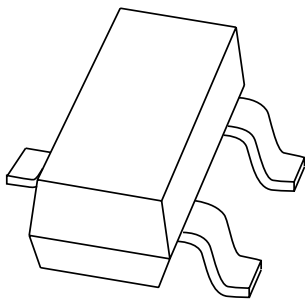


# DATA SHEET



**BB804**

VHF variable capacitance double  
diode

Product specification  
Supersedes data of 1996 May 03

1998 Nov 25

# VHF variable capacitance double diode

**BB804**

### FEATURES

- Selected capacitance range
- Small plastic SMD package
- C8: 26 pF; ratio: 1.7
- Low series resistance.

### MARKING

TYPE NUMBER	CODE
BB804	SF5
BB804W	SF2

### PINNING

PIN	DESCRIPTION
1	anode (a <sub>1</sub> )
2	anode (a <sub>2</sub> )
3	common cathode

### APPLICATIONS

- Electronic tuning in FM radio applications.

### DESCRIPTION

The BB804 is a variable capacitance double diode with a common cathode, fabricated in planar technology, and encapsulated in the SOT23 small plastic SMD package.

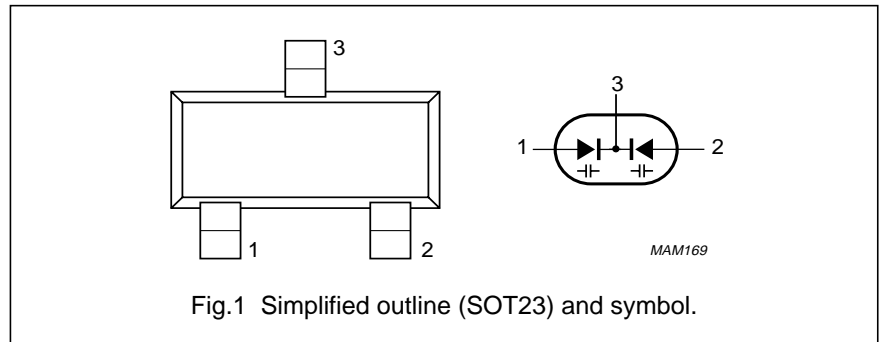


Fig.1 Simplified outline (SOT23) and symbol.

### LIMITING VALUES

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

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
<b>Per diode</b>				
$V_R$	continuous reverse voltage	–	18	V
$I_F$	continuous forward current	–	50	mA
$T_{stg}$	storage temperature	–55	+150	°C
$T_j$	operating junction temperature	–55	+125	°C

## VHF variable capacitance double diode

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
<b>Per diode</b>						
$I_R$	reverse current	$V_R = 16\text{ V}$ ; see Fig.3	–	–	20	nA
		$V_R = 16\text{ V}$ ; $T_j = 60\text{ °C}$ ; see Fig.3	–	–	200	nA
$r_s$	diode series resistance	$f = 100\text{ MHz}$ ; note 1	–	0.2	–	$\Omega$
$C_d$	diode capacitance	$V_R = 2\text{ V}$ ; $f = 1\text{ MHz}$ ; see Figs 2 and 4	42	–	46.5	pF
		$V_R = 2\text{ V}$ ; $f = 1\text{ MHz}$ ; white 2; see Figs 2 and 4	44	–	45.5	pF
$\frac{C_{d(2V)}}{C_{d(8V)}}$	capacitance ratio	$f = 1\text{ MHz}$	1.65	–	1.75	

