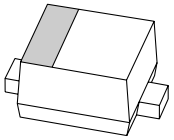

BB181

VHF variable capacitance diode

Rev. 02 — 2 January 2008 Product data sheet

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NXP Semiconductors

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VHF variable capacitance diode BB181

FEATURES

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

APPLICATIONS

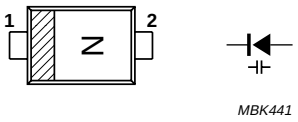
- Electronic tuning in satellite tuners
- Tuneable coupling
- Voltage controlled oscillators (VCO).

DESCRIPTION

The BB181 is a variable capacitance diode, fabricated in planar technology and encapsulated in the SOD523 (SC-79) ultra small plastic SMD package.

PINNING

PIN	DESCRIPTION
1	cathode
2	anode



Marking code: N.
Orientation of marking code as shown.
Cathode side indicated by a bar.

Fig.1 Simplified outline (SOD523; SC-79) and symbol.

LIMITING VALUES

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

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	+150	°C

ELECTRICAL CHARACTERISTICS

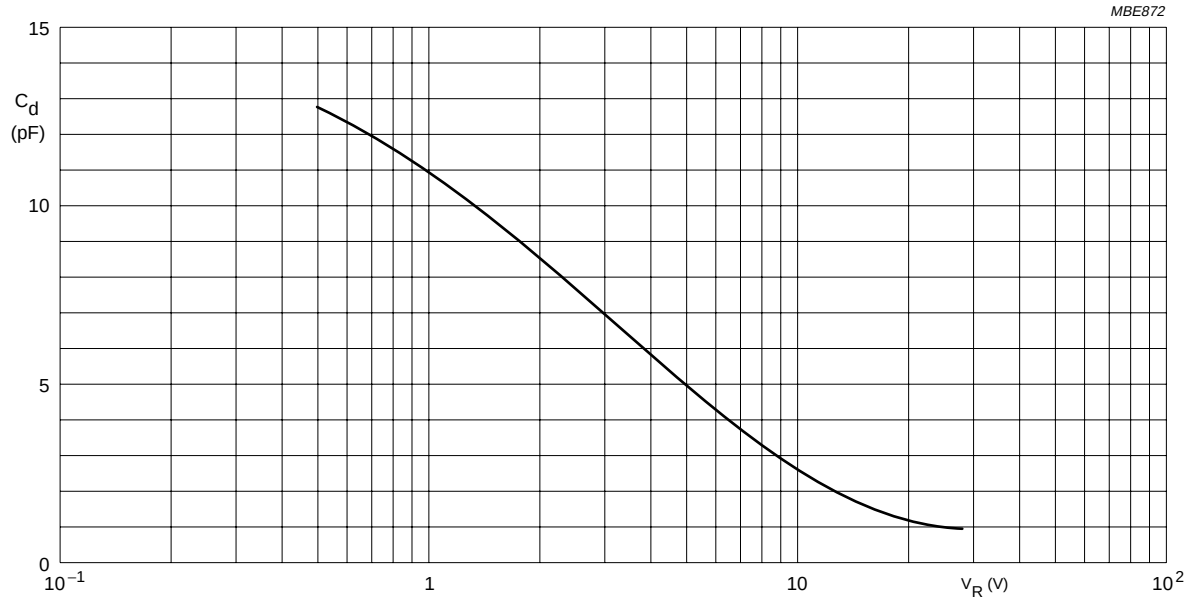
T_j = 25 °C unless otherwise specified.

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

Note

1. V_R is the value at which C_d = 9 pF.

GRAPHICAL DATA



f = 1 MHz; T_j = 25 °C.

Fig.2 Diode capacitance as a function of reverse voltage; typical values.

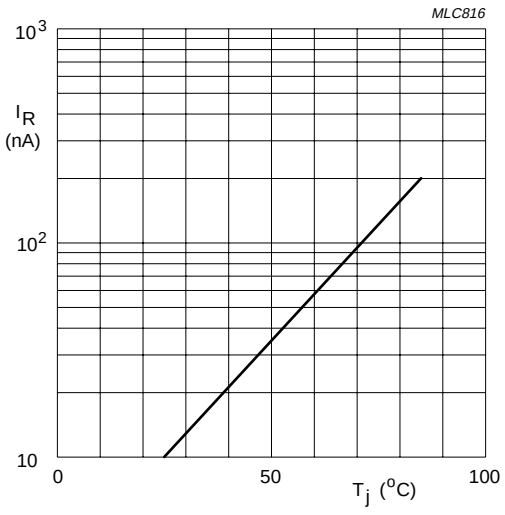
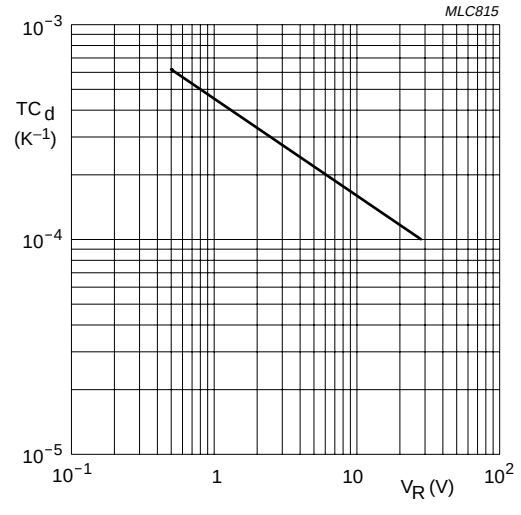


Fig.3 Reverse current as a function of junction temperature; maximum values.

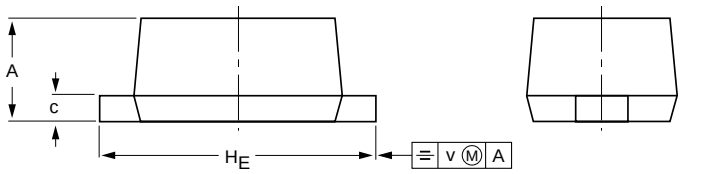


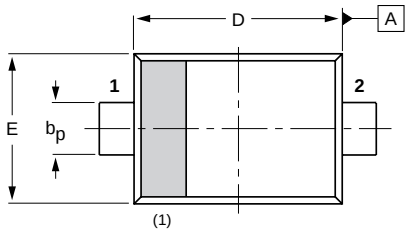
T_j = 0 to 85 °C.

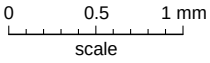
Fig.4 Temperature coefficient of diode capacitance as a function of reverse voltage; typical values.

PACKAGE OUTLINE

Plastic surface-mounted package; 2 leads **SOD523**







DIMENSIONS (mm are the original dimensions)

UNIT	A	b_p	c	D	E	H_E	v
mm	0.65 0.58	0.34 0.26	0.17 0.11	1.25 1.15	0.85 0.75	1.65 1.55	0.1

Note

1. The marking bar indicates the cathode.

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOD523			SC-79			~~02-12-13~~ 06-03-16

Legal information

Data sheet status

Document status[1][2]	Product status[3]	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

[1] Please consult the most recently issued document before initiating or completing a design.

[2] The term 'short data sheet' is explained in section "Definitions".

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Revision history

Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
BB181_N_2	20080102	Product data sheet	-	BB181_1
Modifications:	• Package outline drawing on page 4 changed			
BB181_1 (9397 750 04886)	19981126	Product specification	-	-

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Date of release: 2 January 2008
Document identifier: BB181_N_2