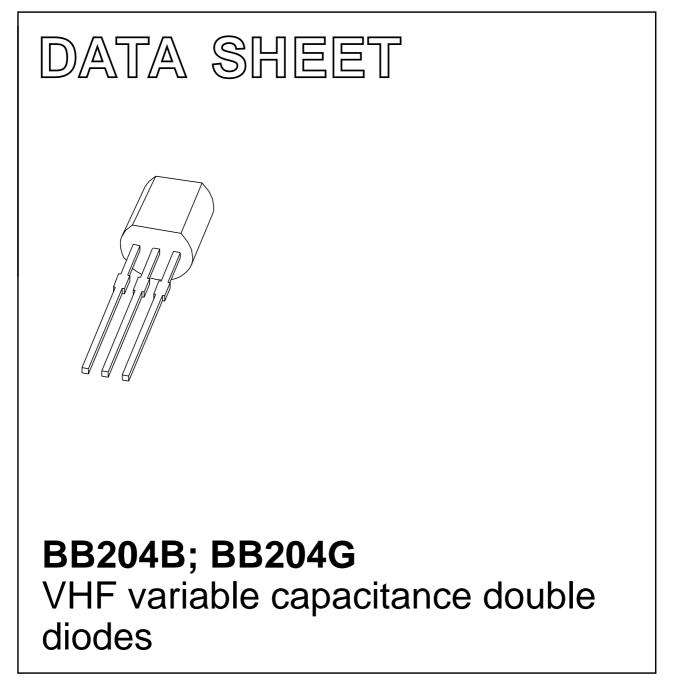
# DISCRETE SEMICONDUCTORS



Product specification Supersedes data of April 1992 File under Discrete Semiconductors, SC01 1996 May 03



**Philips Semiconductors** 

# VHF variable capacitance double diodes

PINNING

### BB204B; BB204G

#### FEATURES

#### • Selected capacitance ranges

- Leaded plastic package
- C30: 14 pF; ratio: 2.6.

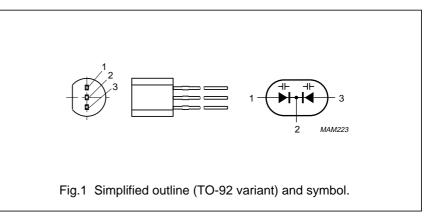
#### **APPLICATIONS**

- Electronic tuning in FM radio applications
- VCO.

#### DESCRIPTION

The BB204B, BB204G are variable capacitance double diodes with common cathodes, fabricated in planar technology, and encapsulated in TO-92 variant leaded plastic packages.

# PINDESCRIPTION1anode (a1)2common cathode3anode (a2)



#### LIMITING VALUES

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

SYMBOL	PARAMETER	MIN.	MAX.	UNIT		
Per diode						
V <sub>R</sub>	continuous reverse voltage	_	30	V		
I <sub>F</sub>	continuous forward current	_	100	mA		
T <sub>stg</sub>	storage temperature	-55	+100	°C		
Tj	operating junction temperature	-55	+100	°C		

# VHF variable capacitance double diodes

# BB204B; BB204G

#### **ELECTRICAL CHARACTERISTICS**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT			
Per diode									
I <sub>R</sub>	reverse current	V <sub>R</sub> = 30 V; see Fig.3	-	-	50	nA			
		V <sub>R</sub> = 30 V; T <sub>j</sub> = 85 °C; see Fig.3	-	-	300	nA			
r <sub>s</sub>	diode series resistance	f = 100 MHz; note 1	-	0.2	0.4	Ω			
C <sub>d</sub>	diode capacitance	see Figs 2 and 4							
	BB204B	V <sub>R</sub> = 3 V; f = 1 MHz	37	_	42	pF			
		V <sub>R</sub> = 8 V; f = 1 MHz	24	_	29	pF			
		V <sub>R</sub> = 30 V; f = 1 MHz	-	14	-	pF			
	BB204G	V <sub>R</sub> = 3 V; f = 1 MHz	34	-	39	pF			
		V <sub>R</sub> = 8 V; f = 1 MHz	22	_	27	pF			
		V <sub>R</sub> = 30 V; f = 1 MHz	-	14	-	pF			
C <sub>d(3V)</sub>	capacitance ratio	f = 1 MHz	2.5	_	2.8				
$\overline{C_{d(30V)}}$									

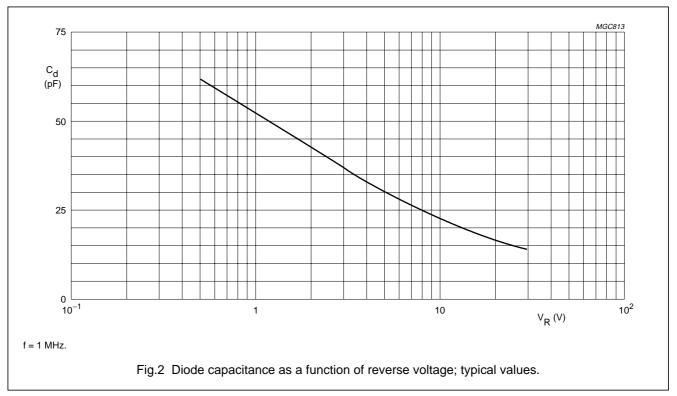
#### Note

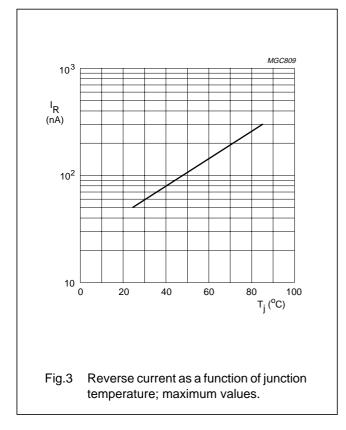
1.  $V_R$  is the value at which  $C_d = 38 \text{ pF}$ .

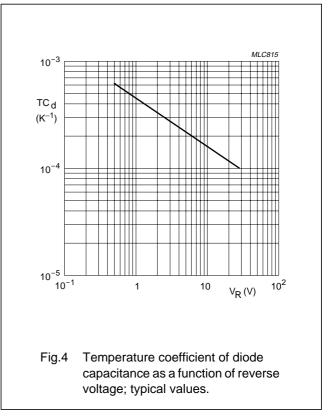
# VHF variable capacitance double diodes

## BB204B; BB204G

#### **GRAPHICAL DATA**



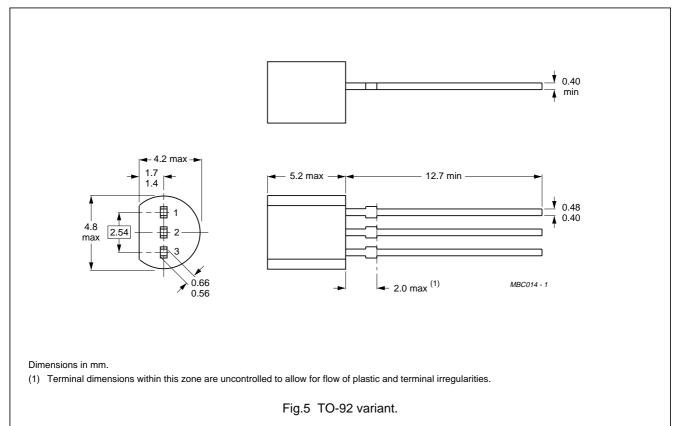




## VHF variable capacitance double diodes

## BB204B; BB204G

#### PACKAGE OUTLINE



#### DEFINITIONS

Data sheet status				
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.			
Limiting values				
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.				
Application information				

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.