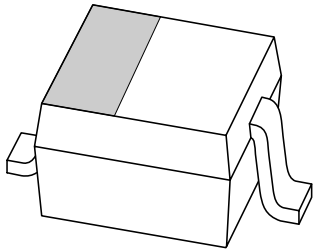


DATA SHEET



BB190

UHF variable capacitance diode

Product specification
Supersedes data of 2000 Nov 07

2004 Mar 26

UHF variable capacitance diode

BB190

FEATURES

- Excellent linearity
- Very small plastic SMD package
- Very low series resistance
- Very low capacitance spread.

APPLICATIONS

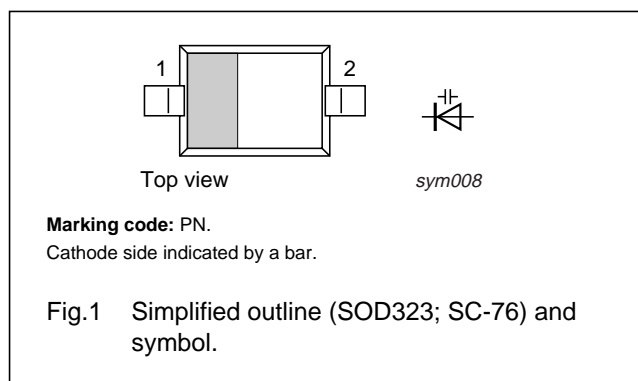
- Electronic tuning in UHF radio tuners
- VCO.

DESCRIPTION

The BB190 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



ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
BB190	–	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	–	10	V
T_{stg}	storage temperature	–55	+125	°C
T_j	operating junction temperature	–	125	°C

