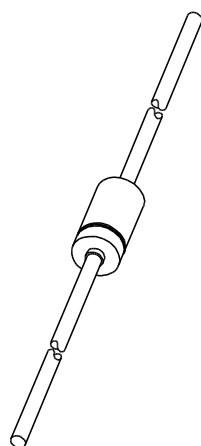


# DATA SHEET



## **BA481** UHF mixer diode

Product specification  
File under Discrete Semiconductors, SC01

1996 Mar 19

UHF mixer diode

BA481

FEATURES

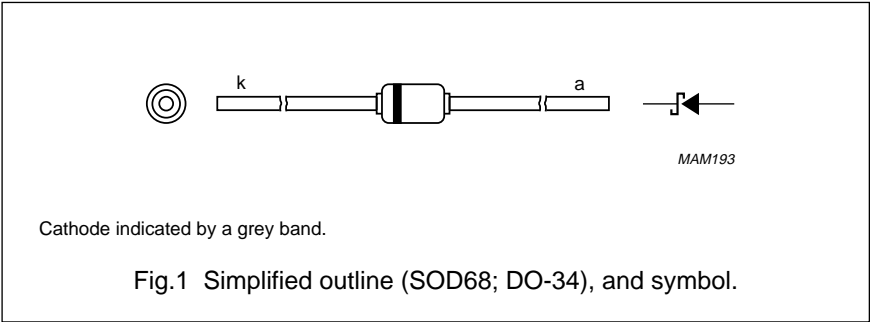
- Low forward voltage
- Hermetically-sealed leaded glass package
- Low diode capacitance.

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
$T_j$	junction temperature	–	100	°C

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**ELECTRICAL CHARACTERISTICS** $T_{\text{amb}} = 25\text{ }^{\circ}\text{C}$  unless otherwise specified.

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

**Note**

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

**THERMAL CHARACTERISTICS**

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

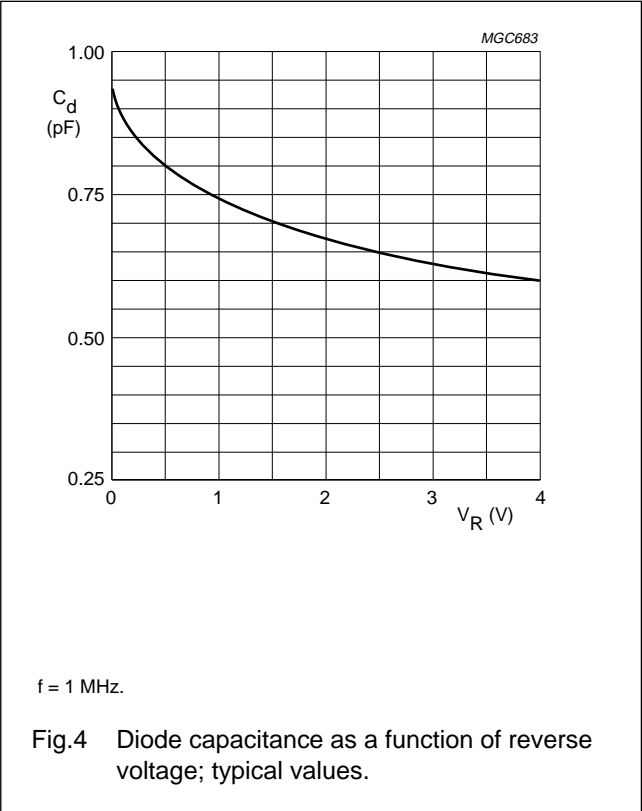
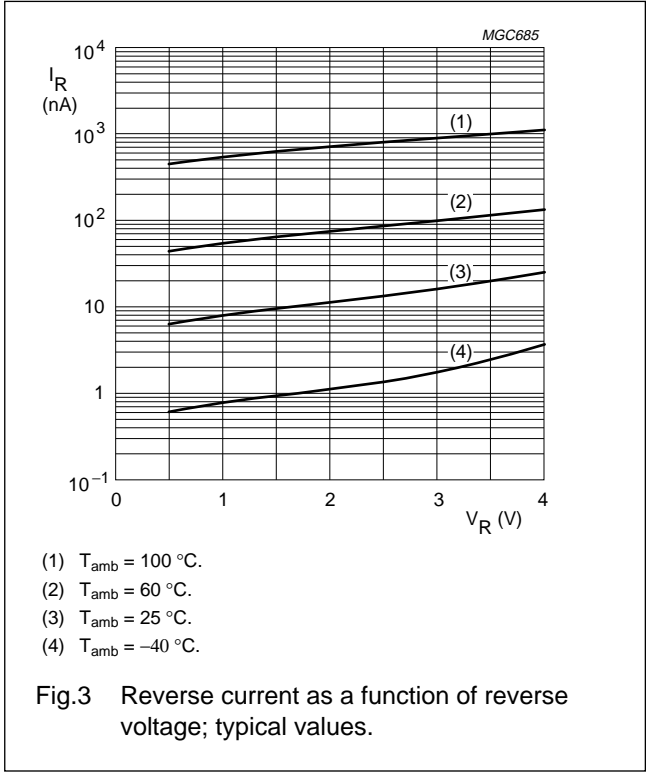
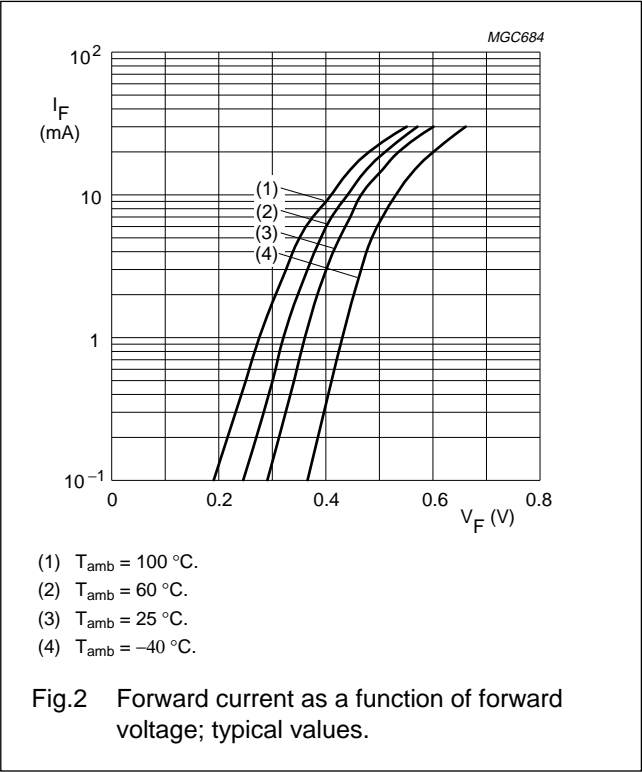
**Note**

