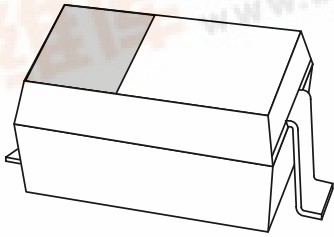


DISCRETE SEMICONDUCTORS

DATA SHEET



BB157

VHF variable capacitance diode

Product specification
Supersedes data of 2002 Feb 06

2002 Mar 05

VHF variable capacitance diode

BB157

FEATURES

- High linearity
- Excellent matching to 2% DMA
- Very 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

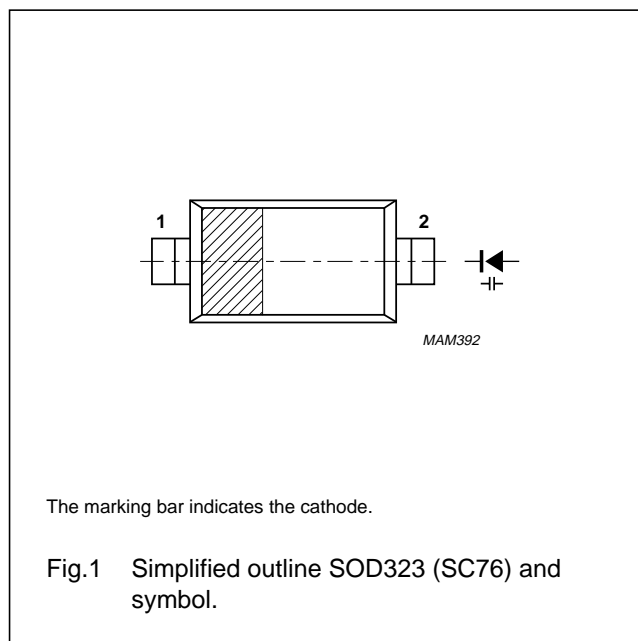
The BB157 is a variable capacitance diode, fabricated in planar technology and encapsulated in the SOD323 (SC-76) very small plastic SMD package. The excellent matching performance is achieved by gliding matching and a Direct Matching Assembly (DMA) procedure.

MARKING

TYPE NUMBER	MARKING CODE
BB157	PG

PINNING

PIN	DESCRIPTION
1	cathode
2	anode



LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_R	continuous reverse voltage		–	30	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	+150	°C

