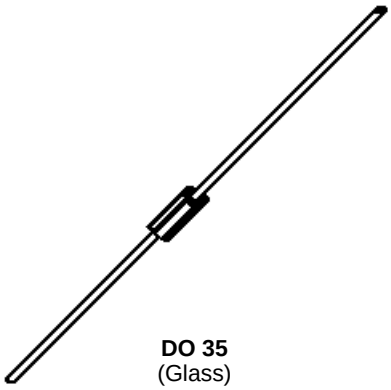
SGS-THOMSON MICROELECTRONICS

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		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 Fordware 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 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	°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		BAT47	20			V
	I_R = 25µA		BAT48	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		BAT47			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		BAT48			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	BAT47			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	BAT48			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: $t_p \leq 300\mu s$ $\delta < 2\%$.

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

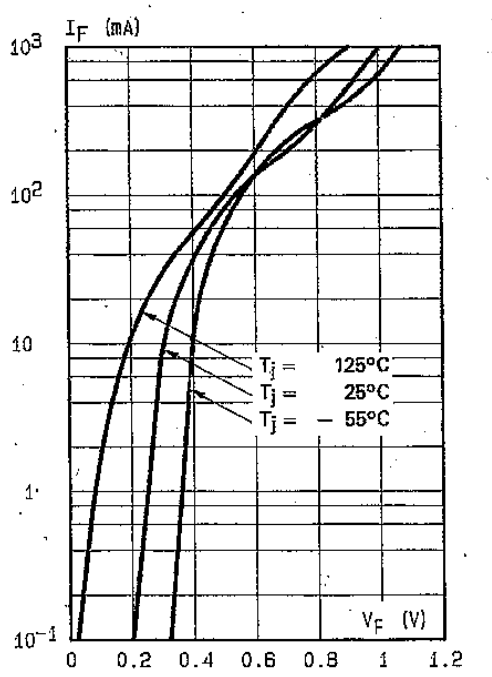


Figure 2. Forward current versus forward voltage (typical values).

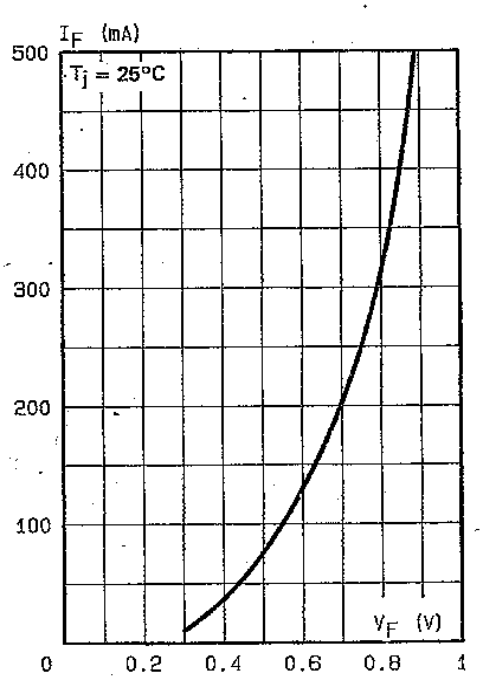


Figure 3. Reverse current versus junction temperature.

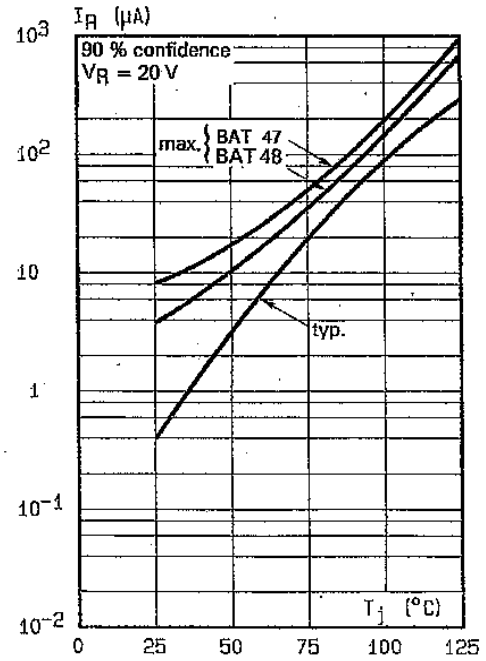


Figure 4. Reverse current versus continuous reverse voltage (typical values).

