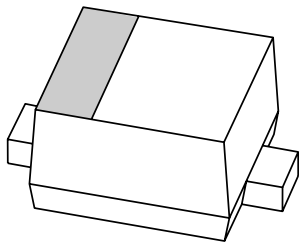


# DATA SHEET



## **BB145C**

Low-voltage variable capacitance  
diode

Preliminary specification

2001 Dec 11

# Low-voltage variable capacitance diode

# BB145C

### FEATURES

- Ultra small plastic SMD package
- Very low capacitance spread
- High capacitance ratio
- C1 to C4 ratio: min. 2.39, max. 2.53.

### APPLICATIONS

Voltage Controlled Oscillators (VCO).

### DESCRIPTION

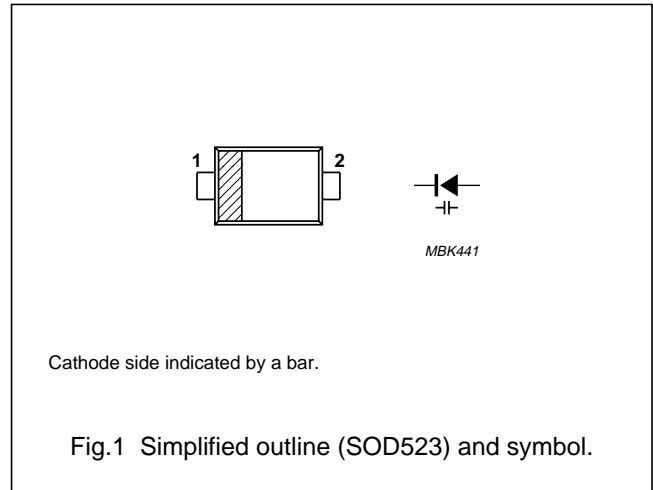
The BB145C is a variable capacitance diode, fabricated in planar technology and encapsulated in the SOD523 ultra small plastic SMD package.

### MARKING

TYPE NUMBER	MARKING CODE
BB145C	K3

### 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		–	10	V
$V_{RM}$	peak reverse voltage	in series with a 10 k $\Omega$ resistor	–	12	V
$I_F$	continuous forward current		–	20	mA
$T_{stg}$	storage temperature		–55	+150	°C
$T_j$	operating junction temperature		–55	+150	°C