- Refer to SOD68 standard mounting conditions.

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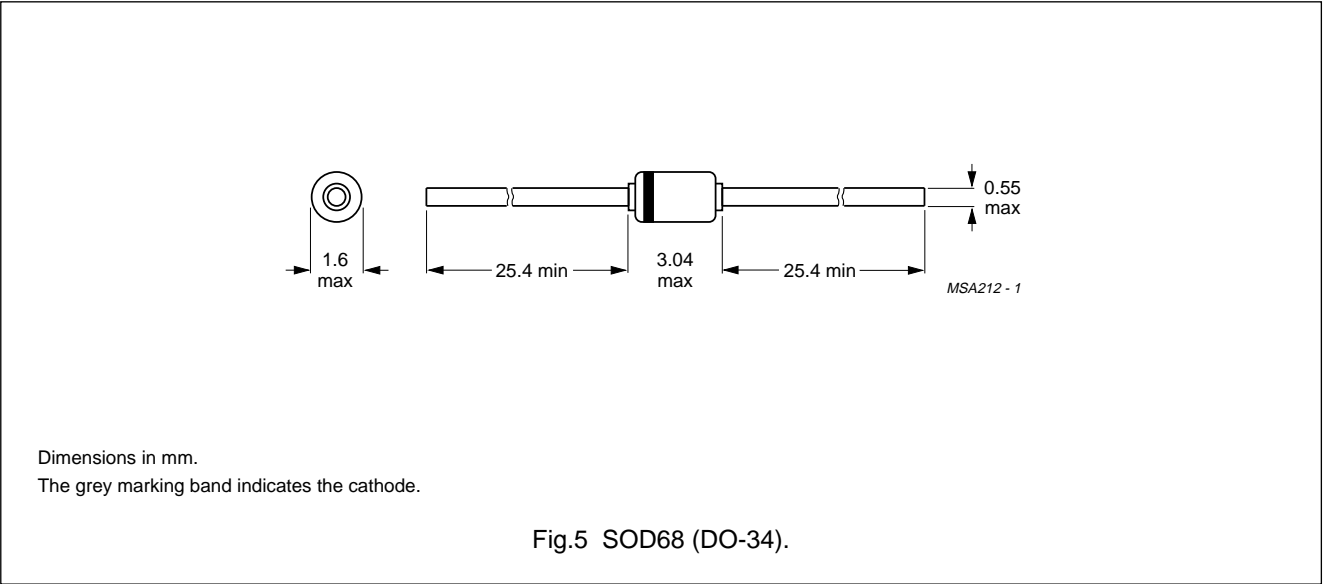
GRAPHICAL DATA



UHF mixer diode

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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.