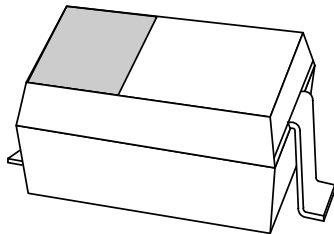


DATA SHEET



BB190

UHF variable capacitance diode

Product specification

2000 Nov 07

UHF variable capacitance diode

BB190

FEATURES

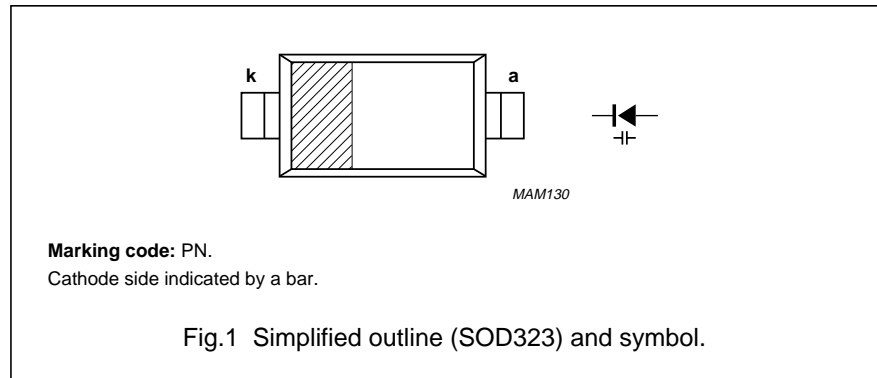
- Excellent linearity
- Very small plastic SMD package
- Very low series resistance
- Very low capacitance spread.

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 very small plastic SMD package.



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 range	–55	+125	°C
T_j	operating junction temperature	–	125	°C

ELECTRICAL CHARACTERISTICS

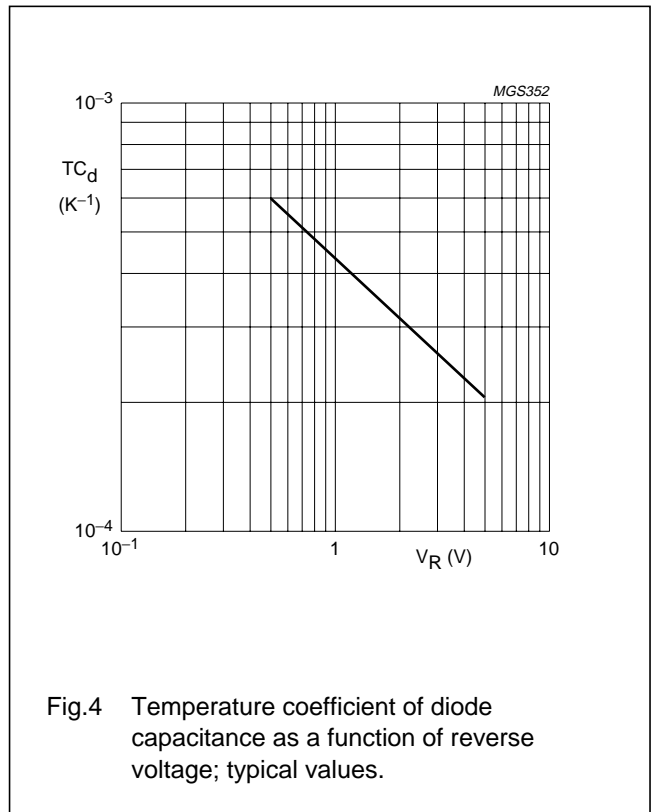
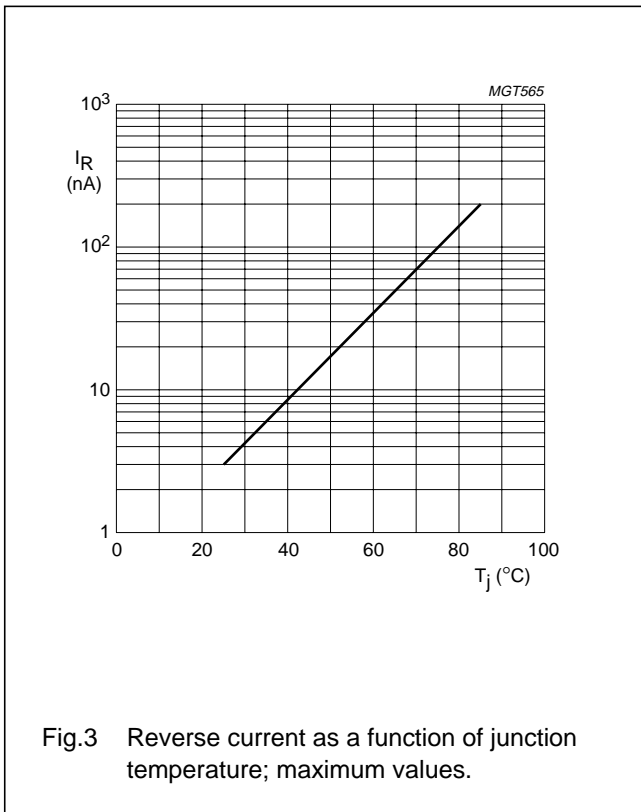
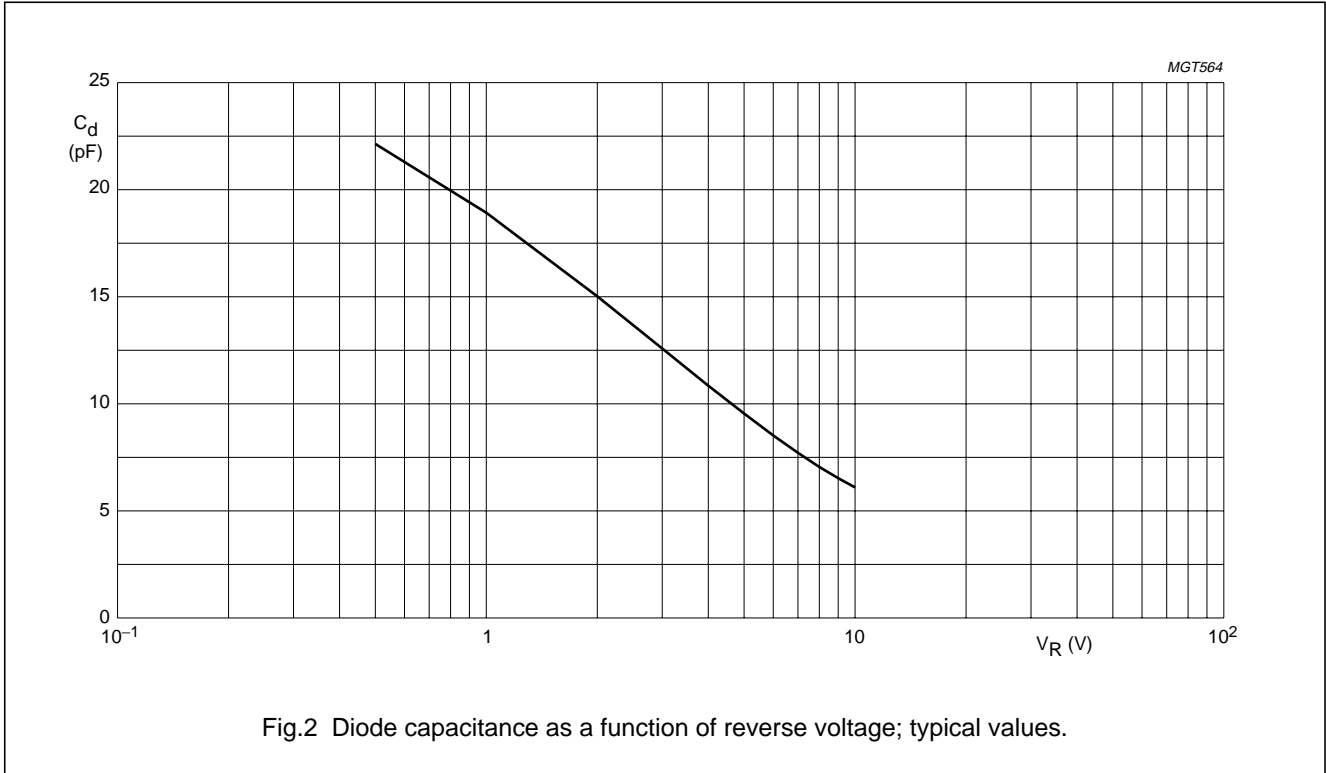
$T_j = 25\text{ °C}$ unless otherwise specified.

