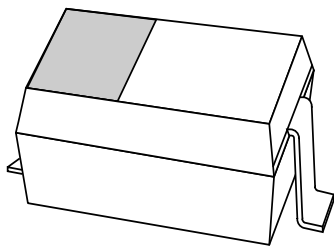


# DATA SHEET



**BB135**

**UHF variable capacitance diode**

Product specification  
Supersedes data of 1996 May 03

1998 Sep 15

# UHF variable capacitance diode

# BB135

### FEATURES

- Excellent linearity
- Very small plastic SMD package.
- C28: 1.9 pF; ratio: 10
- Low series resistance.

### APPLICATIONS

- Electronic tuning in UHF television tuners.
- Radio upconversion concepts
- VCO.

### DESCRIPTION

The BB135 is a variable capacitance diode, fabricated in planar technology, and encapsulated in the SOD323 very small plastic SMD package.

The matched type, BB134 has the same specification.

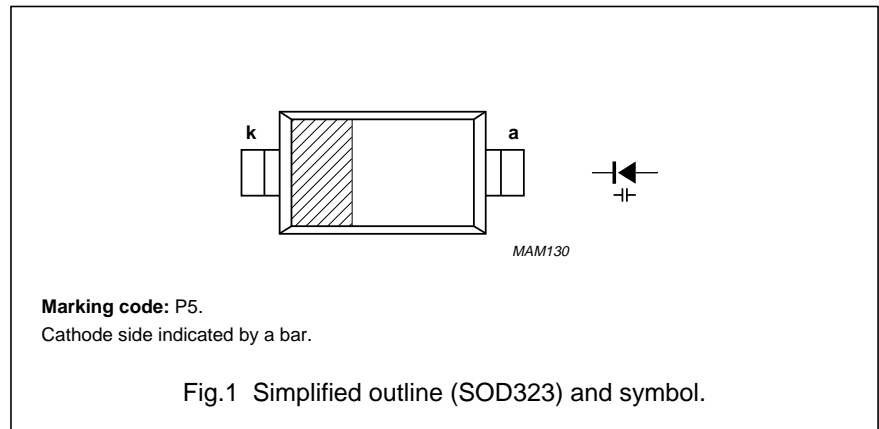
### ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$I_R$	reverse current	$V_R = 30\text{ V}$ ; see Fig.3	–	10	nA
		$V_R = 30\text{ V}$ ; $T_j = 85\text{ }^\circ\text{C}$ ; see Fig.3	–	200	nA
$r_s$	diode series resistance	$f = 470\text{ MHz}$ ; note 1	–	0.75	$\Omega$
$C_d$	diode capacitance	$V_R = 0.5\text{ V}$ ; $f = 1\text{ MHz}$ ; see Figs 2 and 4	17.5	21	pF
		$V_R = 28\text{ V}$ ; $f = 1\text{ MHz}$ ; see Figs 2 and 4	1.7	2.1	pF
$\frac{C_{d(0.5V)}}{C_{d(28V)}}$	capacitance ratio	$f = 1\text{ MHz}$	8.9	12	

### Note

1.  $V_R$  is the value at which  $C_d = 9\text{ pF}$ .



