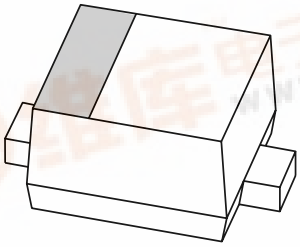
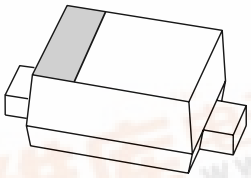
DATA SHEET





BB145B; BB145B-01
Low-voltage variable capacitance diodes

Product specification
Supersedes data of 1999 Dec 15

2002 Nov 18

PHILIPS

Low-voltage variable capacitance diodes BB145B; BB145B-01

FEATURES

- Ultra small plastic SMD package
- C4: 2.75 pF; ratio: 2.4
- Low series resistance.

APPLICATIONS

- Voltage controlled oscillators (VCO).

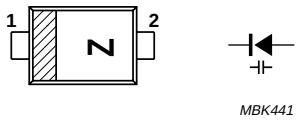
DESCRIPTION

The BB145B is a planar technology variable capacitance diode in a SOD523 (SC-79) package.

The BB145B-01 is a planar technology variable capacitance diode in a SOD723 package.

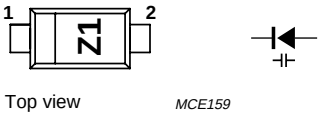
PINNING

PIN	DESCRIPTION
1	cathode
2	anode



Marking code: Z.
Orientation of marking code as shown.
Cathode side indicated by a bar.

Fig.1 Simplified outline (SOD523; SC-79) and symbol.



Marking code: Z1.
Orientation of marking code as shown.
Cathode side indicated by a bar.

Fig.2 Simplified outline (SOD723) 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		–	6	V
V_{RM}	peak reverse voltage	in series with a 10 kΩ resistor	–	8	V
I_F	continuous forward current		–	20	mA
T_{stg}	storage temperature		–55	+150	°C
T_j	operating junction temperature		–55	+150	°C

ELECTRICAL CHARACTERISTICS

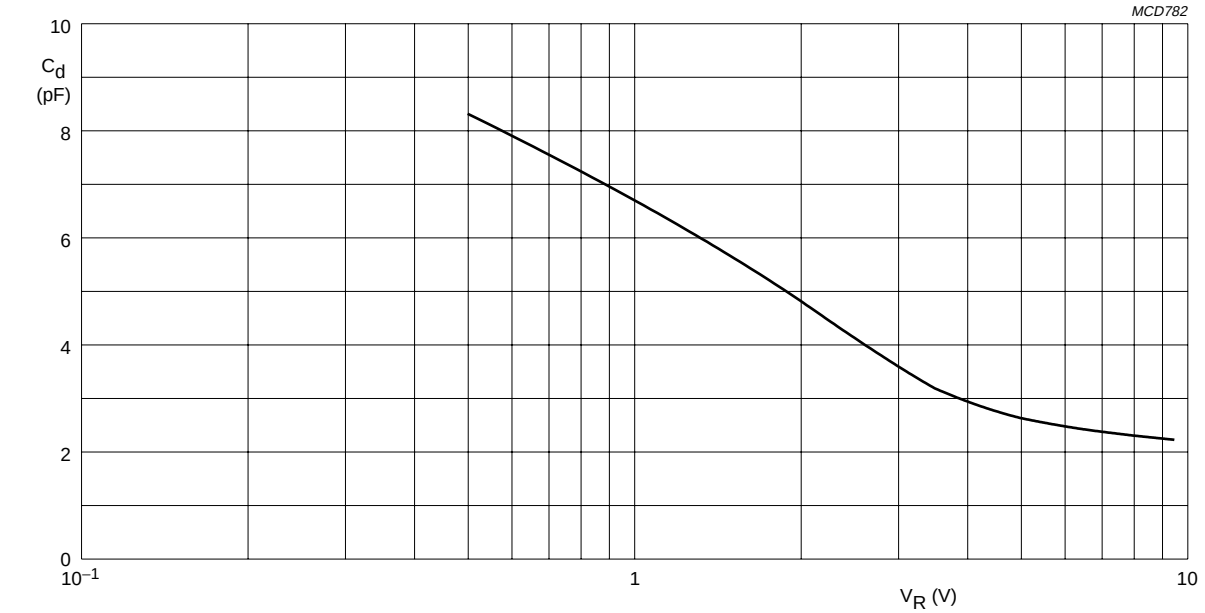
T_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_R	reverse current	V_R = 6 V; see Fig.4	–	10	nA
		V_R = 6 V; T_j = 85 °C; see Fig.4	–	200	nA
r_s	diode series resistance	f = 470 MHz; V_R = 1 V	–	0.6	Ω
C_d	diode capacitance	V_R = 1 V; f = 1 MHz; see Figs 3 and 5	6.4	7.2	pF
		V_R = 4 V; f = 1 MHz; see Figs 3 and 5	2.55	2.95	pF
$\frac{C_{d(1V)}}{C_{d(4V)}}$	capacitance ratio	f = 1 MHz	2.2	–	

CAUTION

This product is supplied in anti-static packing to prevent damage caused by electrostatic discharge during transport and handling. For further information, refer to Philips specs.: SNW-EQ-608, SNW-FQ-302A and SNW-FQ-302B.

