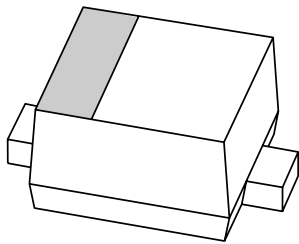


DATA SHEET



BB187

VHF variable capacitance diode

Product specification
Supersedes data of 1999 Oct 19

2002 Feb 20

VHF variable capacitance diode

BB187

FEATURES

- High linearity
- Excellent matching to 2% DMA
- Ultra small plastic SMD package
- C25: 2.75 pF; ratio: min. 11
- Low series resistance.

APPLICATIONS

- Electronic tuning in VHF television tuners
- Voltage controlled oscillators (VCO).

DESCRIPTION

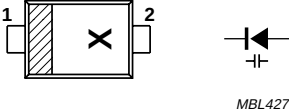
The BB187 is a variable capacitance diode, fabricated in planar technology and encapsulated in the SOD523 (SC-79) ultra small plastic SMD package. The excellent matching performance is achieved by gliding matching and a Direct Matching Assembly (DMA) procedure.

MARKING

TYPE NUMBER	MARKING CODE
BB187	X

PINNING

PIN	DESCRIPTION
1	cathode
2	anode



Orientation of marking code as shown.
The marking bar indicates the cathode.

Fig.1 Simplified outline (SOD523) and symbol.

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _R	continuous reverse voltage		–	32	V
V _{RM}	peak reverse voltage	in series with a 10 kΩ resistor	–	35	V
I _F	continuous forward current		–	20	mA
T _{stg}	storage temperature		–55	+150	°C
T _j	operating junction temperature		–55	+150	°C

