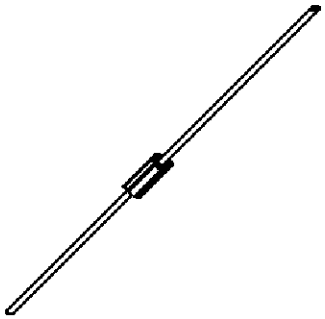
SGS-THOMSON MICROELECTRONICS

BAT 46

SMALL SIGNAL SCHOTTKY DIODE



DO 35
(Glass)

DESCRIPTION

General purpose, metal to silicon diode featuring high breakdown voltage low turn-on voltage.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		100	V
I_F	Forward Continuous Current*	T_a = 25 °C	150	mA
I_{FRM}	Repetitive Peak Forward Current*	$t_p \leq 1s$ $\delta \leq 0.5$	350	mA
I_{FSM}	Surge non Repetitive Forward Current*	t_p = 10ms	750	mA
P_{tot}	Power Dissipation*	T_l = 80 °C	150	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
$R_{th(j-a)}$	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}	T_j = 25°C	I_R = 10µA	100			V
V_F*	T_j = 25°C	I_F = 0.1mA			0.25	V
	T_j = 25°C	I_F = 10mA			0.45	
	T_j = 25°C	I_F = 250mA			1	
I_R*	T_j = 25°C	V_R = 1.5V			0.5	µA
	T_j = 60°C				5	
	T_j = 25°C	V_R = 10V			0.8	
	T_j = 60°C				7.5	
	T_j = 25°C	V_R = 50V			2	
	T_j = 60°C				15	
	T_j = 25°C	V_R = 75V			5	
	T_j = 60°C				20	

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	T_j = 25°C	V_R = 0V	f = 1MHz		10		pF
	T_j = 25°C	V_R = 1V			6		

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

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

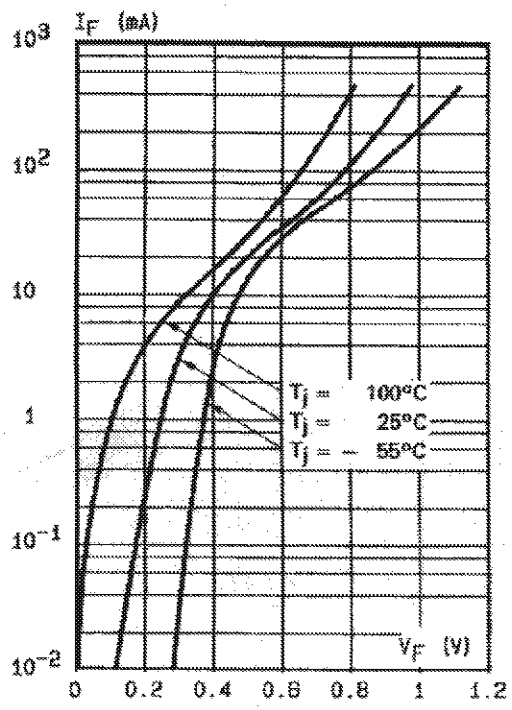


Figure 2. Forward current versus forward voltage (typical values).

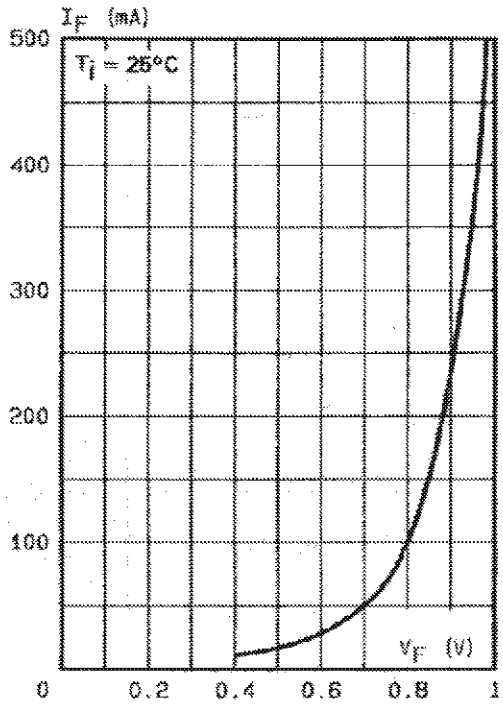


Figure 3. Reverse current versus junction temperature (typical values).