GRAPHICAL DATA



f = 1 MHz; T_j = 25 °C.

Fig.3 Diode capacitance as a function of reverse voltage; typical values.

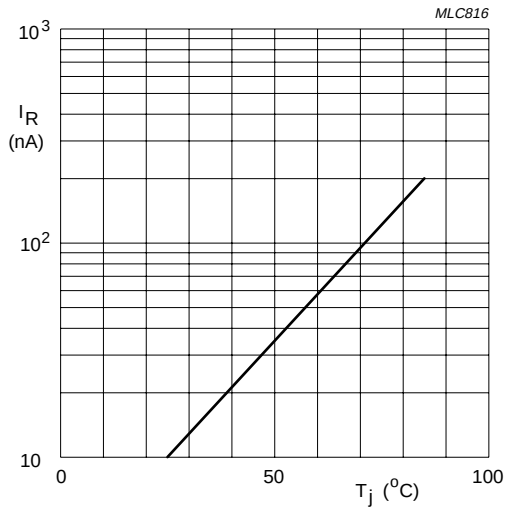


Fig.4 Reverse current as a function of junction temperature; maximum values.

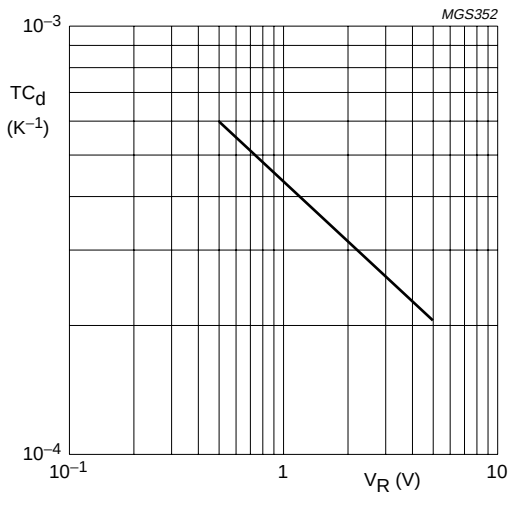
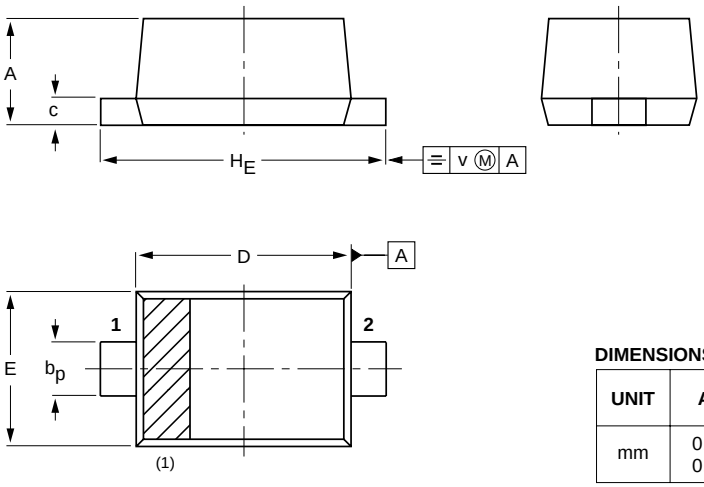
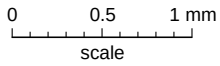


Fig.5 Temperature coefficient of diode capacitance as a function of reverse voltage; typical values.

PACKAGE OUTLINE

Plastic surface mounted package; 2 leads SOD523





DIMENSIONS (mm are the original dimensions)

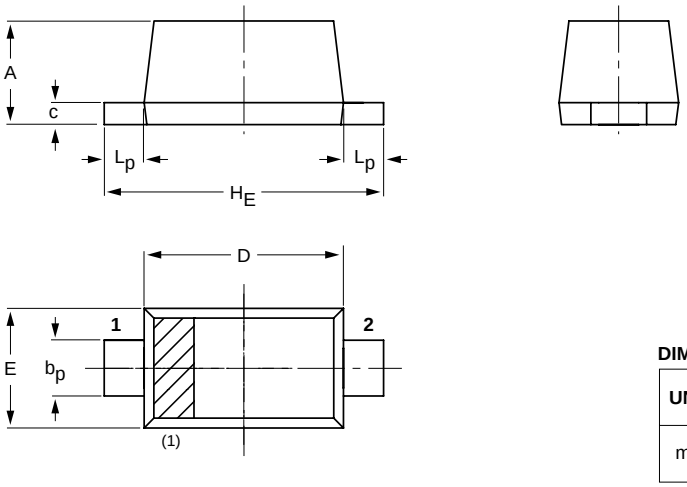
UNIT	A	b_p	c	D	E	H_E	v
mm	0.7 0.5	0.35 0.25	0.2 0.1	1.3 1.1	0.9 0.7	1.7 1.5	0.15

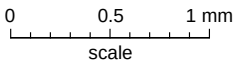
Note

1. The marking bar indicates the cathode.

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

Plastic surface mounted package; 2 leads SOD723





DIMENSIONS (mm are the original dimensions)

UNIT	A	b_p	c	D	E	H_E	L_p
mm	0.55 0.49	0.32 0.25	0.15 0.08	1.05 0.95	0.65 0.55	1.45 1.35	0.27 0.13

Note

1. The marking bar indicates the cathode.

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOD723						02-07-05

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).

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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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