SGS-THOMSON MICROELECTRONICS

BAT 17, DS

SMALL SIGNAL SCHOTTKY DIODES

BAT 17

BAT 17, DS

SOT 23
(Plastic)

DESCRIPTION

BAT 17 is a metal to silicon junction diode featuring low turn-on voltage, low capacitance and ultrafast switching. Single or double series connected diodes are available. Two double diodes can be connected in bridge or ing configuration.
These devices are suited for single or double balanced UHF mixers, sampling circuits, modulators, phase detectors.

ABSOLUTE RATINGS (limiting values) (T_{amb} = 25°C)

Symbol	Parameter	Value	Unit
V_R	Continuous Reverse Voltage	4	V
I_F	Continuous Forward Current	30	mA
T_{stg} T_j	Storage and Junction Temperature Range	– 65 to 100 100	°C °C

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th\ (j\text{-}a)}$	Junction-ambient*	625	°C/W
$R_{th\ (j\text{-}SR)}$	Junction-substrate	400	°C/W

* Mounted on ceramic substrate : 7 x 5 x 0.5mm.

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)}$	T_{amb} = 25°C	I_R = 10µA	4			V
V_F	T_{amb} = 25°C	I_F = 10mA			0.6	V
I_R	T_{amb} = 25°C	V_R = 3V			0.25	µA
	T_{amb} = 60°C				1.25	

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	T_{amb} = 25°C	V_R = 0	f = 1MHz			1	pF
F	T_{amb} = 25°C	F = 1GHz	See note			7	dB
r	T_{amb} = 25°C	I_F = 5mA	F = 1KHz			15	Ω

Note : NOISE FIGURE TEST
- Diode is inserted in a tuned stripline circuit
- Local oscillator frequency : 1GHz
- Local oscillator power : 1mW
- Intermediary frequency amplifier, tuned on 30MHz, has a noise figure : 1.5dB.

Marking : A3 for BAT 17
D85 for BAT 17DS

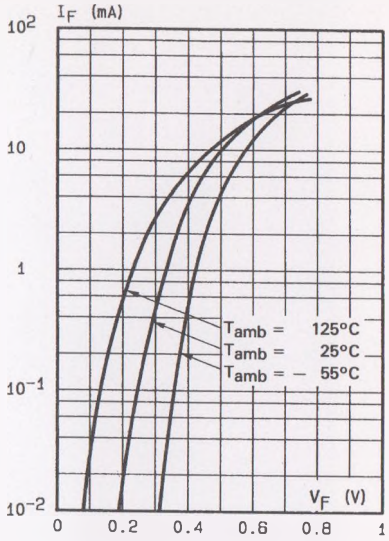

Fig.1 - Forward current versus forward voltage (typical values).

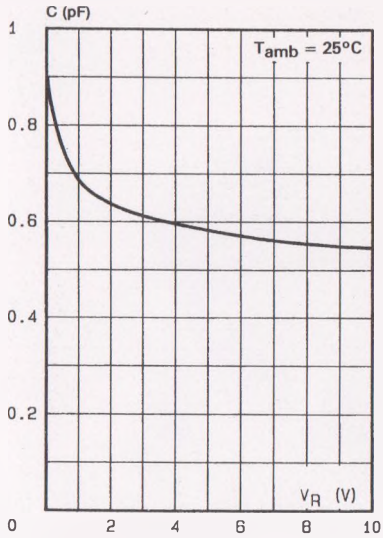

Fig.2 - Capacitance C versus reverse applied voltage V_R (typical values).

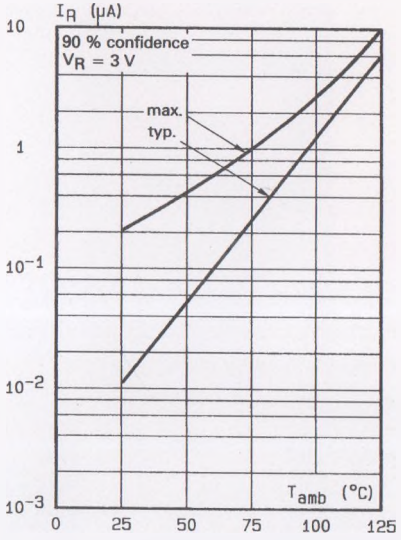

Fig.3 - Reverse current versus ambient temperature.

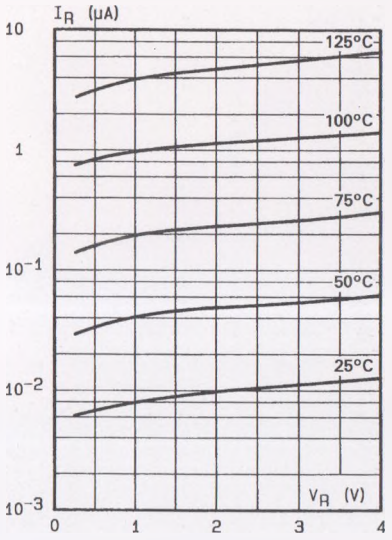

Fig.4 - Reverse current versus continuous reverse voltage (typical values).