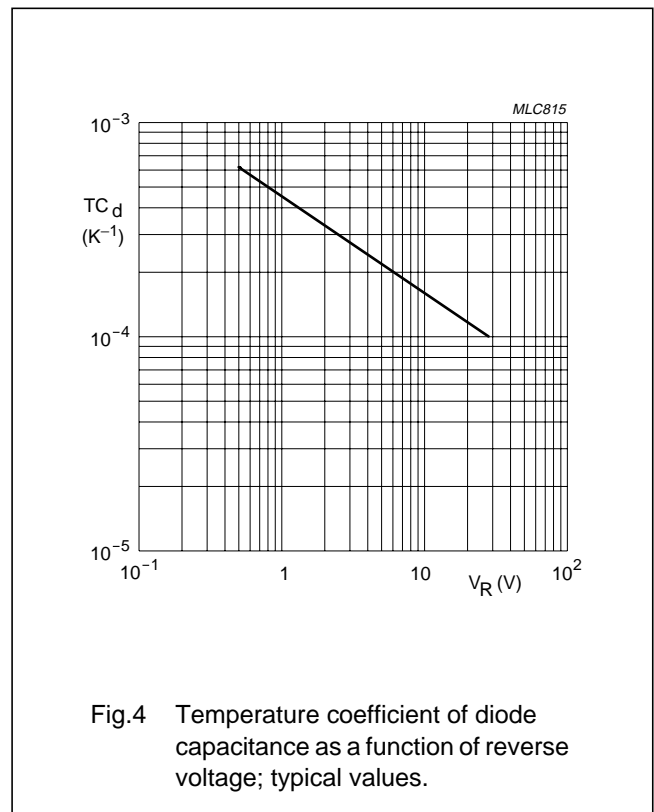
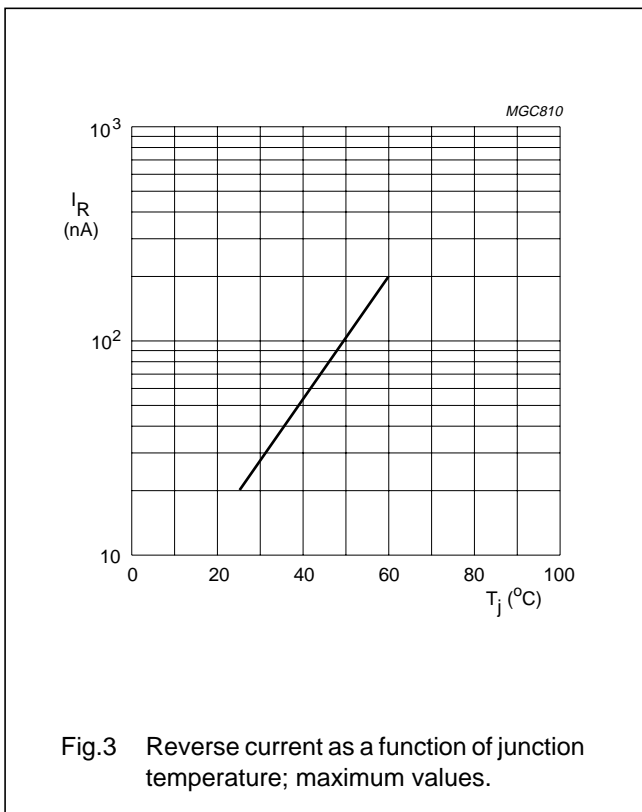
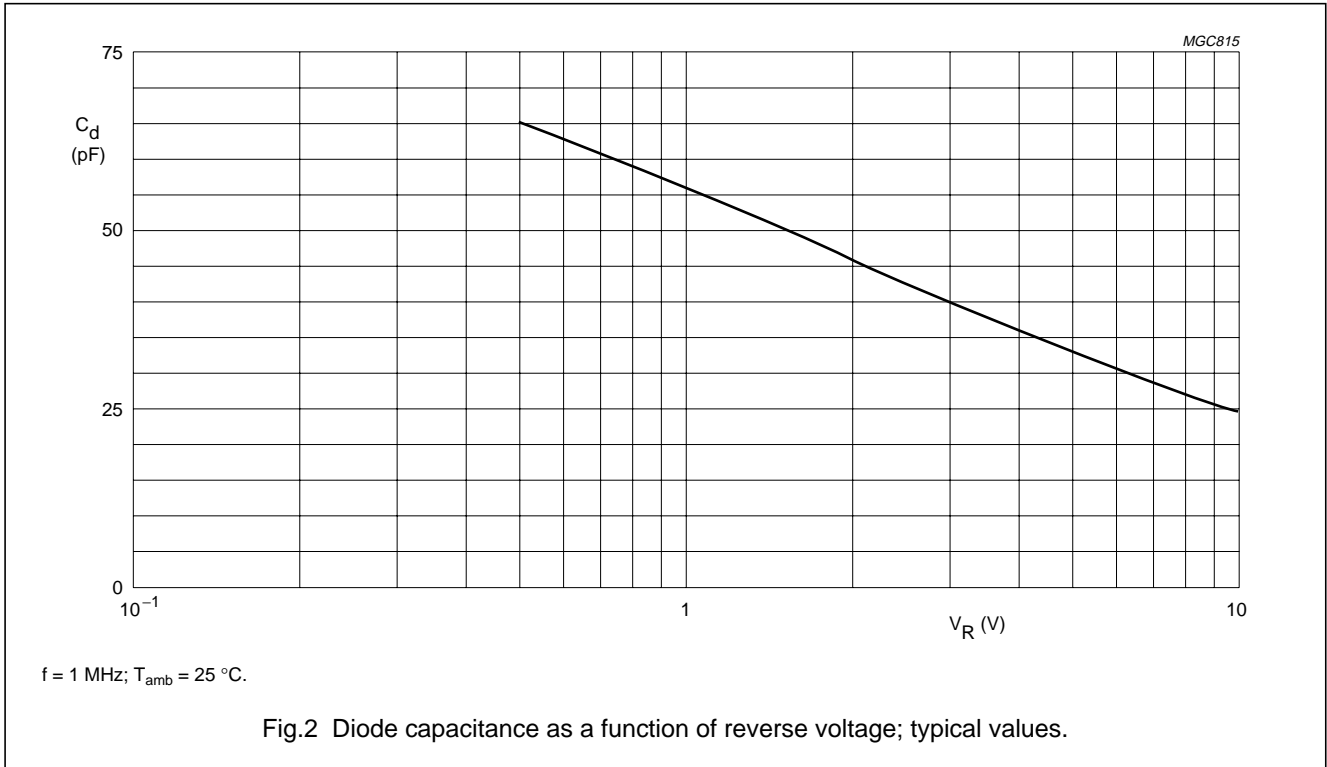
**Note**

- $V_R$  is the value at which  $C_d = 38\text{ pF}$ .

