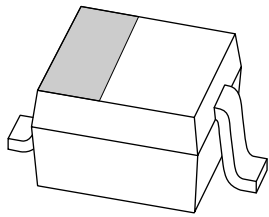


# DATA SHEET



**BB131**

VHF variable capacitance diode

Product specification  
Supersedes data of 1998 Sep 15

2004 Feb 10

# VHF variable capacitance diode

**BB131**

## FEATURES

- Excellent linearity
- Very small plastic SMD package
- C28: 1 pF; ratio: 14.

## APPLICATIONS

- Electronic tuning in satellite tuners
- Tunable coupling
- VCO.

## DESCRIPTION

The BB131 is a variable capacitance diode, fabricated in planar technology, and encapsulated in the SOD323 (SC-76) very small plastic SMD package.

## PINNING

PIN	DESCRIPTION
1	cathode
2	anode

**Marking code:** P1.  
The marking bar indicates the cathode.

Fig.1 Simplified outline (SOD323; SC-76) and symbol.

## ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
BB131	–	plastic surface mounted package; 2 leads	SOD323

## LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 60134).

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
$V_R$	continuous reverse voltage	–	30	V
$I_F$	continuous forward current	–	20	mA
$T_{stg}$	storage temperature	–55	+150	°C
$T_j$	operating junction temperature	–55	+125	°C

## VHF variable capacitance diode

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**CHARACTERISTICS** $T_j = 25\text{ °C}$  unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$I_R$	reverse current	$V_R = 30\text{ V}$ ; see Fig.3	–	10	nA
		$V_R = 30\text{ V}$ ; $T_j = 85\text{ °C}$ ; see Fig.3	–	200	nA
$r_s$	diode series resistance	$f = 470\text{ MHz}$ ; note 1	–	3	$\Omega$
$C_d$	diode capacitance	$V_R = 0.5\text{ V}$ ; $f = 1\text{ MHz}$ ; see Figs 2 and 4	8	17	pF
		$V_R = 28\text{ V}$ ; $f = 1\text{ MHz}$ ; see Figs 2 and 4	0.7	1.055	pF
$\frac{C_{d(0.5V)}}{C_{d(28V)}}$	capacitance ratio	$f = 1\text{ MHz}$	12	16	

