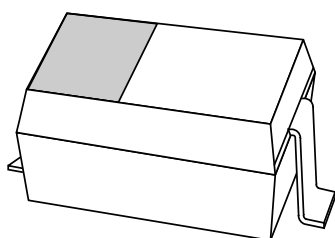


DATA SHEET



BB152

VHF variable capacitance diode

Product specification

1998 Sep 09

VHF variable capacitance diode

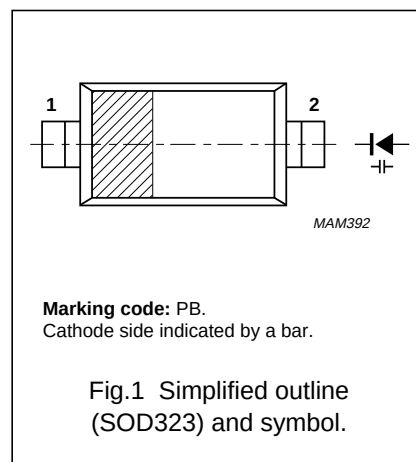
BB152

FEATURES

- High linearity
- Excellent matching to 2% DMA
- Very small plastic SMD package
- C28: 2.7 pF; ratio: 22
- Low series resistance.

DESCRIPTION

The BB152 is a planar technology variable capacitance diode, in a SOD323 package. The excellent matching performance is achieved by gliding matching and a direct matching assembly procedure.



APPLICATIONS

- Electronic tuning in VHF television tuners, band A up to 160 MHz
- Voltage controlled oscillators (VCO).

PINNING

PIN	DESCRIPTION
1	cathode
2	anode

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_R	continuous reverse voltage		—	32	V
V_{RM}	peak reverse voltage	in series with a 10 k Ω resistor	—	35	V
I_F	continuous forward current		—	20	mA
T_{stg}	storage temperature		–55	+150	°C
T_j	operating junction temperature		–55	+125	°C

