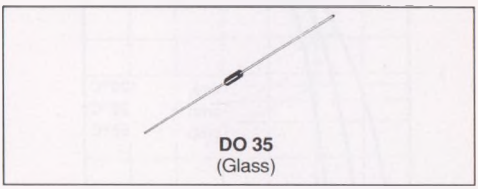
SGS-THOMSON MICROELECTRONICS

BAT 19

SMALL SIGNAL SCHOTTKY DIODE



DO 35
(Glass)

DESCRIPTION

Metal to silicon junction diode primarily intented for UHF mixers and ultrafast switching applications.

Matched batches are available on request.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		10	V
I_F	Forward Continuous Current*	T_a = 25°C	30	mA
I_{FSM}	Surge non Repetitive Forward Current*	$t_p \leq$ 1s	60	mA
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150 125	°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*	400	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)}$	T_{amb} = 25°C	I_R = 10µA	10			V
V_F (1)	T_{amb} = 25°C	I_F = 1mA			0.4	V
	T_{amb} = 25°C	I_F = 20mA			1	
I_R (1)	T_{amb} = 25°C	V_R = 5V			0.1	µA

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	T_{amb} = 25°C	V_R = 0V	f = 1GHz			1.2	pF
τ	T_{amb} = 25°C	I_F = 20mA	Krakauer Method			100	ps
F (2)	T_{amb} = 25°C	f = 1GHz			6		dB

* On infinite heatsink with 4mm lead length

(1) Pulse test : $t_p \leq 300\mu s$ $\delta < 2\%$

(2) Noise figure test :

- diode is inserted in a tuned stripline circuit
- local oscillator frequency 1GHz
- local oscillator power 1mW
- intermediate frequency amplifier, tuned on 30MHz, has a noise figure 1.5dB

Matched batches available on request. Test conditions (forward voltage and/or capacitance) according to customer specification.

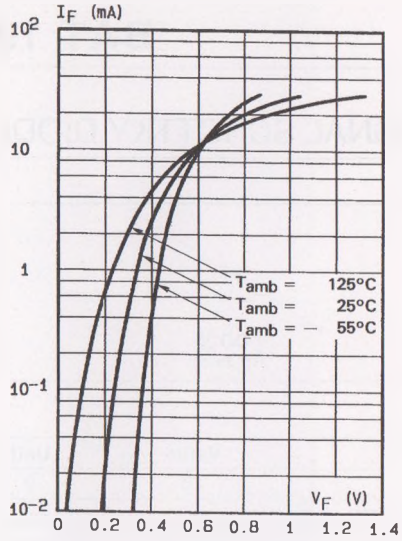


Fig.1 - Forward current versus forward voltage at low level (typical values).

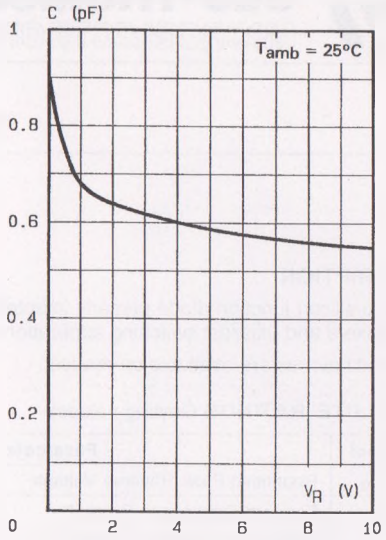


Fig.2 - Capacitance C versus reverse applied voltage V_R (typical values).

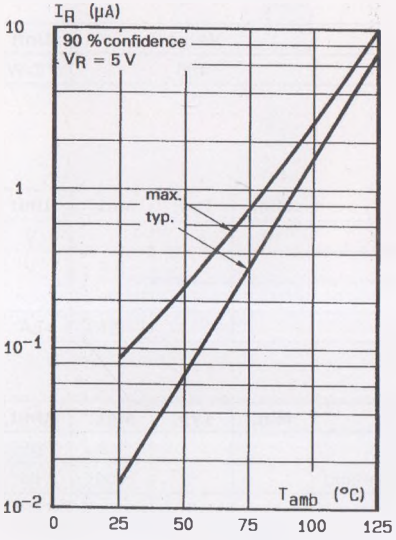


Fig.3 - Reverse current versus ambient temperature.

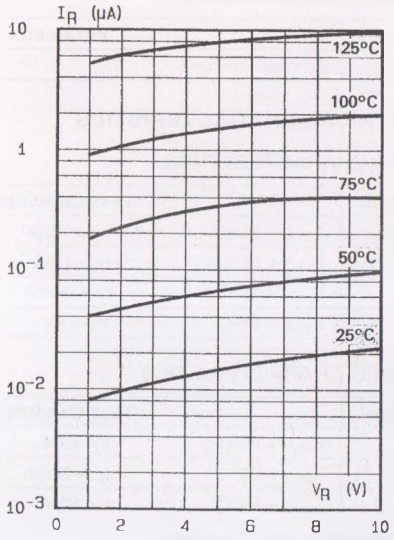


Fig.4 - Reverse current versus continuous reverse voltage (typical values).