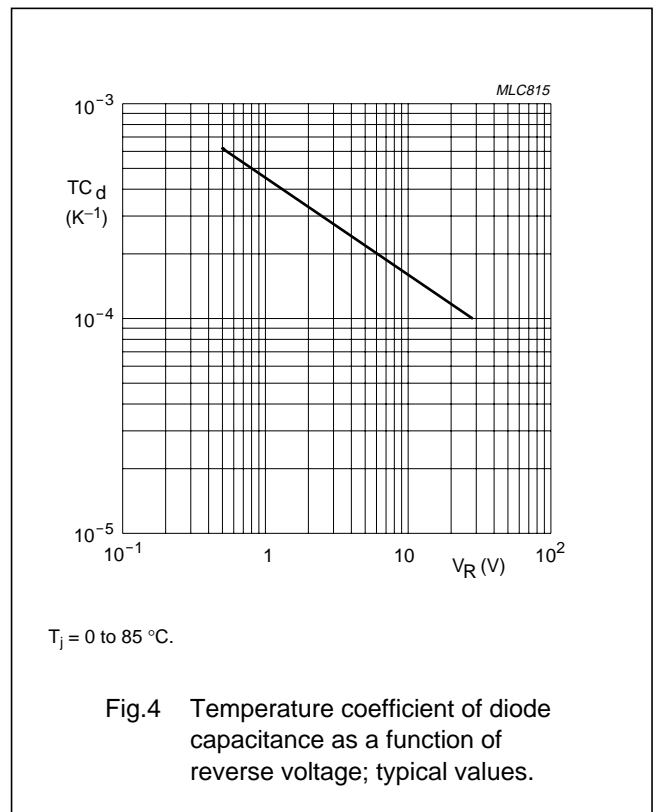
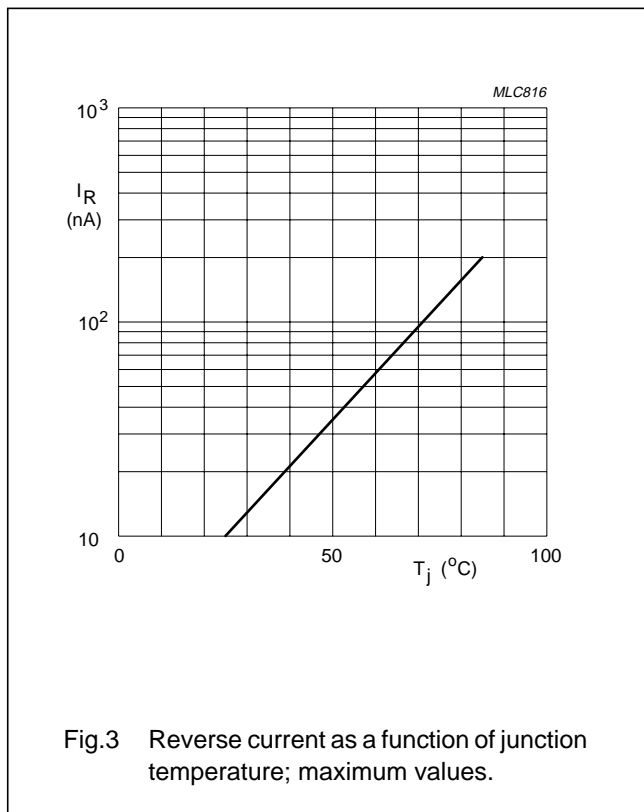
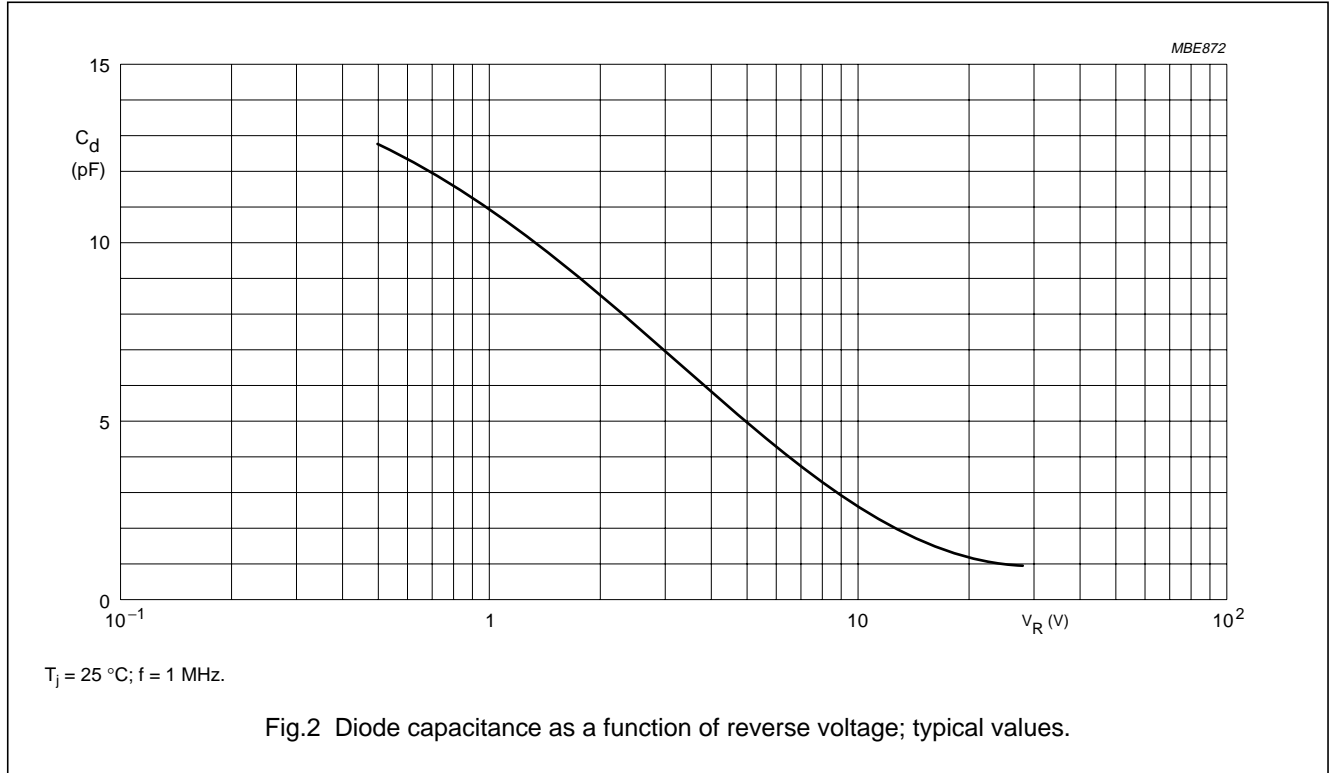
**Note**

- $V_R$  is the value at which  $C_d = 9\text{ pF}$ .