ELECTRICAL CHARACTERISTICS

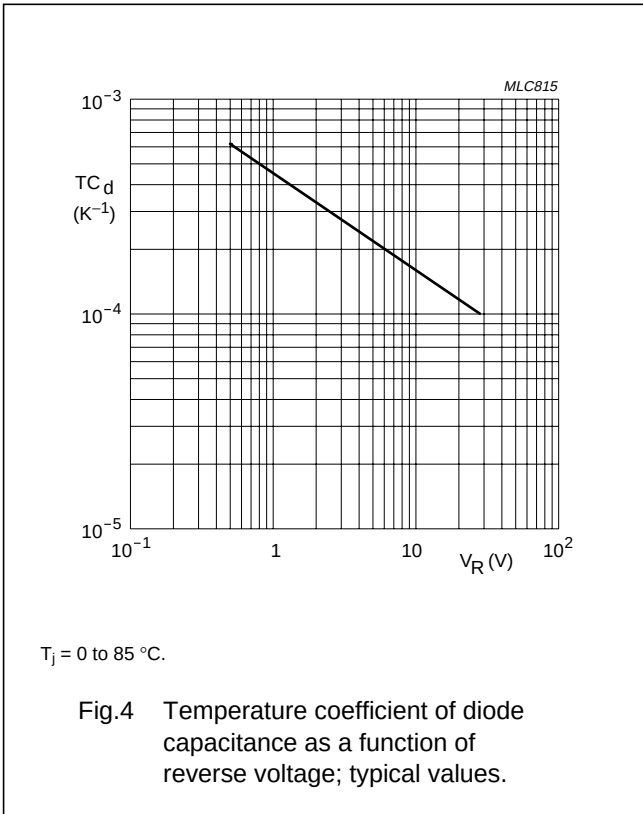
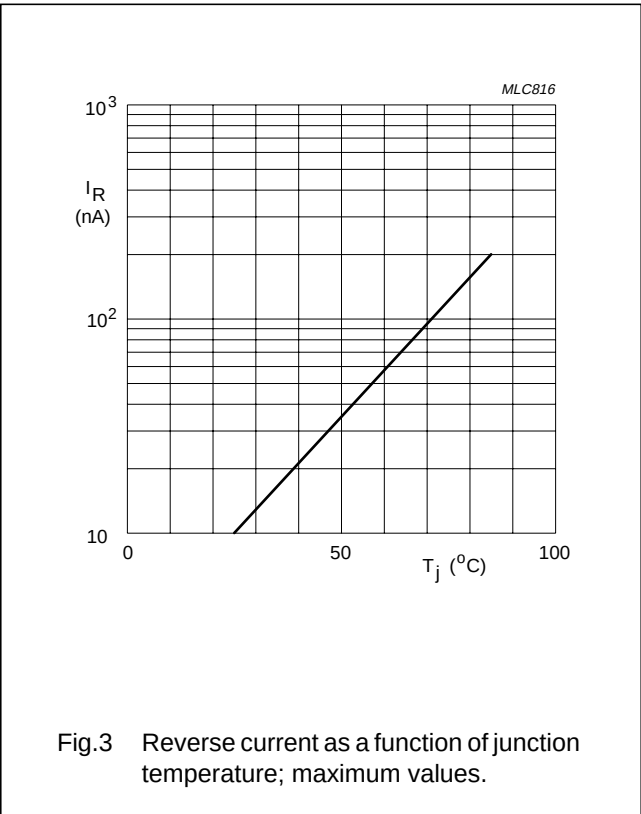
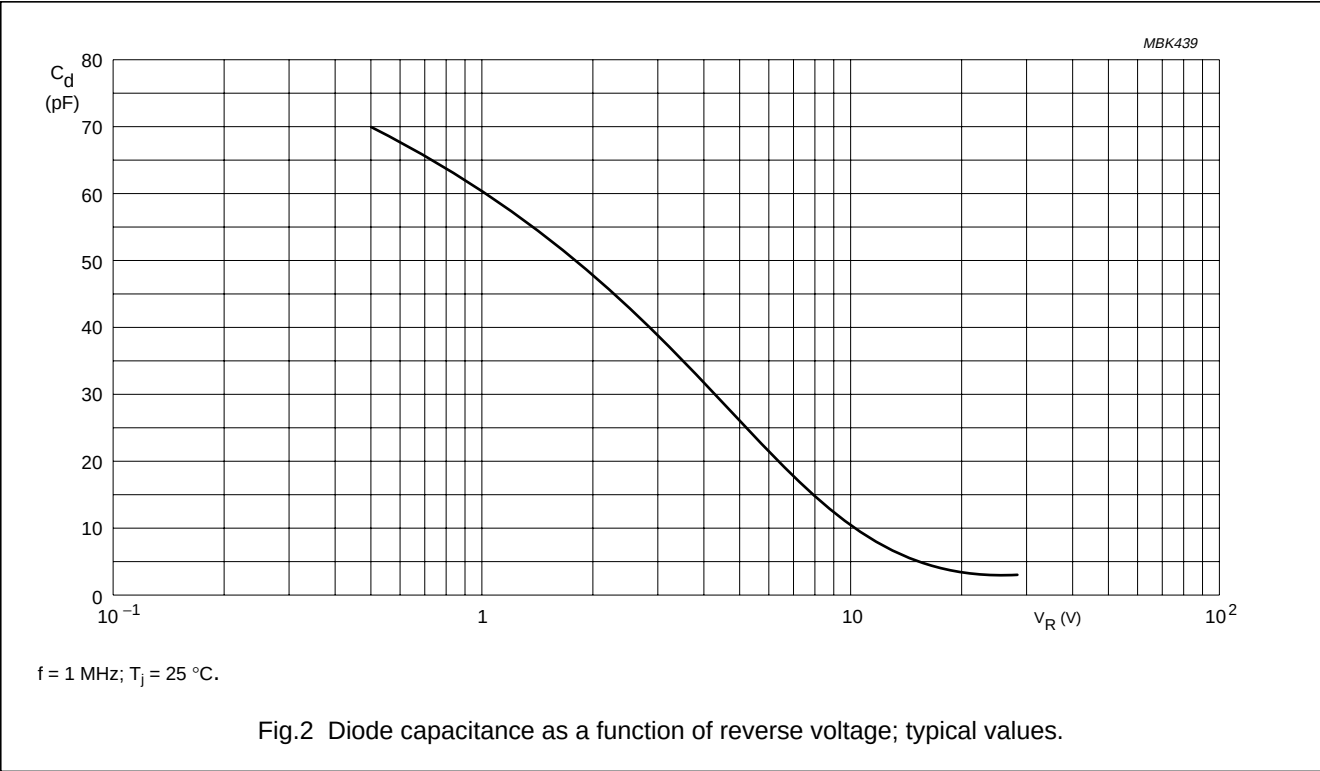
$T_j = 25\text{ }^{\circ}\text{C}$ unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_R	reverse current	$V_R = 30\text{ V}$; see Fig.3	—	—	10	nA
		$V_R = 30\text{ V}$; $T_j = 85\text{ }^{\circ}\text{C}$; see Fig.3	—	—	200	nA
r_s	diode series resistance	$f = 100\text{ MHz}$; V_R is the value at which $C_d = 30\text{ pF}$	—	1	1.2	Ω
C_d	diode capacitance	$V_R = 1\text{ V}$; $f = 1\text{ MHz}$; see Figs 2 and 4	52	—	62	pF
		$V_R = 28\text{ V}$; $f = 1\text{ MHz}$; see Figs 2 and 4	2.48	—	2.89	pF
$\frac{C_{d(1V)}}{C_{d(2V)}}$	capacitance ratio	$f = 1\text{ MHz}$	—	1.31	—	
$\frac{C_{d(1V)}}{C_{d(28V)}}$	capacitance ratio	$f = 1\text{ MHz}$	20.6	—	—	
$\frac{C_{d(25V)}}{C_{d(28V)}}$	capacitance ratio	$f = 1\text{ MHz}$	—	1.05	—	
$\frac{\Delta C_d}{C_d}$	capacitance matching	$V_R = 1\text{ to }28\text{ V}$; in a sequence of 15 diodes (gliding)	—	—	2	%