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	–	
		$V_R = 4\ \text{V}$; $f = 1\ \text{MHz}$; 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	–	
$\frac{C_{d(1V)}}{C_{d(4V)}}$	capacitance ratio	$f = 1\ \text{MHz}$	1.55	–	–	

UHF variable capacitance diode

BB190

GRAPHICAL DATA



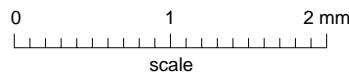
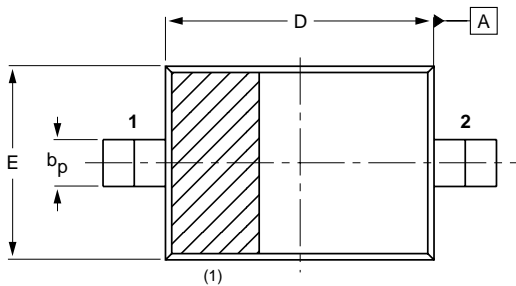
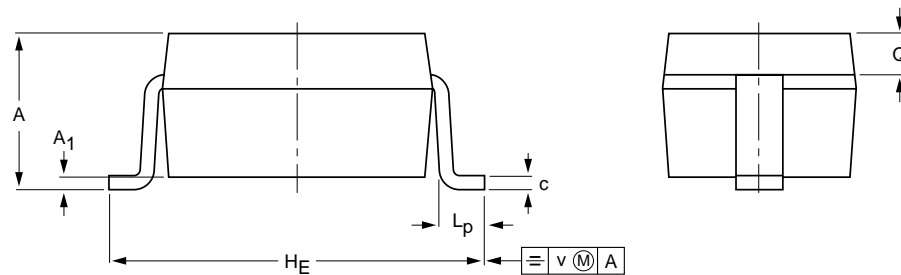
UHF variable capacitance diode

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 _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			SC-76		98-09-14 99-09-13

UHF variable capacitance diode

BB190

DATA SHEET STATUS

DATA SHEET STATUS	PRODUCT STATUS	DEFINITIONS ⁽¹⁾
Objective specification	Development	This data sheet contains the design target or goal specifications for product development. Specification may change in any manner without notice.
Preliminary specification	Qualification	This data sheet contains preliminary data, and supplementary data will be published at a later date. Philips Semiconductors reserves the right to make changes at any time without notice in order to improve design and supply the best possible product.
Product specification	Production	This data sheet contains final specifications. Philips Semiconductors reserves the right to make changes at any time without notice in order to improve design and supply the best possible product.

Note

1. Please consult the most recently issued data sheet before initiating or completing a design.

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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UHF variable capacitance diode

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NOTES

UHF variable capacitance diode

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NOTES

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