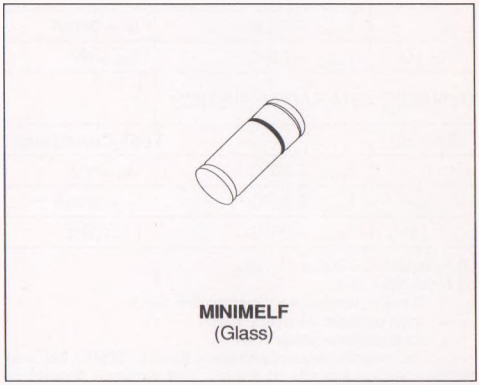
SGS-THOMSON MICROELECTRONICS

TMMBAT 45

SMALL SIGNAL SCHOTTKY DIODE



MINIMELF
(Glass)

DESCRIPTION

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

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		15	V
I_F	Forward Continuous Current	T_l = 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 Temperature for Soldering during 15s		260	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-l)}$	Junction-leads	400	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)}$	T_{amb} = 25°C	I_R = 10µA	15			V
V_F (1)	T_{amb} = 25°C	I_F = 1mA			0.38	V
	T_{amb} = 25°C	I_F = 10mA			0.5	
	T_{amb} = 25°C	I_F = 30mA			1	
I_R (1)	T_{amb} = 25°C	V_R = 6V			0.1	µA

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	T_{amb} = 25°C	V_R = 1V	f = 1MHz			1.1	pF
τ	T_{amb} = 25°C	I_F = 20mA	Krakauer Method			100	ps
F (2)	T_{amb} = 25°C	f = 1GHz			6	7	dB

(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.

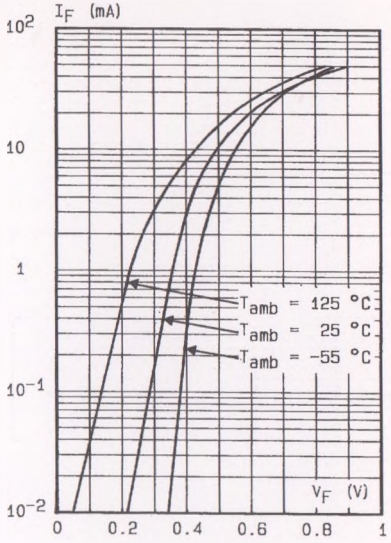


Fig.1 - Forward current versus forward voltage (typical values).

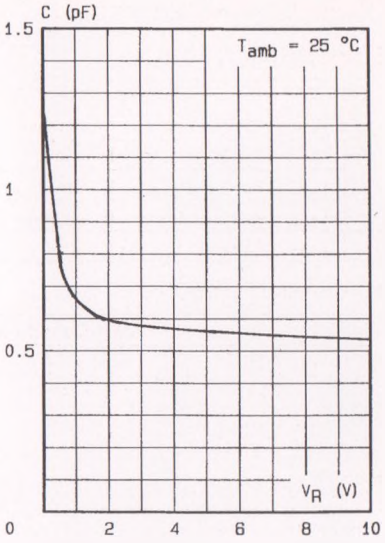


Fig.2 - Capacitance C versus reverse applied voltage V_R (typical values).

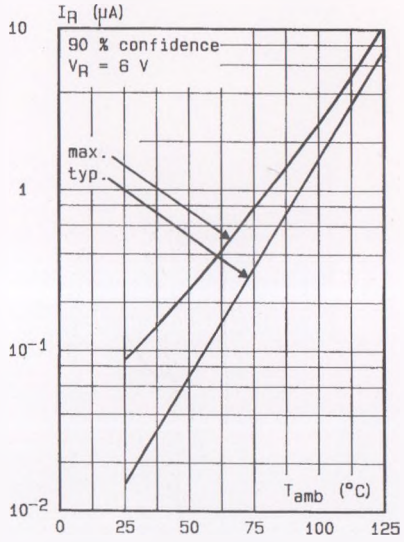


Fig.3 - Reverse current versus ambient temperature.

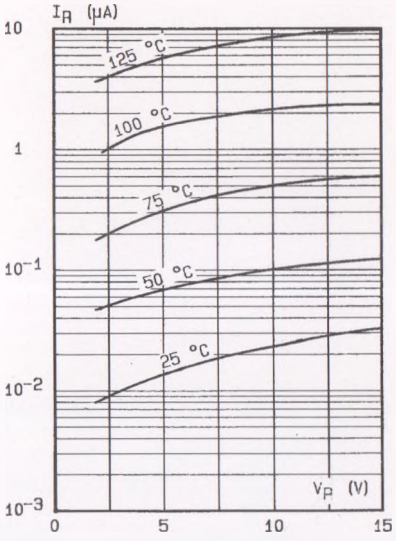


Fig.4 - Reverse current versus continuous reverse voltage (typical values).