 - Forward current versus forward voltage at different temperatures (typical values).

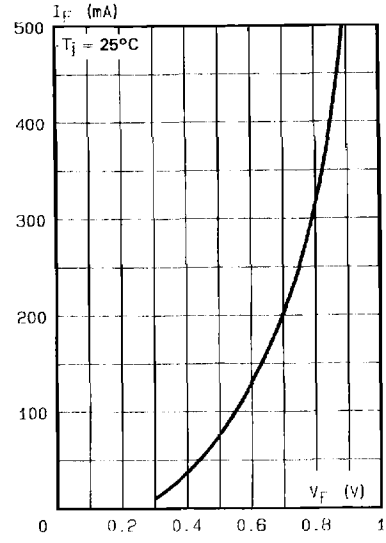


Fig.2 - Forward current versus forward voltage (typical values).

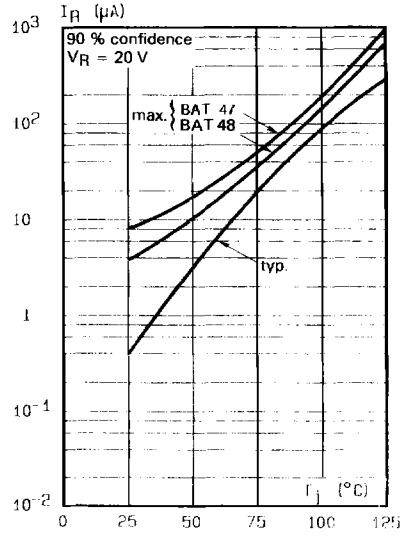


Fig.3 - Reverse current versus junction temperature.

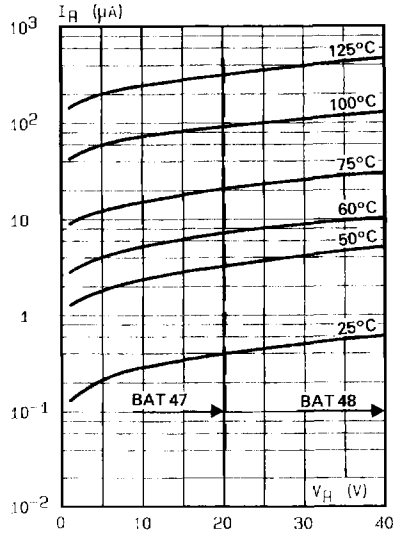


Fig.4 - Reverse current versus continuous reverse voltage (typical values).

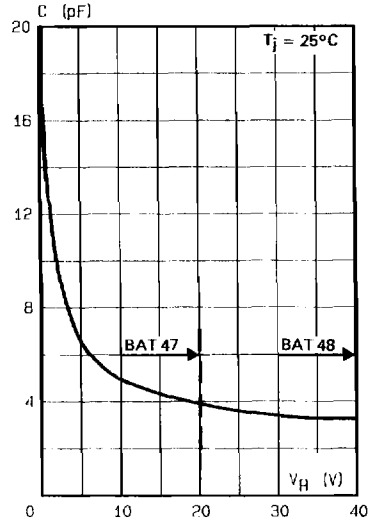
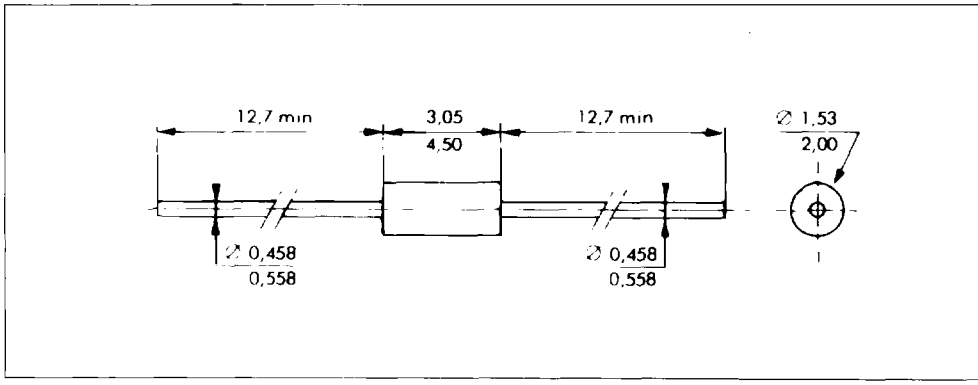


Fig.5 - Capacitance C versus reverse applied voltage V_R (typical values).

PACKAGE MECHANICAL DATA

DO 35 Glass



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