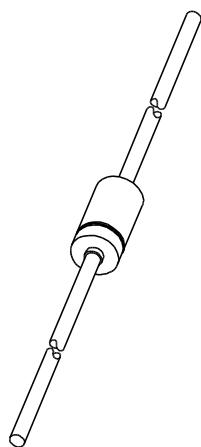


# DATA SHEET



## **BA481** UHF mixer diode

Product specification  
File under Discrete Semiconductors, SC01

1996 Mar 19

**UHF mixer diode****BA481****FEATURES**

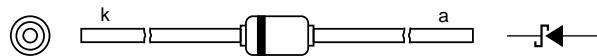
- Low forward voltage
- Hermetically-sealed leaded glass package
- Low diode capacitance.

**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.



MAM193

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

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## ELECTRICAL CHARACTERISTICS

 $T_{amb} = 25^\circ\text{C}$  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
$I_R$	reverse current	$V_R = 4 \text{ V}$ ; see Fig.3	10	$\mu\text{A}$
		$V_R = 4 \text{ V}$ ; $T_{amb} = 60^\circ\text{C}$ ; see Fig.3	100	$\mu\text{A}$
$r_s$	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

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

## THERMAL CHARACTERISTICS

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

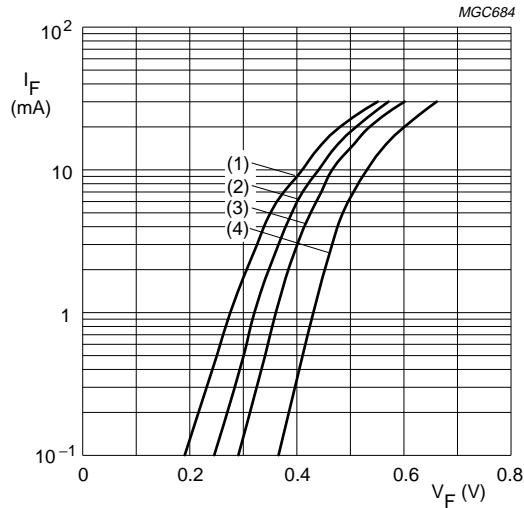
## Note

1. Refer to SOD68 standard mounting conditions.

## UHF mixer diode

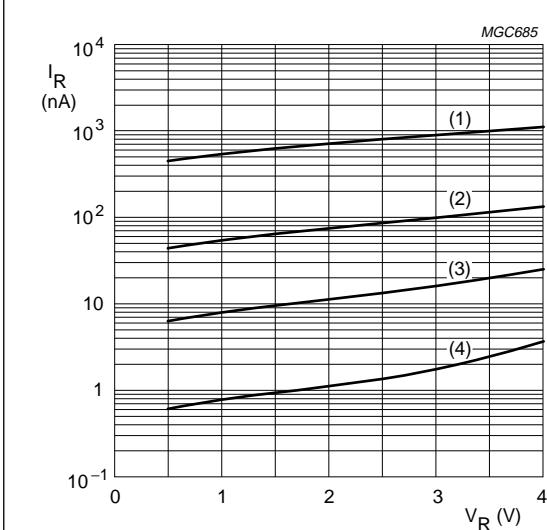
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## GRAPHICAL DATA



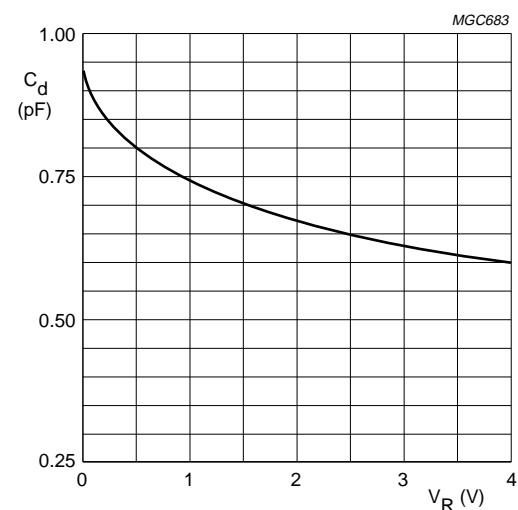
- (1)  $T_{amb} = 100$  °C.
- (2)  $T_{amb} = 60$  °C.
- (3)  $T_{amb} = 25$  °C.
- (4)  $T_{amb} = -40$  °C.

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.



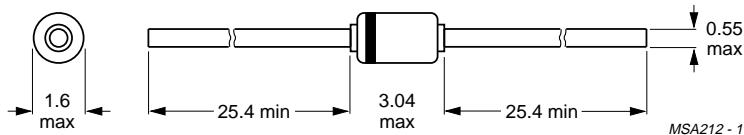
$f = 1$  MHz.

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

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## PACKAGE OUTLINE



Dimensions in mm.

The grey marking band indicates the cathode.

Fig.5 SOD68 (DO-34).

## DEFINITIONS

<b>Data Sheet Status</b>	
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.
<b>Limiting values</b>	
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.	
<b>Application information</b>	
Where application information is given, it is advisory and does not form part of the specification.	

## LIFE SUPPORT APPLICATIONS

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