VHF variable capacitance double diode

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GRAPHICAL DATA



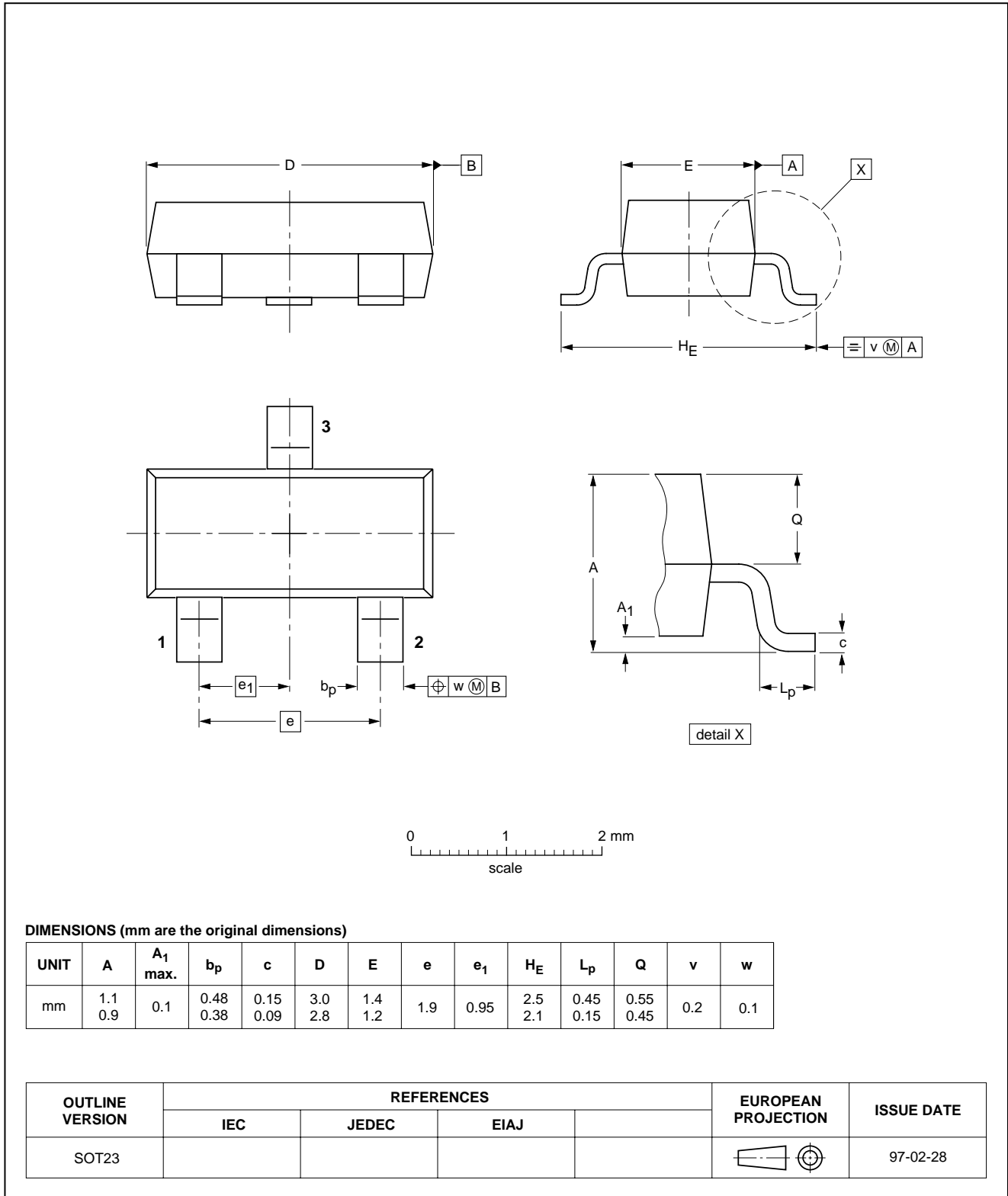
VHF variable capacitance double diode

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PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



## VHF variable capacitance double diode

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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.	

**LIFE SUPPORT APPLICATIONS**

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.

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