VHF variable capacitance diode

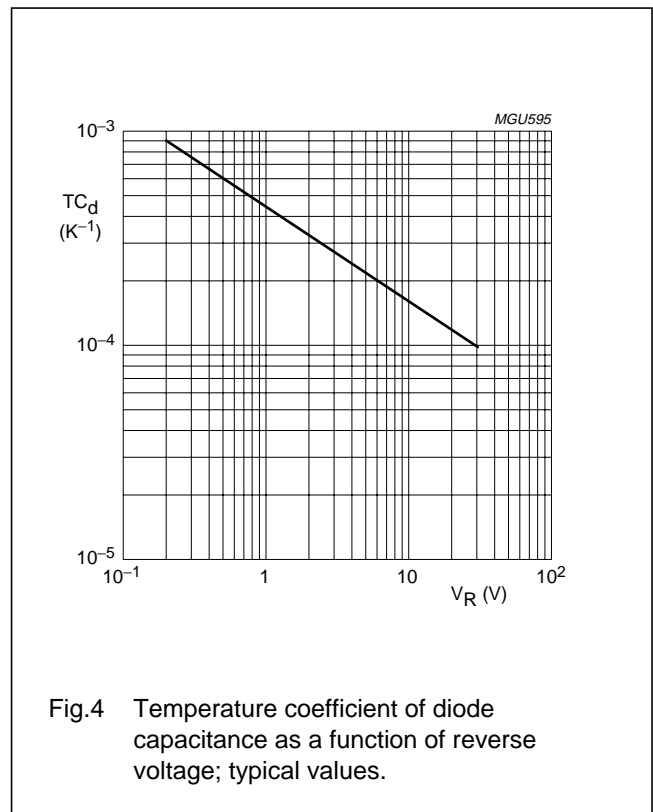
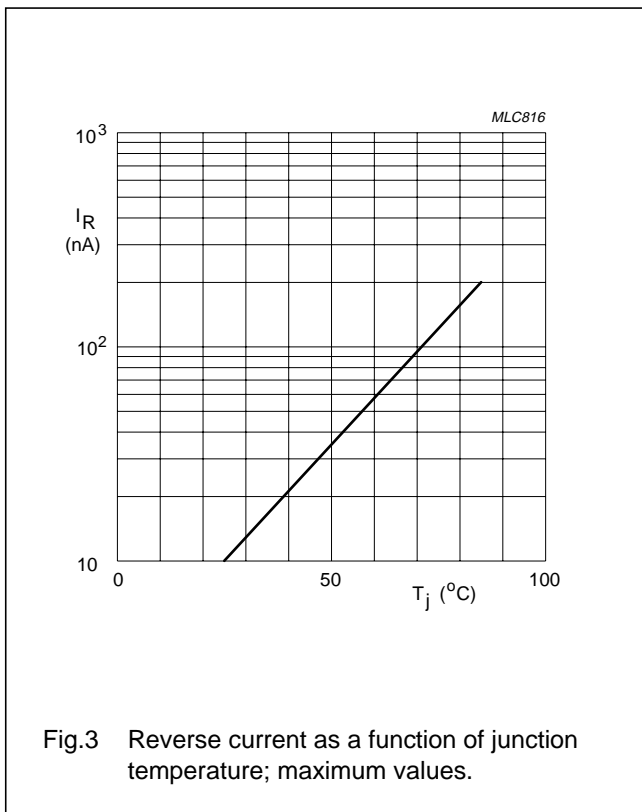
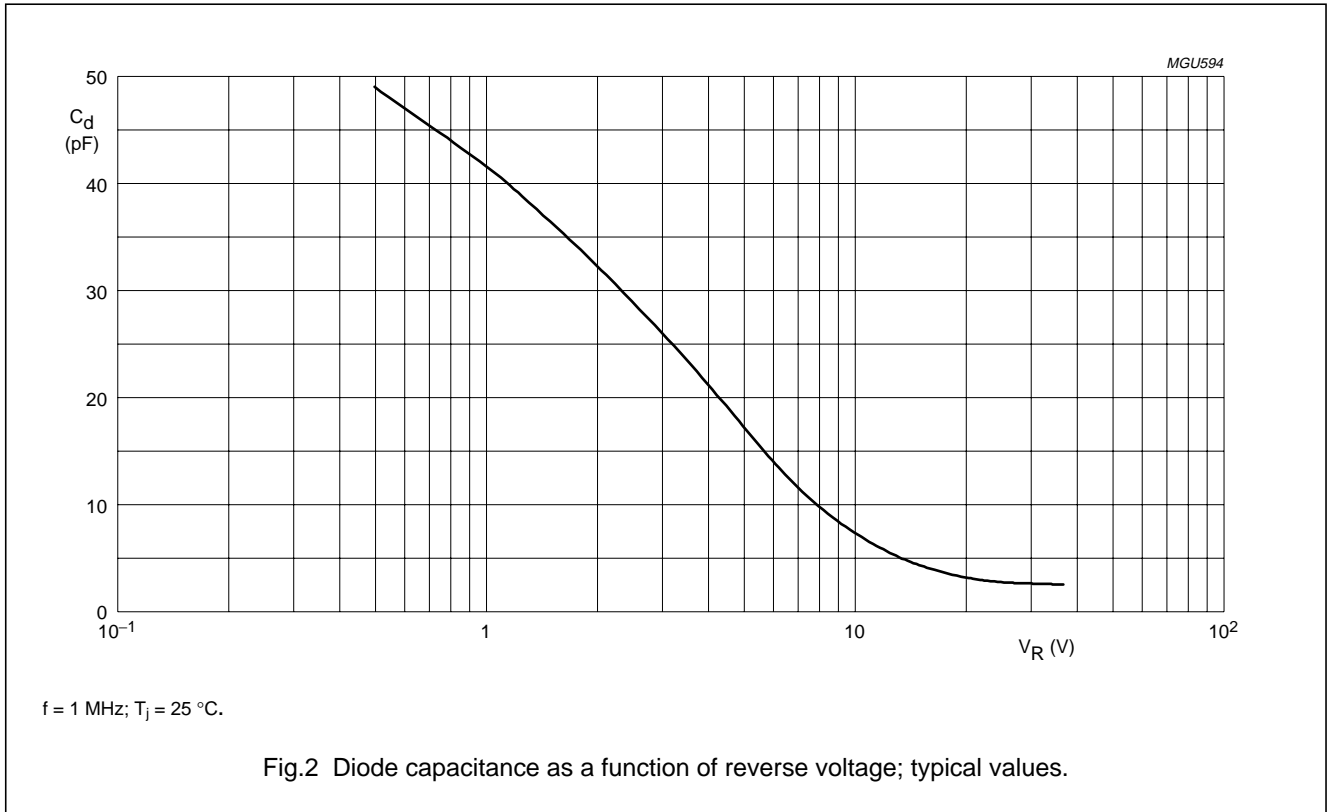
BB157

