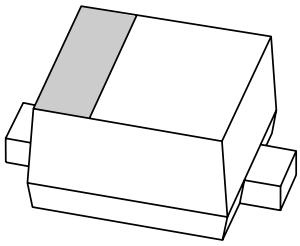
DATA SHEET



BB145C
Low-voltage variable capacitance diode

Preliminary specification

2001 Dec 11

Philips
Semiconductors

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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

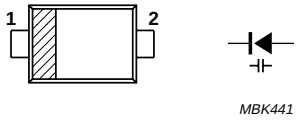
The BB145C is a variable capacitance diode, fabricated in planar technology and encapsulated in the SOD523 ultra small plastic SMD package.

MARKING

TYPE NUMBER	MARKING CODE
BB145C	K3

PINNING

PIN	DESCRIPTION
1	cathode
2	anode



Cathode side indicated by a bar.

Fig.1 Simplified outline (SOD523) and symbol.

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 kΩ 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 °C unless otherwise specified

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

GRAPHICAL DATA

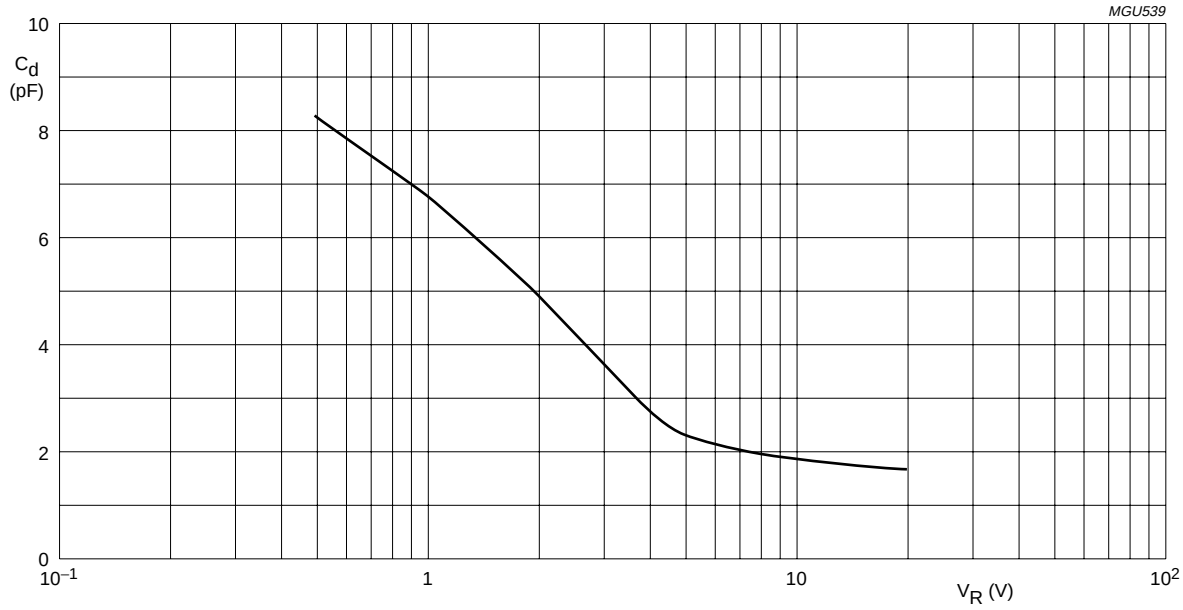


Fig.2 Diode capacitance as a function of reverse voltage; typical values.

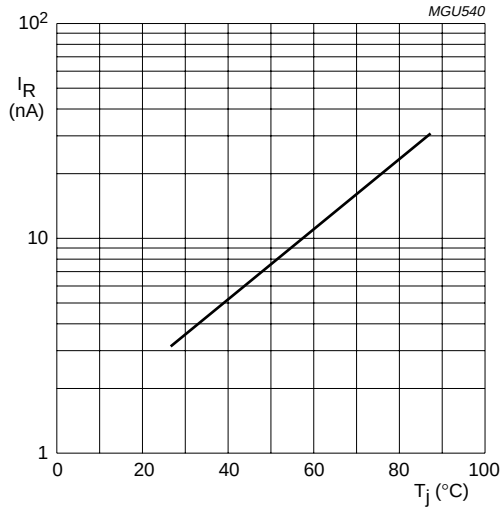


Fig.3 Reverse current as a function of junction temperature; maximum values.

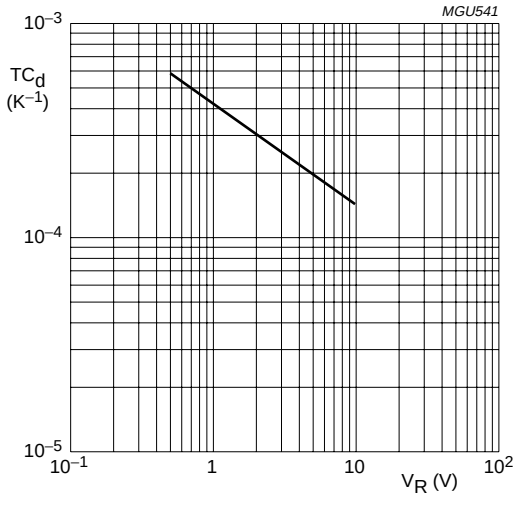
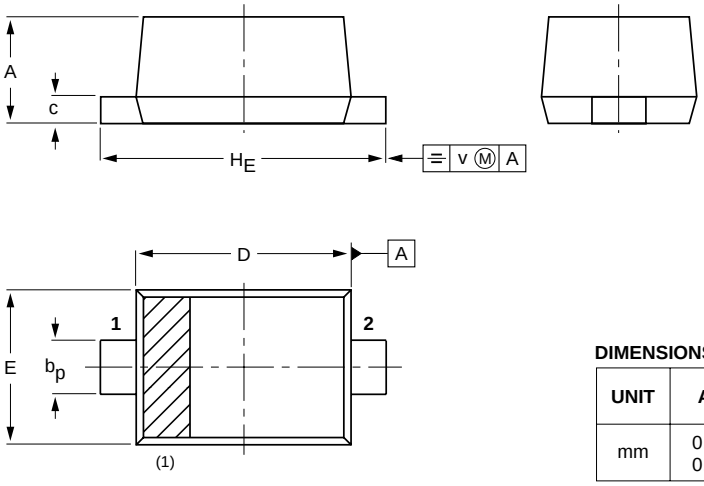
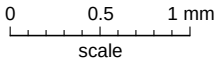


Fig.4 Temperature coefficient of diode capacitance as a function of reverse voltage; typical values.

PACKAGE OUTLINE

Plastic surface mounted package; 2 leads **SOD523**





DIMENSIONS (mm are the original dimensions)

UNIT	A	b_p	c	D	E	H_E	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

DATA SHEET STATUS

DATA SHEET STATUS[1]	PRODUCT STATUS[2]	DEFINITIONS
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