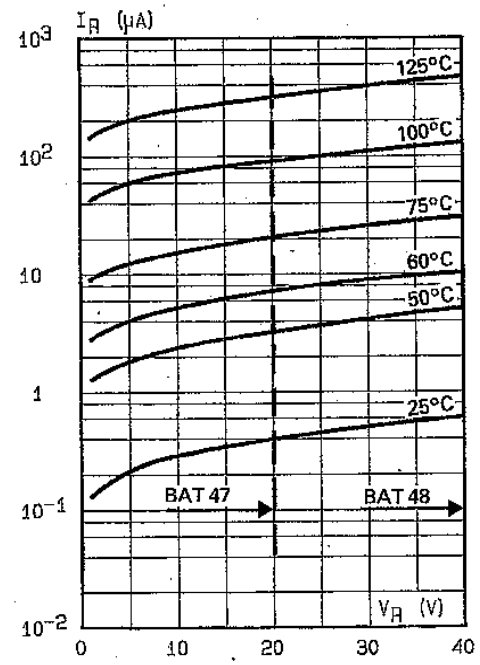
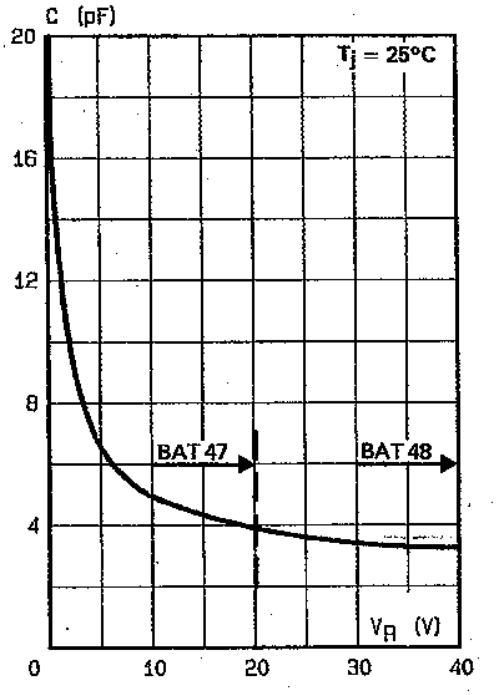
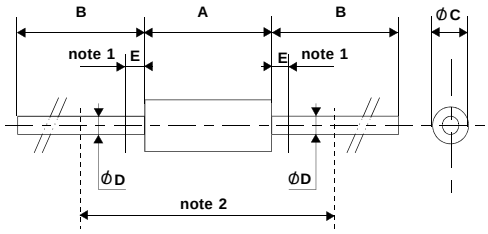


Figure 5. Capacitance C versus reverse applied voltage V_R (typical values).



PACKAGE MECHANICAL DATA

DO 35 Glass



REF.	DIMENSIONS				NOTES
	Millimeters		Inches		
	Min.	Max.	Min.	Max.	
A	3.050	4.500	0.120	0.117	1 - The lead diameter ∅ D is not controlled over zone E 2 - The minimum axial lengh within which the device may be placed with its leads bent at right angles is 0.59"(15 mm)
B	12.7		0.500		
∅ C	1.530	2.000	0.060	0.079	
∅ D	0.458	0.558	0.018	0.022	
E		1.27		0.050	

Cooling method: by convection and conduction.
Marking: clear, ring at cathode end.
Weight: 0.015g