### CHARACTERISTICS

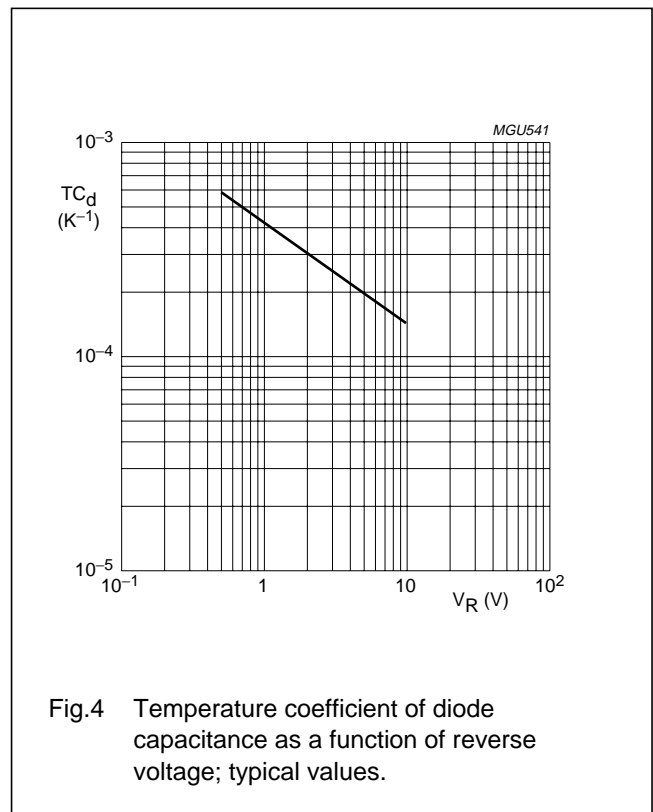
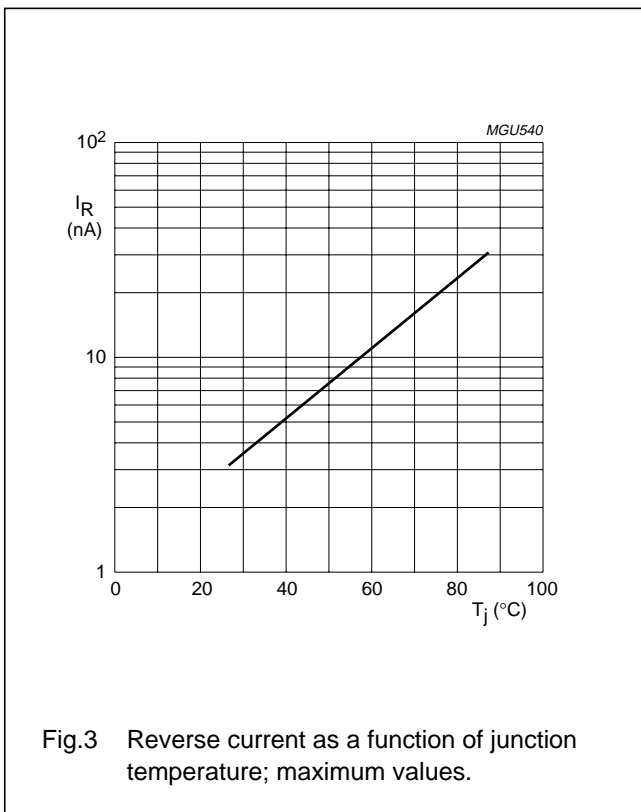
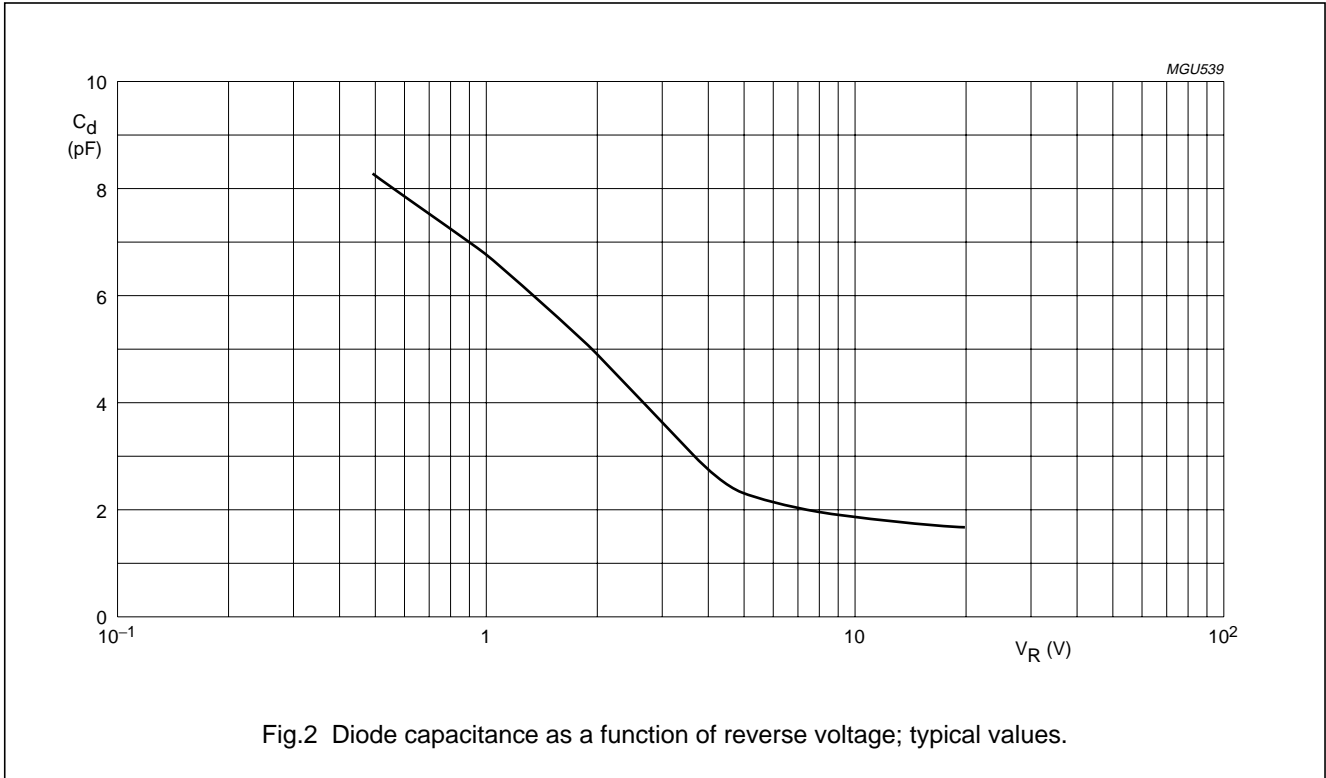
$T_j = 25\text{ °C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$I_R$	reverse current	$V_R = 15\text{ V}$ ; see Fig.3	–	3	nA
		$V_R = 15\text{ V}$ ; $T_j = 85\text{ °C}$	–	30	nA
$r_s$	diode series resistance	$V_R = 1\text{ V}$ ; $f = 470\text{ MHz}$	–	0.6	$\Omega$
$C_d$	diode capacitance	$V_R = 1\text{ V}$ ; $f = 1\text{ MHz}$	6.4	7.2	pF
		$V_R = 4\text{ V}$ ; $f = 1\text{ MHz}$	2.55	2.85	pF
$\frac{C_{d(1V)}}{C_{d(4V)}}$	capacitance ratio	$f = 1\text{ MHz}$	2.39	2.53	

Low-voltage variable capacitance diode

BB145C

GRAPHICAL DATA



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PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD523

**DIMENSIONS (mm are the original dimensions)**

UNIT	A	b <sub>p</sub>	c	D	E	H <sub>E</sub>	v
mm	0.7 0.5	0.35 0.25	0.2 0.1	1.3 1.1	0.9 0.7	1.7 1.5	0.15

**Note**  
1. The marking bar indicates the cathode.

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOD523			SC-79			98-11-25

## Low-voltage variable capacitance diode

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## DATA SHEET STATUS

DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	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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**NOTES**

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NOTES

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