ELECTRICAL CHARACTERISTICS

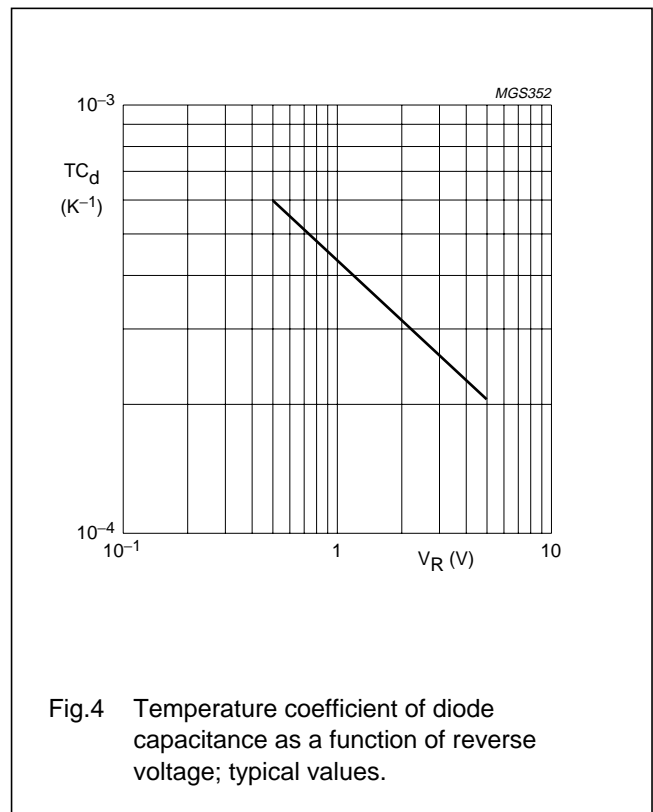
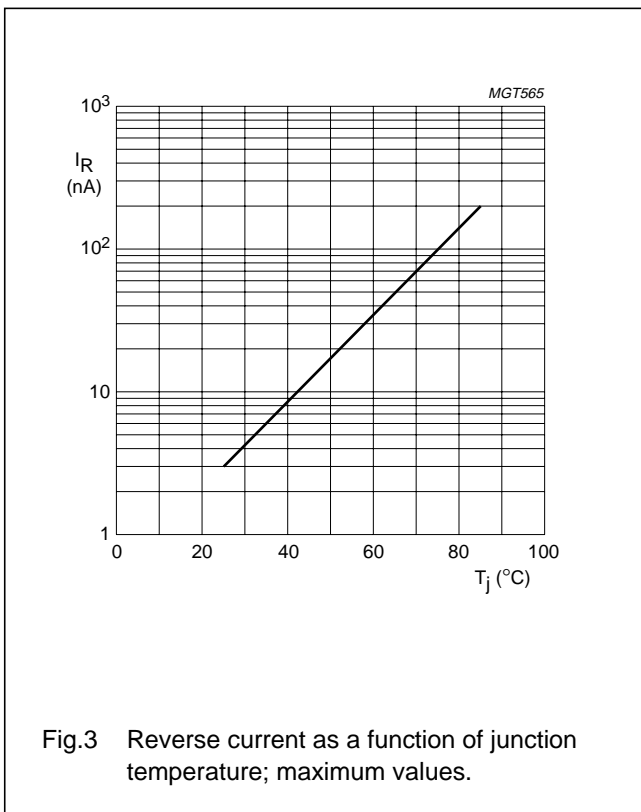
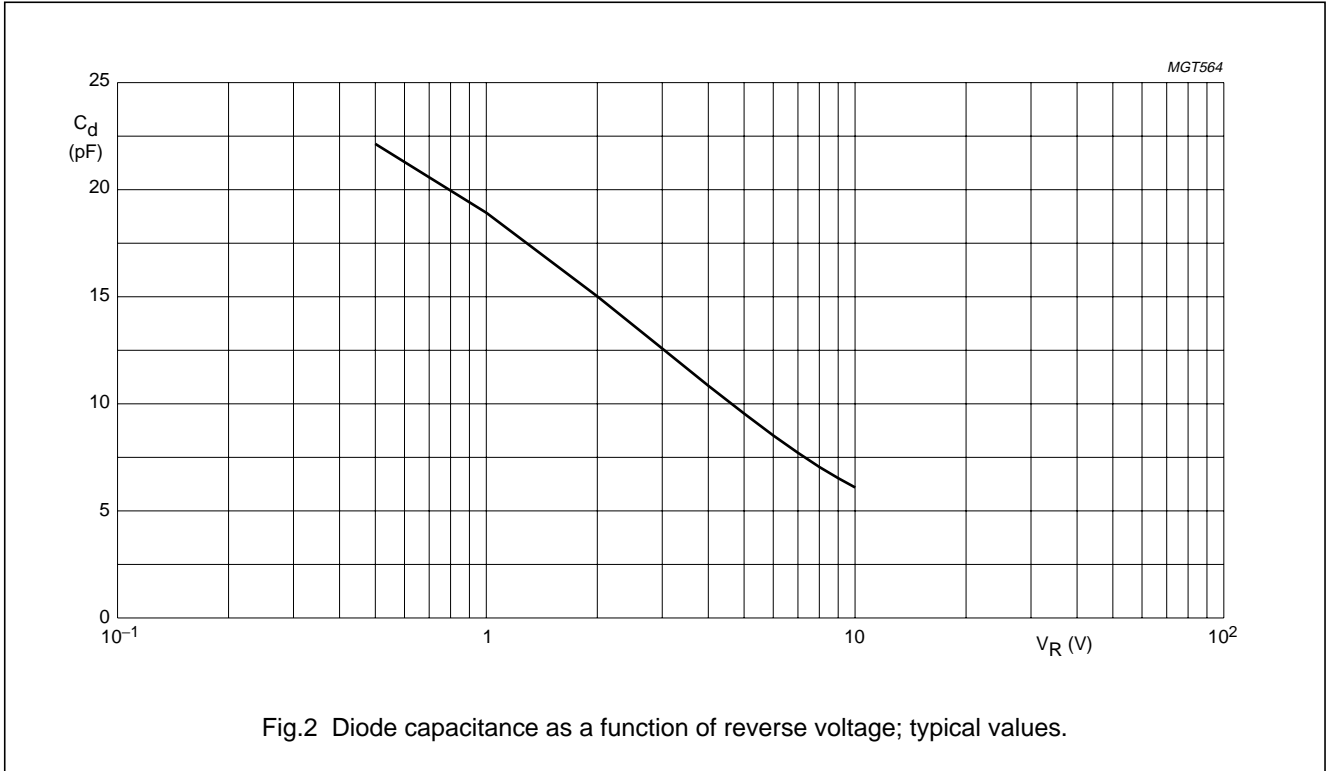
$T_j = 25\text{ °C}$ unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_R	reverse voltage	$I_R = 1\ \mu\text{A}$	10	–	–	V
I_R	reverse current	$V_R = 10\ \text{V}$; see Fig.3	–	–	3	nA
r_s	diode series resistance	$f = 470\ \text{MHz}$; $V_R = 1\ \text{V}$	–	0.26	0.4	Ω
C_d	diode capacitance	$V_R = 1\ \text{V}$; $f = 1\ \text{MHz}$; see Figs 2 and 4	18	–	20	pF
		$V_R = 2\ \text{V}$; $f = 1\ \text{MHz}$; see Figs 2 and 4	–	15	–	pF
		$V_R = 4\ \text{V}$; $f = 1\ \text{MHz}$; see Figs 2 and 4	10.1	–	11.6	pF
		$V_R = 10\ \text{V}$; $f = 1\ \text{MHz}$; see Figs 2 and 4	–	6	–	pF
$\frac{C_{d(1V)}}{C_{d(4V)}}$	capacitance ratio	$f = 1\ \text{MHz}$	1.55	–	–	