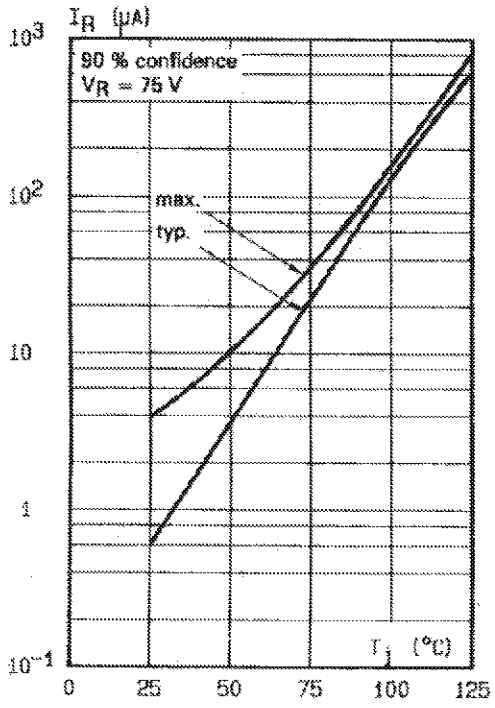


Figure 4. Reverse current versus continuous reverse voltage.

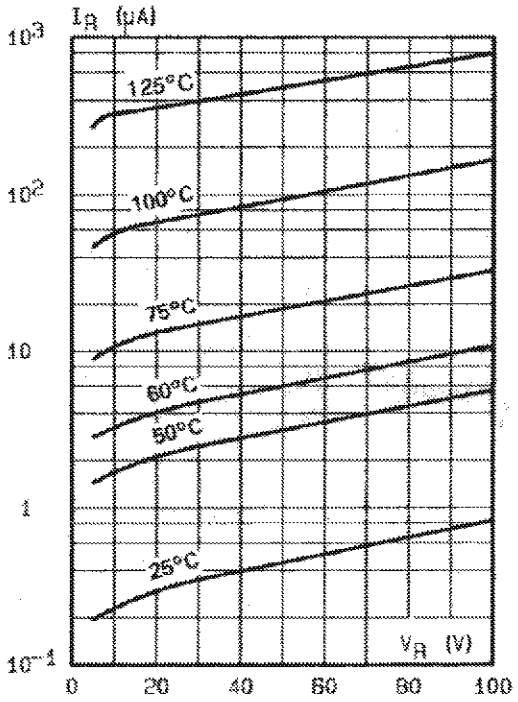
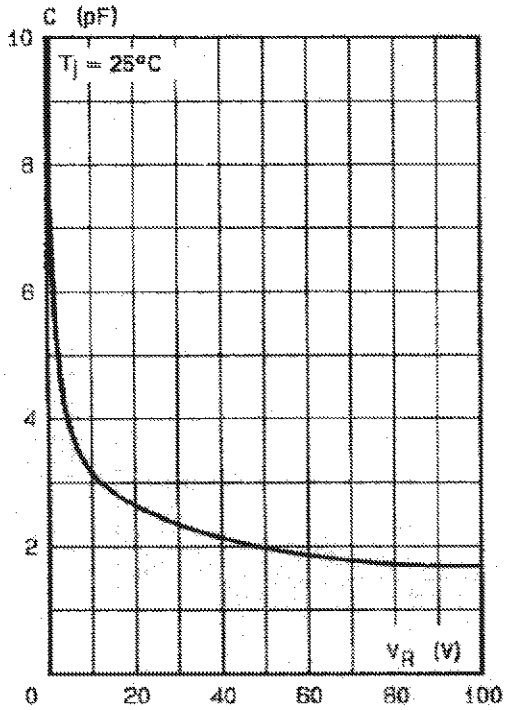
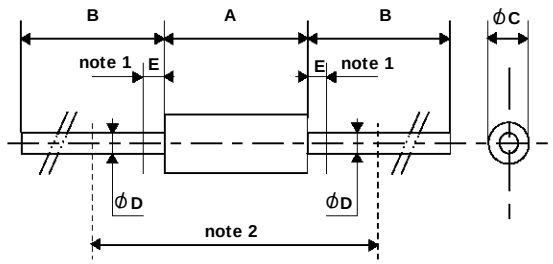


Figure 5. Capacitance C versus reverse applied voltage V_R (typical values).



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: ring at cathode end.
Weight: 0.05g