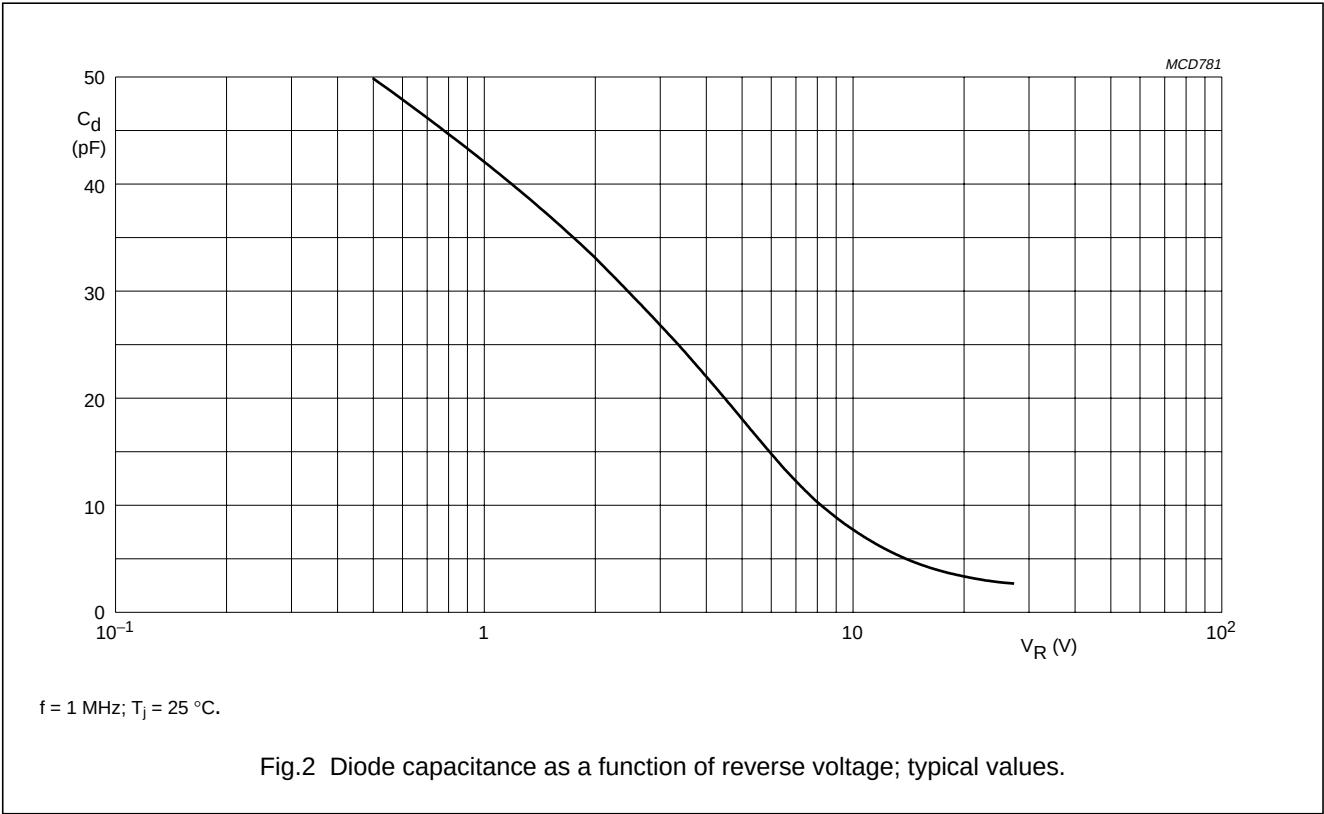
VHF variable capacitance diode

BB187

CHARACTERISTICS

T_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	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; V _R = 5 V	–	–	0.75	Ω
C _d	diode capacitance	V _R = 2 V; f = 1 MHz; see Figs 2 and 4	29.3	–	34.2	pF
		V _R = 25 V; f = 1 MHz; see Figs 2 and 4	2.57	–	2.92	pF
$\frac{C_{d(2V)}}{C_{d(25V)}}$	capacitance ratio	f = 1 MHz	11	–	–	
$\frac{\Delta C_d}{C_d}$	capacitance matching	V _R = 2 to 25 V; in a sequence of 15 diodes (gliding)	–	–	2	%



VHF variable capacitance diode

BB187

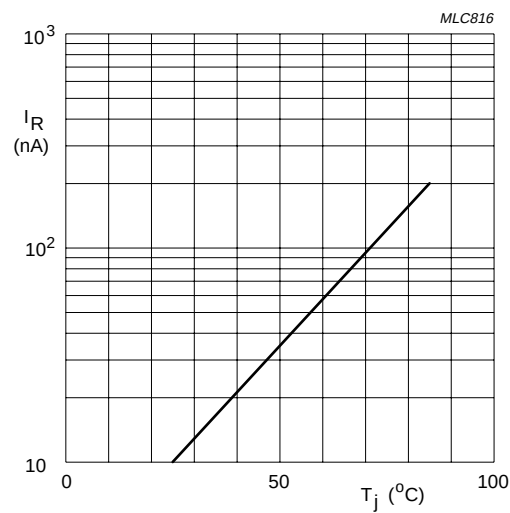


Fig.3 Reverse current as a function of junction temperature; maximum values.

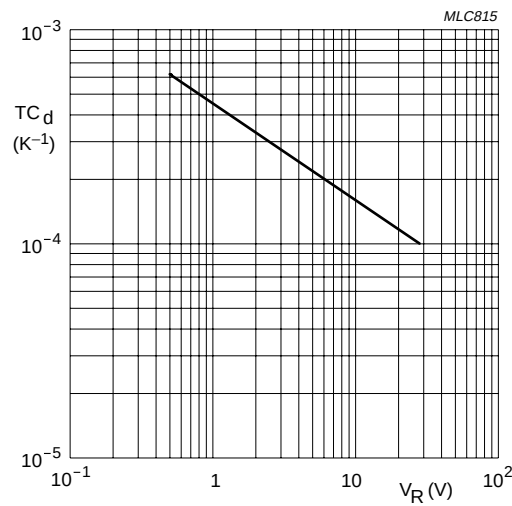


Fig.4 Temperature coefficient of diode capacitance as a function of reverse voltage; typical values.