### LIMITING VALUES

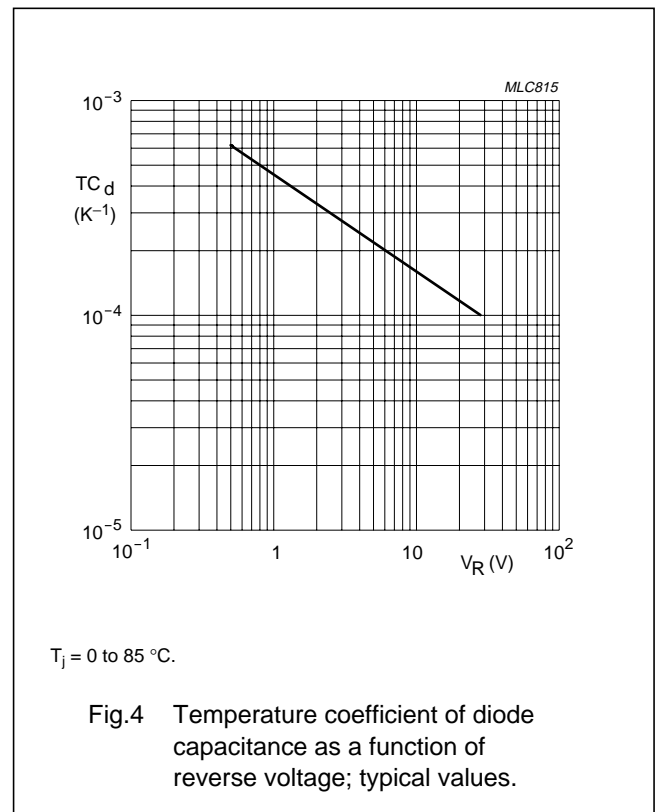
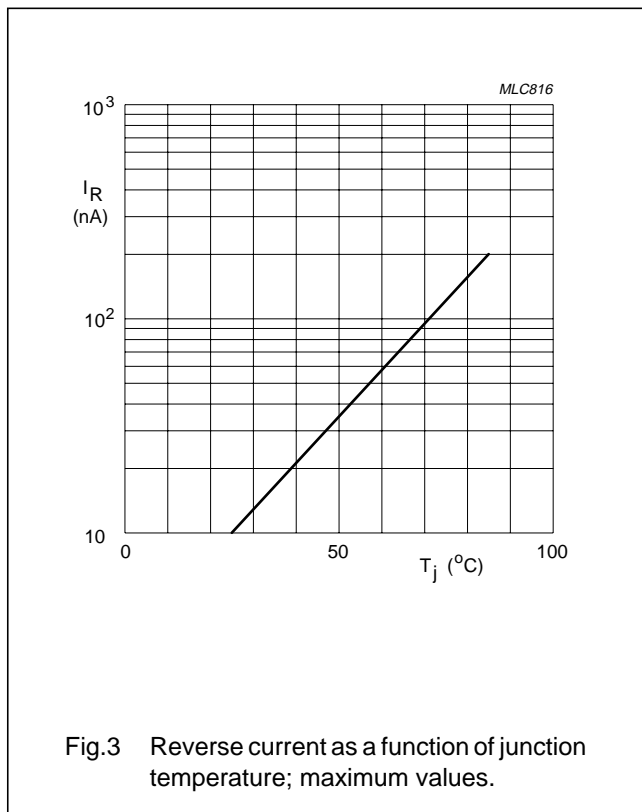
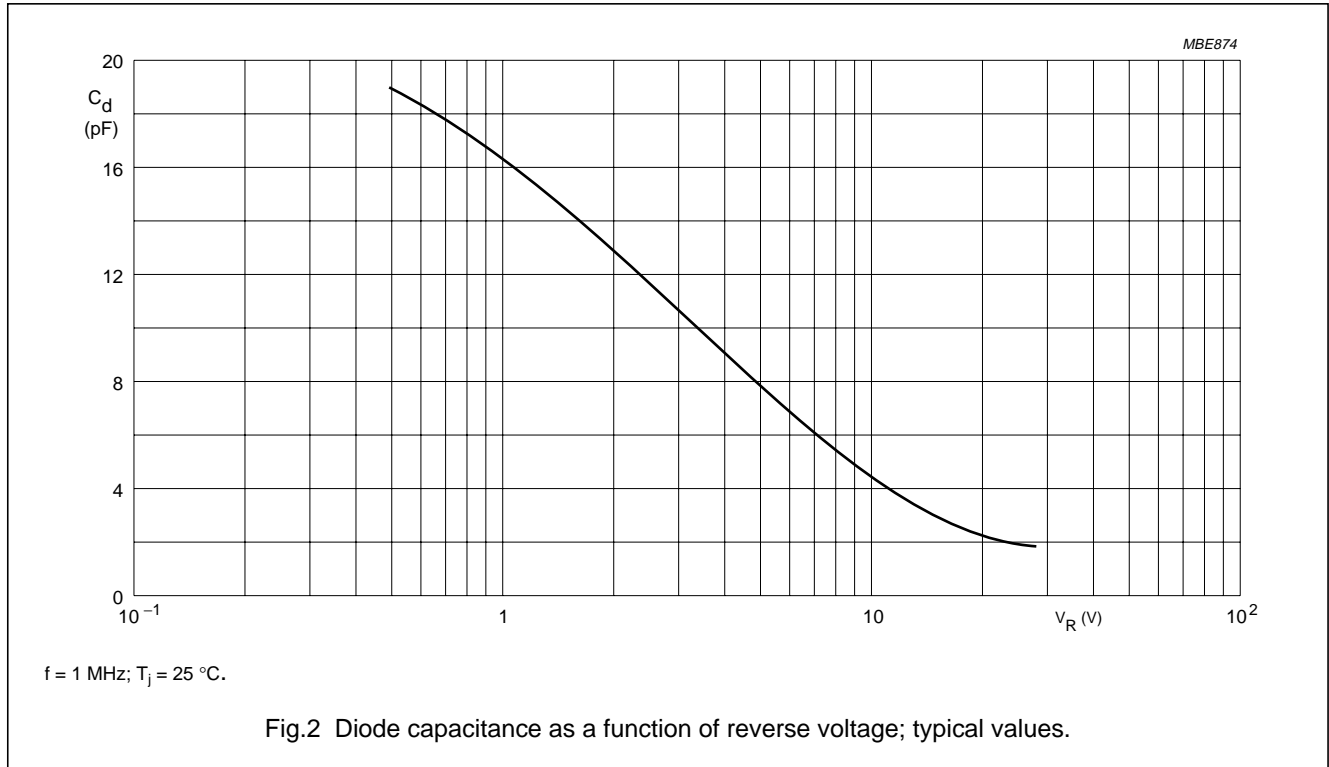
In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
$V_R$	continuous reverse voltage	–	30	V
$I_F$	continuous forward current	–	20	mA
$T_{stg}$	storage temperature	–55	+150	$^\circ\text{C}$
$T_j$	operating junction temperature	–55	+125	$^\circ\text{C}$

