DISCRETE SEMICONDUCTORS

DATA SHEET



BA481UHF mixer diode

Product specification
File under Discrete Semiconductors, SC01

1996 Mar 19





Philips Semiconductors Product specification

UHF mixer diode BA481

FEATURES

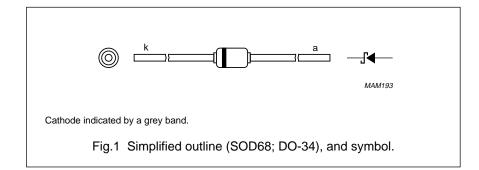
- Low forward voltage
- Hermetically-sealed leaded glass package
- Low diode capacitance.

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.



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
Tj	junction temperature	_	100	°C

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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	μΑ
		$V_R = 4 \text{ V}; T_{amb} = 60 ^{\circ}\text{C}; \text{ see Fig.3}$	100	μΑ
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

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R _{th j-a}	thermal resistance from junction to ambient	note 1	320	KW

Note

1. Refer to SOD68 standard mounting conditions.

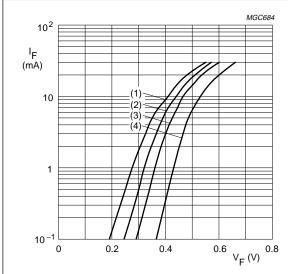
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^{1.} The local oscillator is adjusted for a diode current of 2 mA. IF amplifier noise F_{if} = 1.5 dB; f = 35 MHz.

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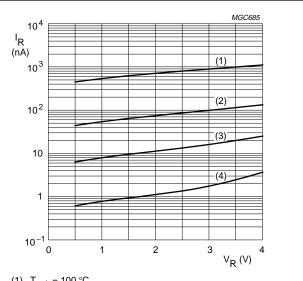
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GRAPHICAL DATA



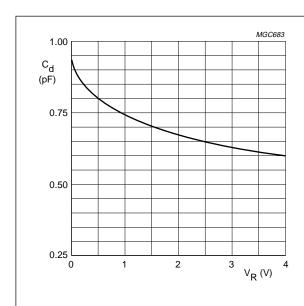
- (1) $T_{amb} = 100 \,^{\circ}C$.
- (2) $T_{amb} = 60 \, ^{\circ}C$.
- (3) $T_{amb} = 25 \, ^{\circ}C$.
- (4) $T_{amb} = -40 \, ^{\circ}C$.

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



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



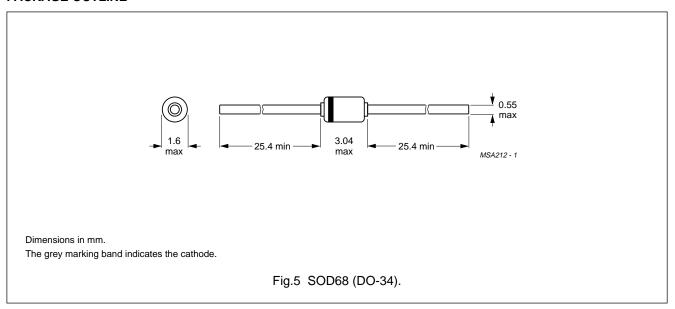
f = 1 MHz.

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

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PACKAGE OUTLINE



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

These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.

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