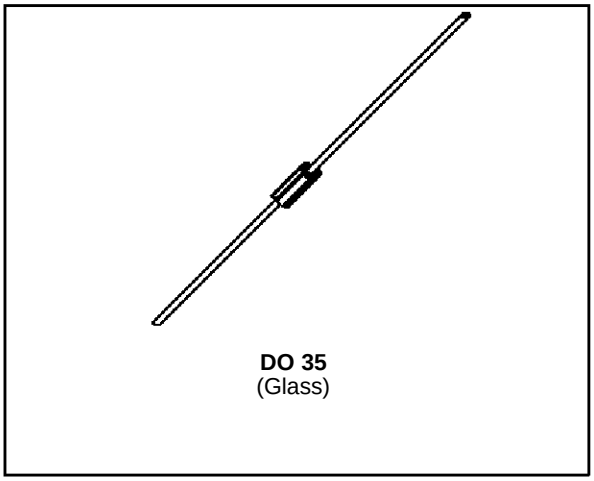
SGS-THOMSON MICROELECTRONICS

BAT 45

SMALL SIGNAL SCHOTTKY DIODE



DO 35
(Glass)

DESCRIPTION

Metal to silicon junction diode primarly intended 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	$T_a = 25°C$	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 - 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*	400	°C/W

* On infinite heatsink with 4mm lead length

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 300MHz, has a noise figure 1.5dB

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

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

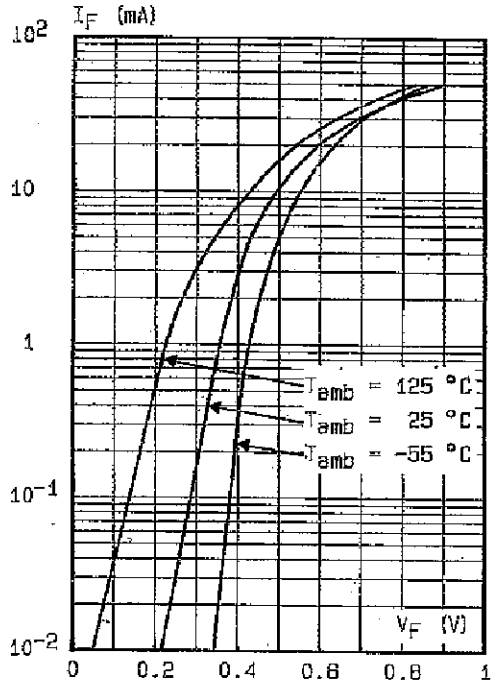


Figure 2. Forward current versus forward voltage (typical values).

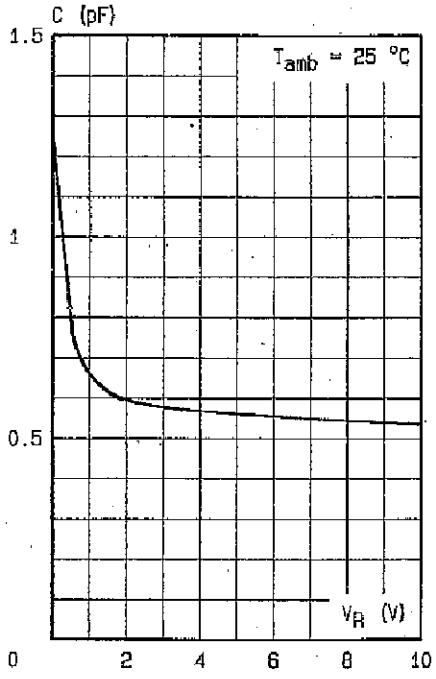


Figure 3. Reverse current versus junction temperature.

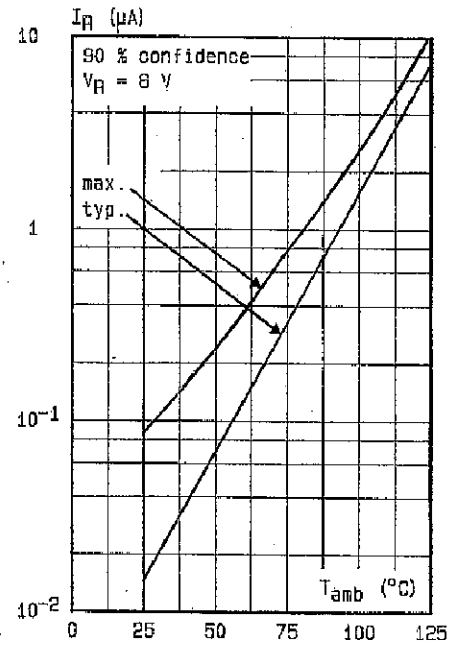
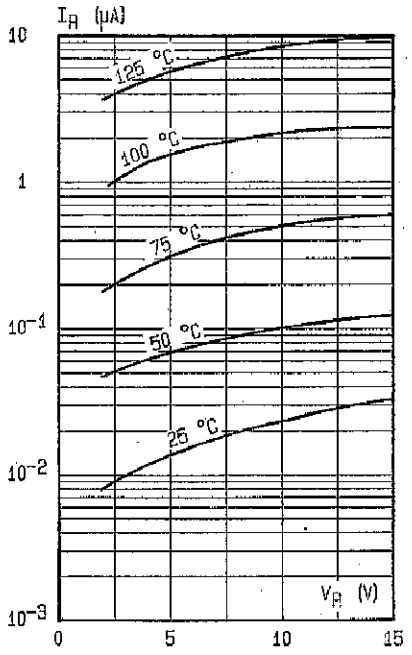
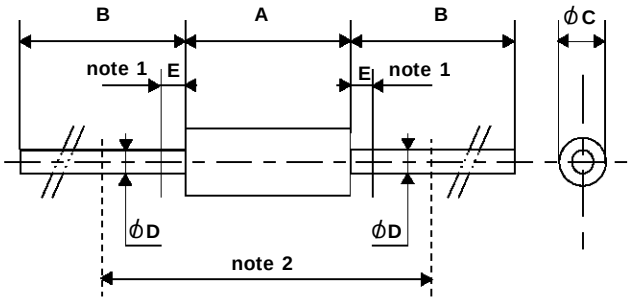


Figure 4. Reverse current versus continuous reverse voltage (typical values).



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	

Marking: clear, ring at cathode end.
Weight: 0.15g
Cooling method: by convection and conduction

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