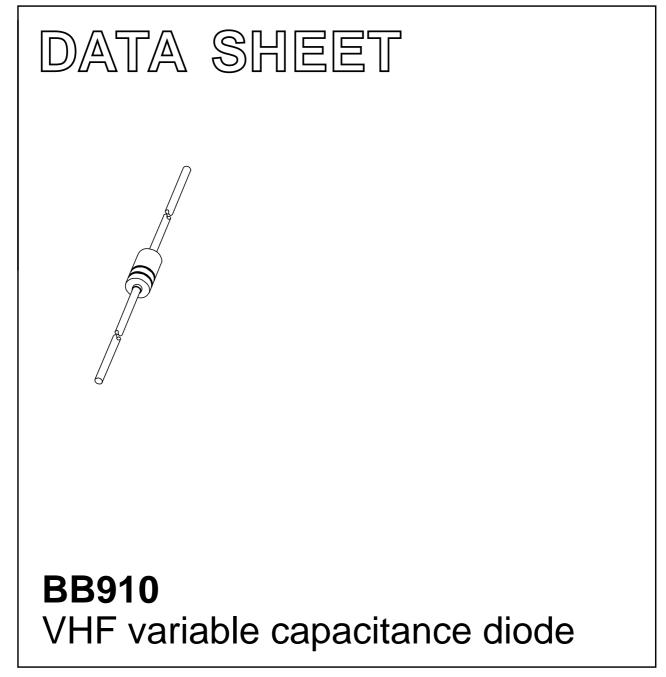
# DISCRETE SEMICONDUCTORS



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



# VHF variable capacitance diode

## **BB910**

## FEATURES

- Excellent linearity
- Matched to 2.5%
- Hermetically sealed leaded glass
  SOD68 (DO-34) package
- C28: 2.5; ratio: 16
- Low series resistance.

#### APPLICATIONS

- Electronic tuning in VHF television tuners, band B up to 460 MHz
- VCO.

## DESCRIPTION

The BB910 is a variable capacitance diode, fabricated in planar technology, and encapsulated in the hermetically sealed leaded glass SOD68 (DO-34) package.

## **ELECTRICAL CHARACTERISTICS**

T<sub>j</sub>= 25 °C; unless otherwise specified.

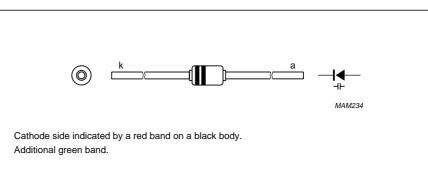


Fig.1 Simplified outline (SOD68; DO-34) and symbol.

## LIMITING VALUES

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

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
V <sub>R</sub>	continuous reverse voltage	_	30 V	
I <sub>F</sub>	continuous forward current	_	20	mA
T <sub>stg</sub>	storage temperature	-55	+150	°C
Tj	operating junction temperature	-55	+100	°C

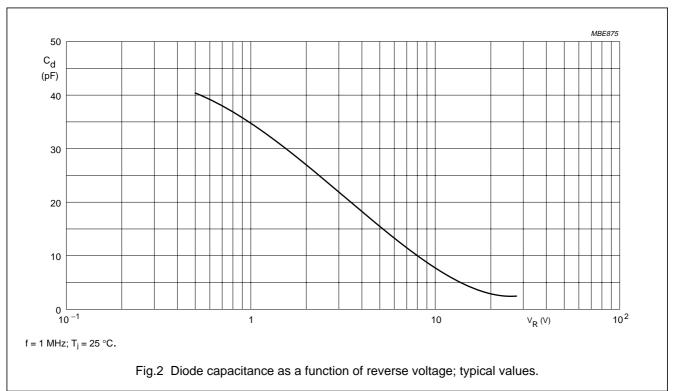
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I <sub>R</sub>	reverse current	V <sub>R</sub> = 28 V; see Fig.3	_	-	10	nA
		V <sub>R</sub> = 28 V; T <sub>j</sub> = 85 °C; see Fig.3	_	-	200	nA
r <sub>s</sub>	diode series resistance	f = 100 MHz; note 1	-	-	1	Ω
C <sub>d</sub>	diode capacitance	$V_R$ = 0.5 V; f = 1 MHz; see Figs 2 and 4	38	-	-	pF
		$V_R$ = 28 V; f = 1 MHz; see Figs 2 and 4	2.3	_	2.7	pF
$\frac{C_{d(0.5V)}}{C_{d(28V)}}$	capacitance ratio	f = 1 MHz	14	_	_	
$\frac{\Delta C_d}{C_d}$	capacitance matching	V <sub>R</sub> = 0.5 to 28 V	_	_	2.5	%

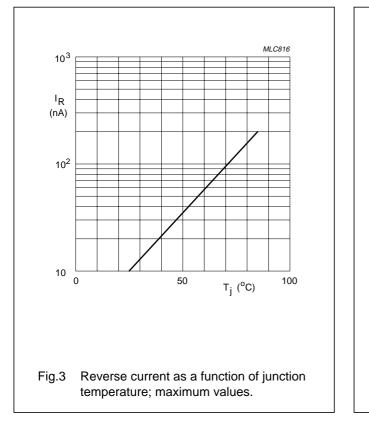
#### Note

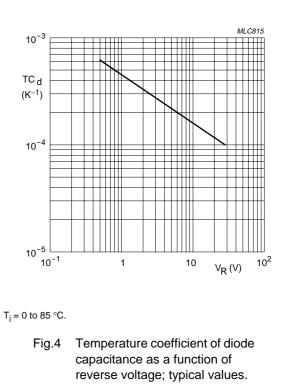
1.  $V_R$  is the value at which  $C_d = 40 \text{ pF}$ .

# VHF variable capacitance diode

## **GRAPHICAL DATA**





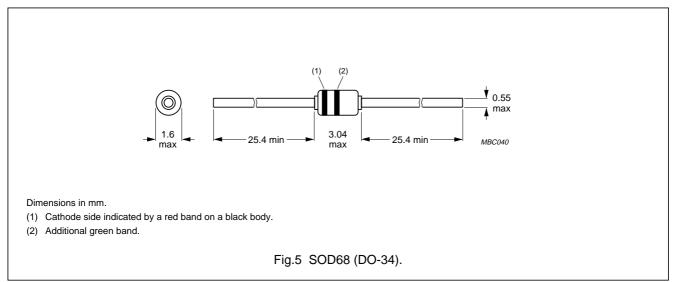


BB910

## VHF variable capacitance diode

## BB910

### 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			
more of the limiting values m of the device at these or at a	accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or may cause permanent damage to the device. These are stress ratings only and operation any other conditions above those given in the Characteristics sections of the specification imiting values for extended periods may affect device reliability.		
Application information			
Where application information	on 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.