VHF variable capacitance diode

BB152

GRAPHICAL DATA



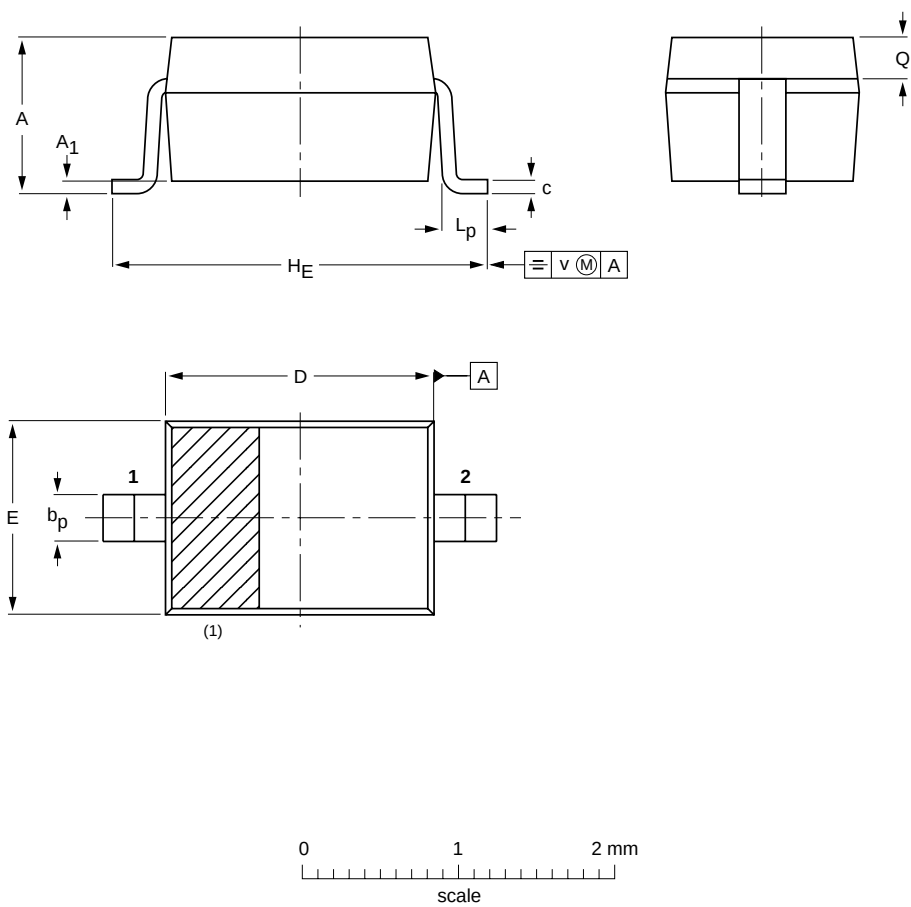
VHF variable capacitance diode

BB152

PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD323



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max.	b _p	c	D	E	H _E	L _p	Q	v
mm	1.1 0.8	+ 0.05 - 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	EIAJ			
SOD323						98-09-14

VHF variable capacitance diode

BB152

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.

VHF variable capacitance diode

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NOTES

VHF variable capacitance diode

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NOTES

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Printed in The Netherlands

115104/00/01/pp8

Date of release: 1998 Sep 09

Document order number: 9397 750 04275

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