UHF variable capacitance diode

BB135

GRAPHICAL DATA



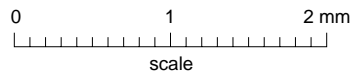
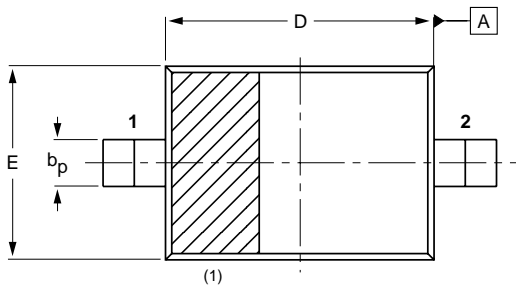
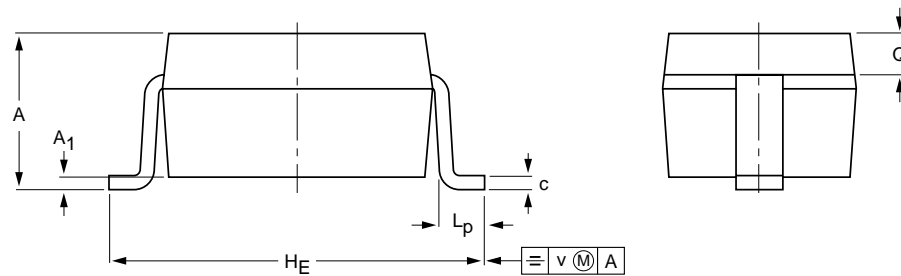
UHF variable capacitance diode

BB135

PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD323



DIMENSIONS (mm are the original dimensions)

UNIT	A	A <sub>1</sub> max.	b <sub>p</sub>	c	D	E	H <sub>E</sub>	L <sub>p</sub>	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					98-09-14

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**UHF variable capacitance diode****BB135**

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**DEFINITIONS**

<b>Data sheet status</b>	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
<b>Limiting values</b>	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). 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.	
<b>Application information</b>	
Where application information is given, it is advisory and does not form part of the specification.	

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These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.

UHF variable capacitance diode

BB135

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**NOTES**

UHF variable capacitance diode

BB135

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**NOTES**

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Printed in The Netherlands

115104/00/03/pp8

Date of release: 1998 Sep 15

Document order number: 9397 750 04376

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