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_R	reverse current	$V_R = 30\text{ V}$; see Fig.3	–	–	10	nA
		$V_R = 30\text{ V}$; $T_j = 85\text{ °C}$; see Fig.3	–	–	200	nA
r_s	diode series resistance	$f = 470\text{ MHz}$; $V_R = 5\text{ V}$	–	–	0.75	Ω
C_d	diode capacitance	$V_R = 1\text{ V}$; $f = 1\text{ MHz}$; see Figs 2 and 4	37.5	–	43.8	pF
		$V_R = 2\text{ V}$; $f = 1\text{ MHz}$; see Figs 2 and 4	29.3	–	34.2	pF
		$V_R = 25\text{ V}$; $f = 1\text{ MHz}$; see Figs 2 and 4	2.57	–	2.92	pF
		$V_R = 28\text{ V}$; $f = 1\text{ MHz}$; see Figs 2 and 4	2.42	–	2.76	pF
$\frac{C_{d(2V)}}{C_{d(25V)}}$	capacitance ratio	$f = 1\text{ MHz}$	11	–	–	
$\frac{C_{d(1V)}}{C_{d(28V)}}$	capacitance ratio	$f = 1\text{ MHz}$	14.85	–	–	
$\frac{\Delta C_d}{C_d}$	capacitance matching	$V_R = 2\text{ to }25\text{ V}$; in a sequence of 15 diodes (gliding)	–	–	2	%

VHF variable capacitance diode

BB157



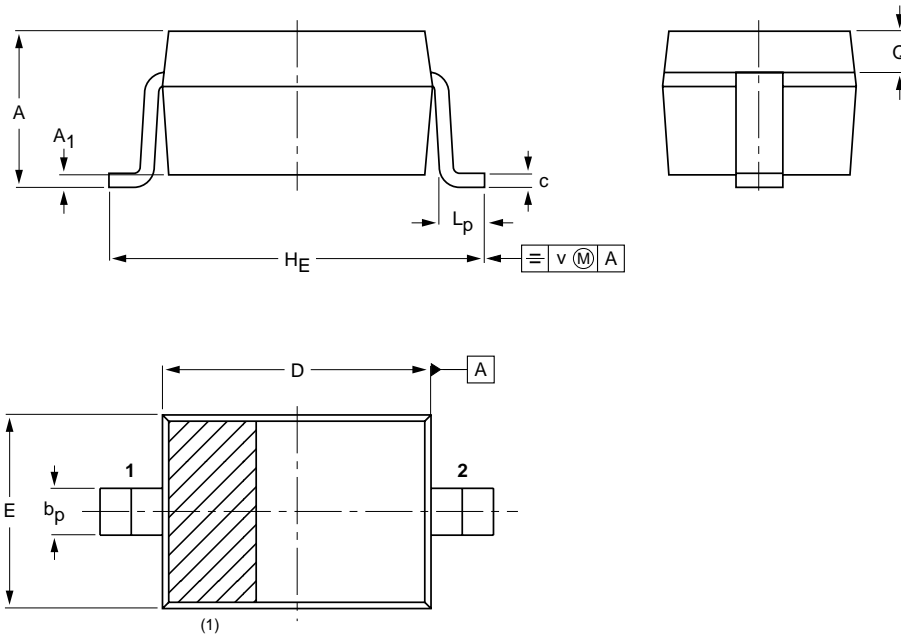
VHF variable capacitance diode

BB157

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

VHF variable capacitance diode

BB157

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.

Notes

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VHF variable capacitance diode

BB157

NOTES

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