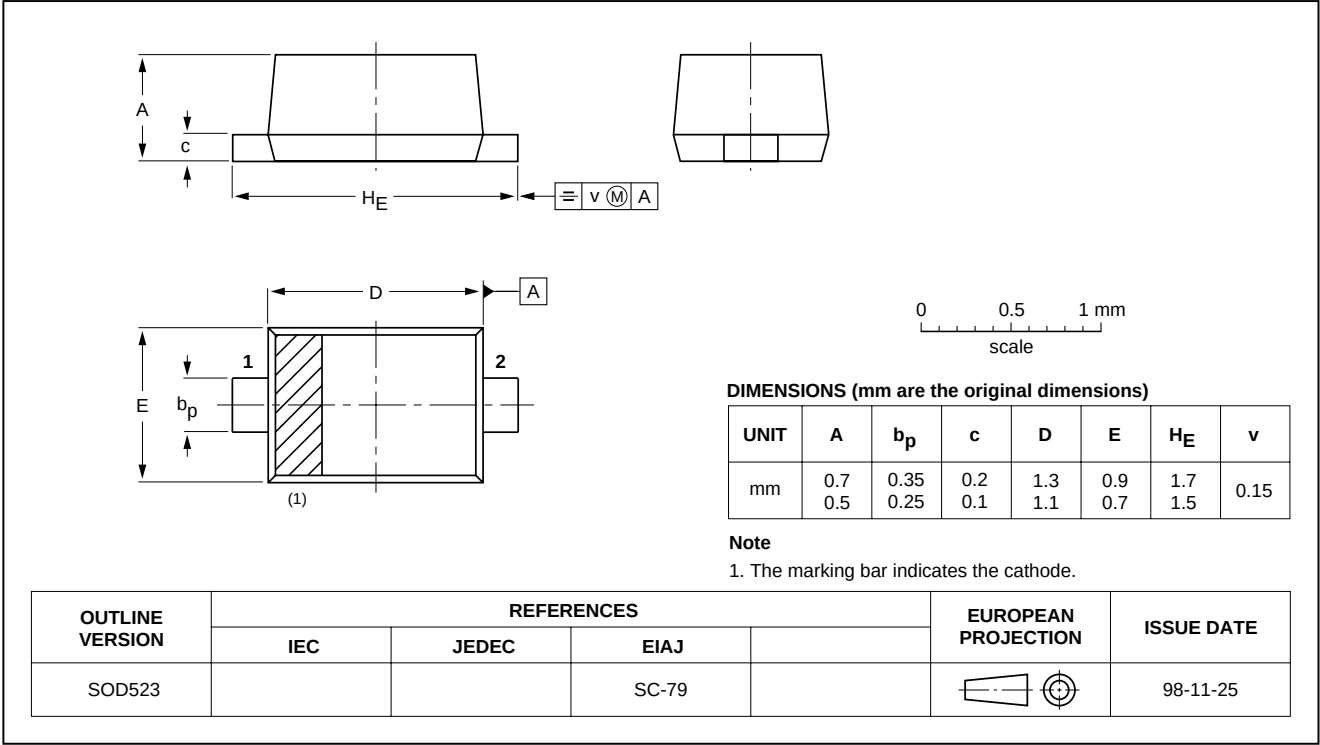
VHF variable capacitance diode

BB187

PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD523



VHF variable capacitance diode

BB187

DATA SHEET STATUS

DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITIONS
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.
Preliminary data	Qualification	This data sheet contains data from the preliminary specification. Supplementary data will be published at a later date. Philips Semiconductors reserves the right to change the specification without notice, in order to improve the design and supply the best possible product.
Product data	Production	This data sheet contains data from the product specification. Philips Semiconductors reserves the right to make changes at any time in order to improve the design, manufacturing and supply. Changes will be communicated according to the Customer Product/Process Change Notification (CPCN) procedure SNW-SQ-650A.

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2. The product status of the device(s) described in this data sheet may have changed since this data sheet was published. The latest information is available on the Internet at URL <http://www.semiconductors.philips.com>.

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VHF variable capacitance diode

BB187

NOTES

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