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GRAPHICAL DATA



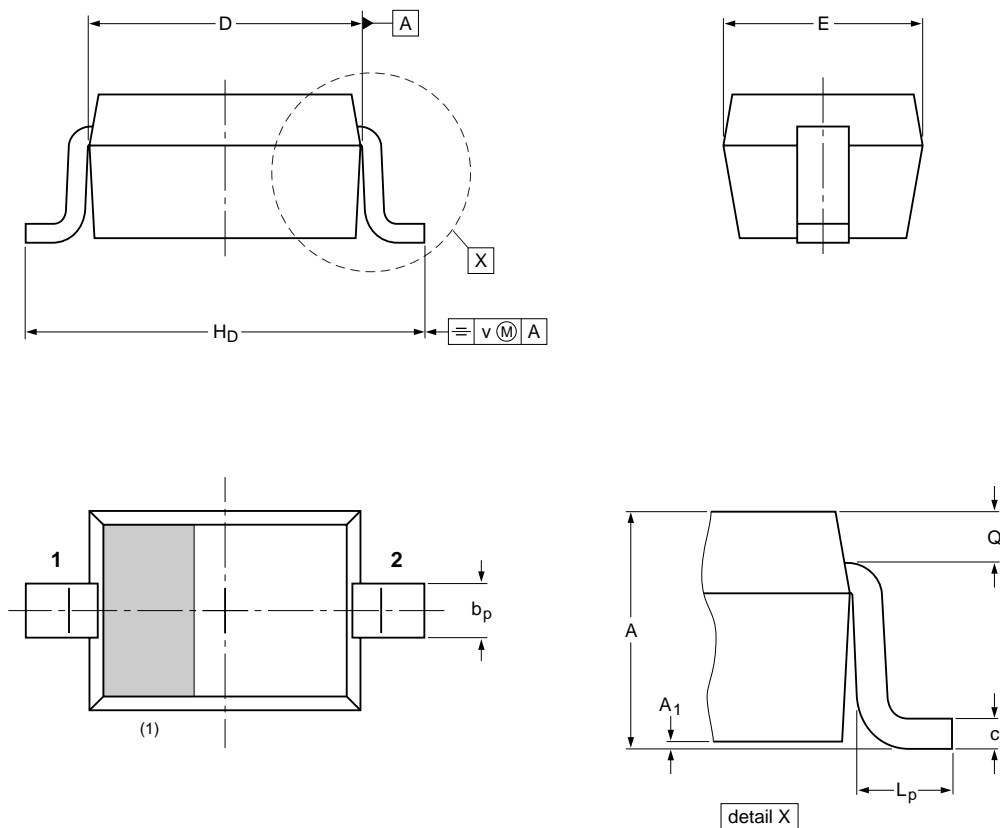
VHF variable capacitance diode

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PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD323



DIMENSIONS (mm are the original dimensions)

UNIT	A	A <sub>1</sub> max	b <sub>p</sub>	c	D	E	H <sub>D</sub>	L <sub>p</sub>	Q	v
mm	1.1 0.8	0.05	0.40 0.25	0.25 0.10	1.8 1.6	1.35 1.15	2.7 2.3	0.45 0.15	0.25 0.15	0.2

Note  
1. The marking bar indicates the cathode

OUTLINE VERSION	REFERENCES			EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA		
SOD323			SC-76		99-09-13 03-12-17

## VHF variable capacitance diode

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## DATA SHEET STATUS

LEVEL	DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)(3)</sup>	DEFINITION
I	Objective data	Development	This data sheet contains data from the objective specification for product development. Philips Semiconductors reserves the right to change the specification in any manner without notice.
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