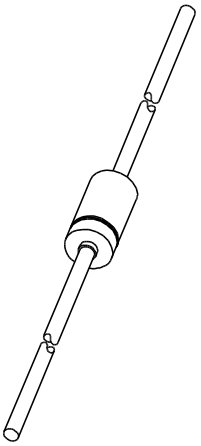
DATA SHEET



BA481
UHF mixer diode

Product specification
File under Discrete Semiconductors, SC01

1996 Mar 19

Philips
Semiconductors

PHILIPS

UHF mixer diode BA481

FEATURES

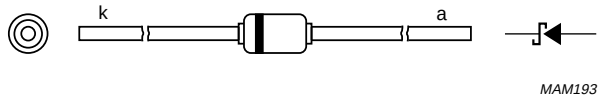
- Low forward voltage
- Hermetically-sealed leaded glass package
- Low diode capacitance.

APPLICATIONS

- UHF mixer
- Sampling circuits
- Modulators
- Phase detection.

DESCRIPTION

Planar Schottky barrier diode encapsulated in a hermetically-sealed subminiature SOD68 (DO-34) glass package. The diode is suitable for mounting on a 2 E (5.08 mm) pitch.



Cathode indicated by a grey band.

Fig.1 Simplified outline (SOD68; DO-34), and symbol.

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
V_R	continuous reverse voltage	–	4	V
I_F	continuous forward current	–	30	mA
T_{stg}	storage temperature	–65	+125	°C
T_j	junction temperature	–	100	°C

ELECTRICAL CHARACTERISTICS

T_{amb} = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
V_F	forward voltage	see Fig.2		
		I_F = 1 mA	450	mV
		I_F = 10 mA	600	mV
I_R	reverse current	V_R = 4 V; see Fig.3	10	μA
		V_R = 4 V; T_{amb} = 60 °C; see Fig.3	100	μA
r_s	series resistance	f = 1 kHz; I_F = 5 mA	13	Ω
F	noise figure	f = 900 MHz; note 1	8	dB
C_d	diode capacitance	f = 1 MHz; V_R = 0 V; see Fig.4	1.1	pF

Note

1. The local oscillator is adjusted for a diode current of 2 mA.
   IF amplifier noise F_{if} = 1.5 dB; f = 35 MHz.

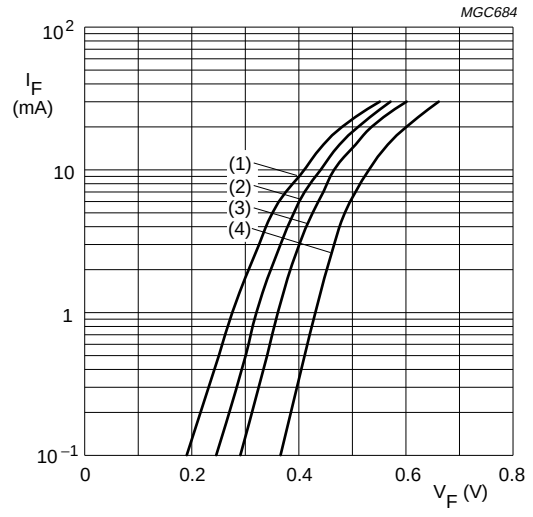
THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j\text{-}a}$	thermal resistance from junction to ambient	note 1	320	KW

Note

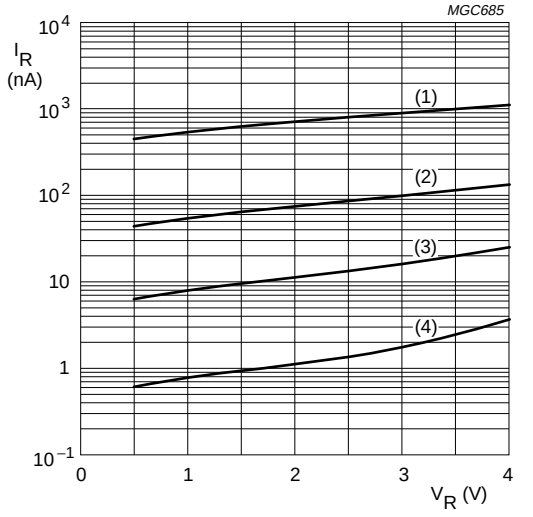
1. Refer to SOD68 standard mounting conditions.

GRAPHICAL DATA



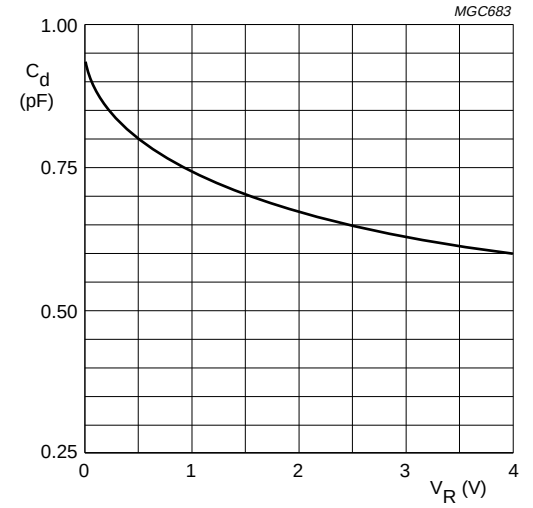
(1) T_{amb} = 100 °C.
(2) T_{amb} = 60 °C.
(3) T_{amb} = 25 °C.
(4) T_{amb} = –40 °C.

Fig.2 Forward current as a function of forward voltage; typical values.



(1) T_{amb} = 100 °C.
(2) T_{amb} = 60 °C.
(3) T_{amb} = 25 °C.
(4) T_{amb} = –40 °C.

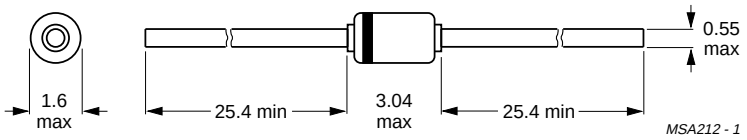
Fig.3 Reverse current as a function of reverse voltage; typical values.



f = 1 MHz.

Fig.4 Diode capacitance as a function of reverse voltage; typical values.

PACKAGE OUTLINE



Dimensions in mm.

The grey marking band indicates the cathode.

Fig.5 SOD68 (DO-34).

DEFINITIONS

Data Sheet Status	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
Limiting values	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.	
Application information	
Where application information is given, it is advisory and does not form part of the specification.	

LIFE SUPPORT APPLICATIONS

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