UHF variable capacitance diode

BB190

GRAPHICAL DATA



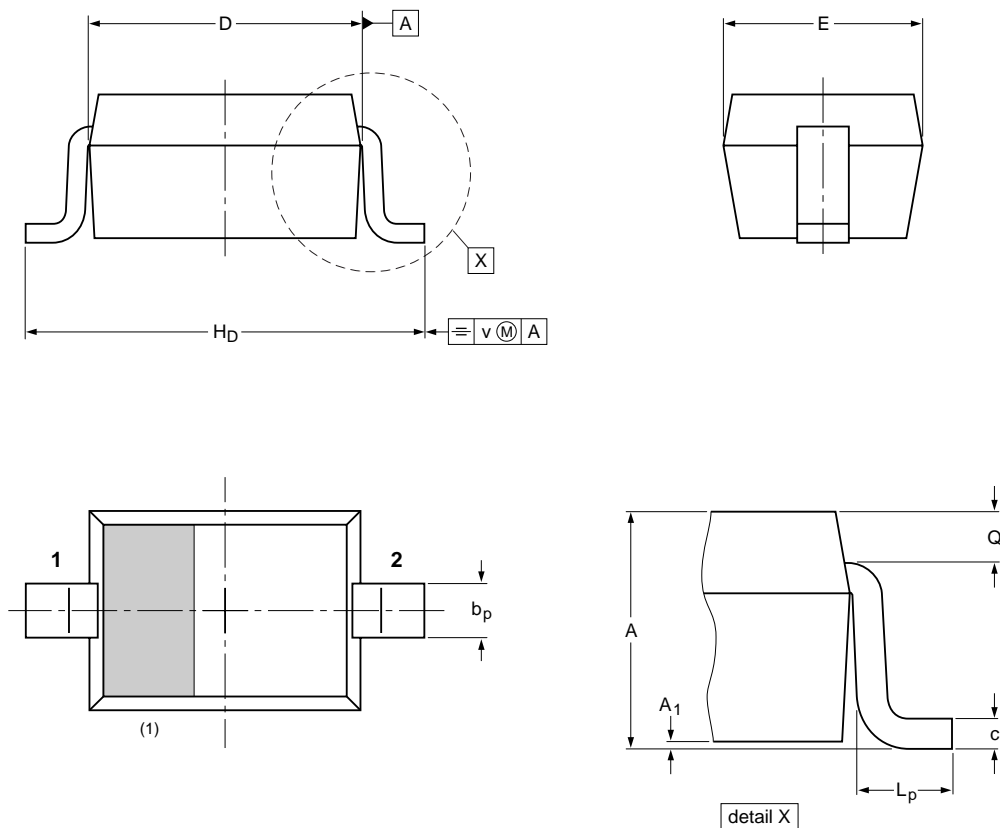
UHF variable capacitance diode

BB190

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 _D	L _p	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

UHF variable capacitance diode

BB190

DATA SHEET STATUS

LEVEL	DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾⁽³⁾	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.
II	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.
III	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. Relevant changes will be communicated via a Customer Product/Process Change Notification (CPCN).

Notes

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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>.
3. For data sheets describing multiple type numbers, the highest-level product status determines the data sheet status.

DEFINITIONS

Short-form specification — The data in a short-form specification is extracted from a full data sheet with the same type number and title. For detailed information see the relevant data sheet or data handbook.

Limiting values definition — Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 60134). 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.

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