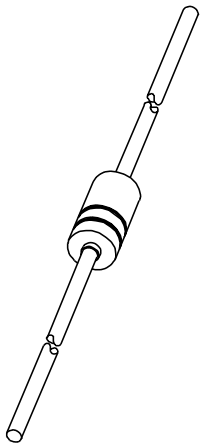
DATA SHEET



BB910
VHF variable capacitance diode

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

1996 May 03

Philips
Semiconductors

PHILIPS

VHF variable capacitance diode BB910

FEATURES

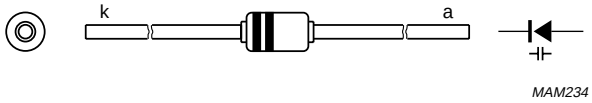
- Excellent linearity
- Matched to 2.5%
- Hermetically sealed leaded glass SOD68 (DO-34) package
- C28: 2.5; ratio: 16
- Low series resistance.

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.



Cathode side indicated by a red band on a black body.
Additional green band.

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_R	continuous reverse voltage	–	30	V
I_F	continuous forward current	–	20	mA
T_{stg}	storage temperature	–55	+150	°C
T_j	operating junction temperature	–55	+100	°C

ELECTRICAL CHARACTERISTICS

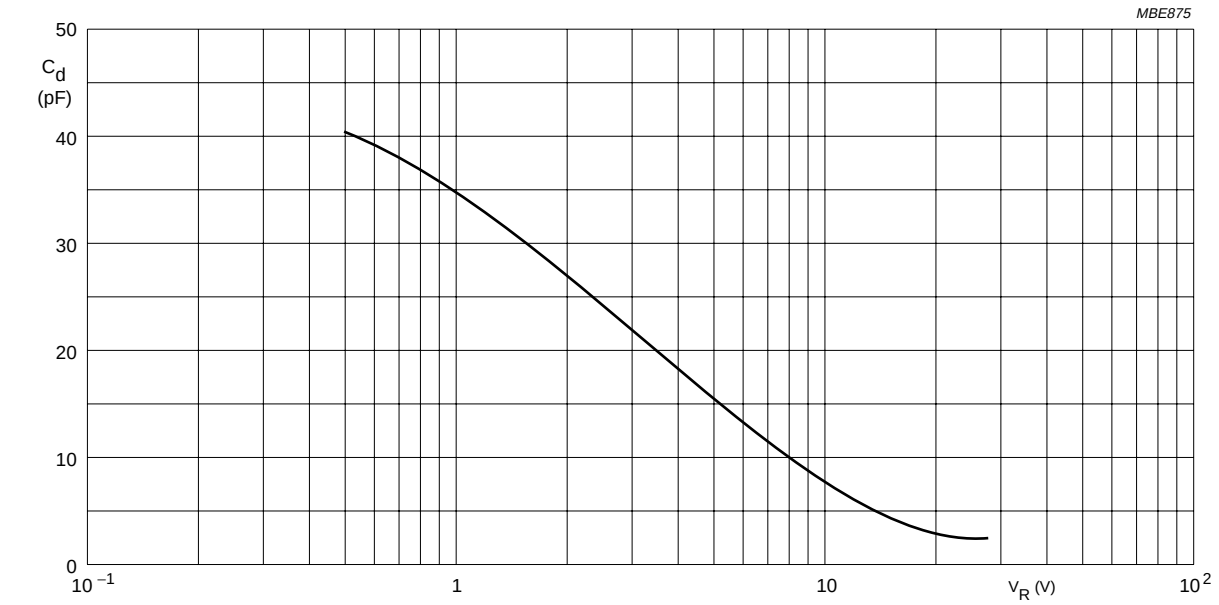
T_j= 25 °C; unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_R	reverse current	V_R = 28 V; see Fig.3	–	–	10	nA
		V_R = 28 V; T_j = 85 °C; see Fig.3	–	–	200	nA
r_s	diode series resistance	f = 100 MHz; note 1	–	–	1	Ω
C_d	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_R = 0.5 to 28 V	–	–	2.5	%

Note

1. V_R is the value at which C_d = 40 pF.

GRAPHICAL DATA



f = 1 MHz; T_j = 25 °C.

Fig.2 Diode capacitance as a function of reverse voltage; typical values.

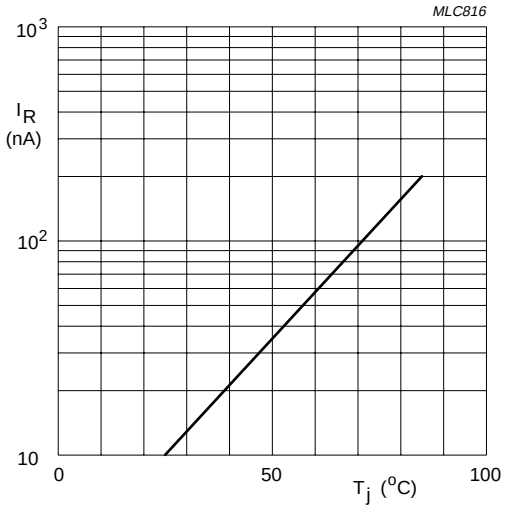
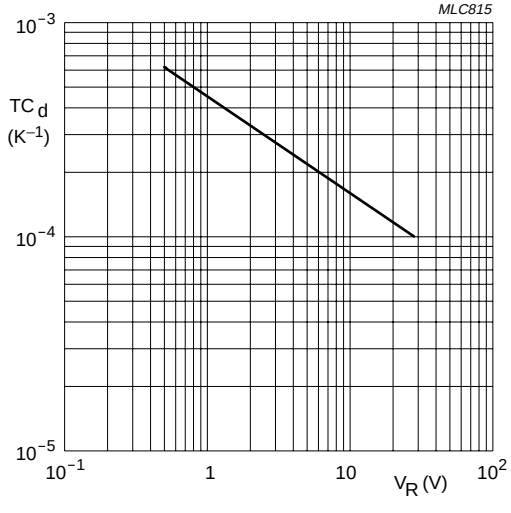


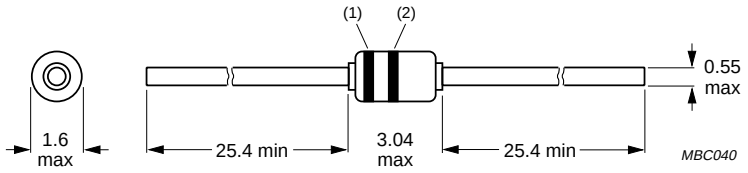
Fig.3 Reverse current as a function of junction temperature; maximum values.



T_j = 0 to 85 °C.

Fig.4 Temperature coefficient of diode capacitance as a function of reverse voltage; typical values.

PACKAGE OUTLINE



Dimensions in mm.

(1) Cathode side indicated by a red band on a black body.

(2) Additional green band.

Fig.5 SOD68 (DO-34).

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

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