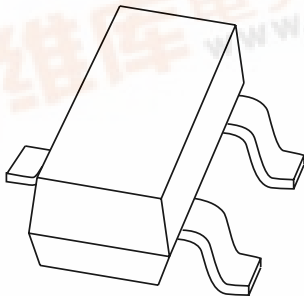


DISCRETE SEMICONDUCTORS

DATA SHEET



BB804

VHF variable capacitance double diode

Product specification

1998 Nov 25

Supersedes data of 1996 May 03

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

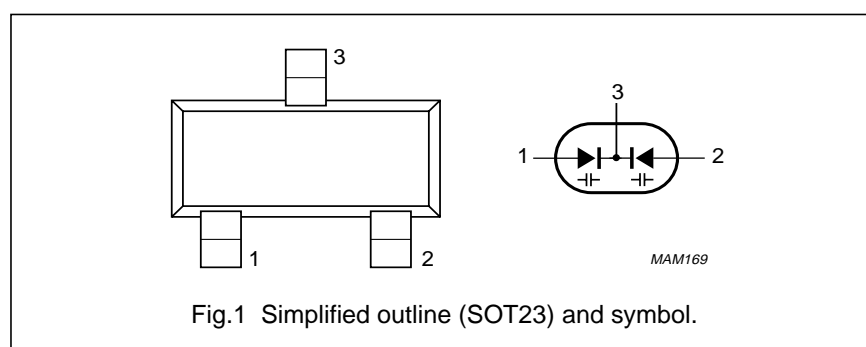
PIN	DESCRIPTION
1	anode (a ₁)
2	anode (a ₂)
3	common cathode

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.



LIMITING VALUES

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

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
Per diode				
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 $T_j = 25\text{ }^\circ\text{C}$ unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Per diode						
I_R	reverse current	$V_R = 16\text{ V}$; see Fig.3	–	–	20	nA
		$V_R = 16\text{ V}$; $T_j = 60\text{ }^\circ\text{C}$; see Fig.3	–	–	200	nA
r_s	diode series resistance	$f = 100\text{ MHz}$; note 1	–	0.2	–	Ω
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	

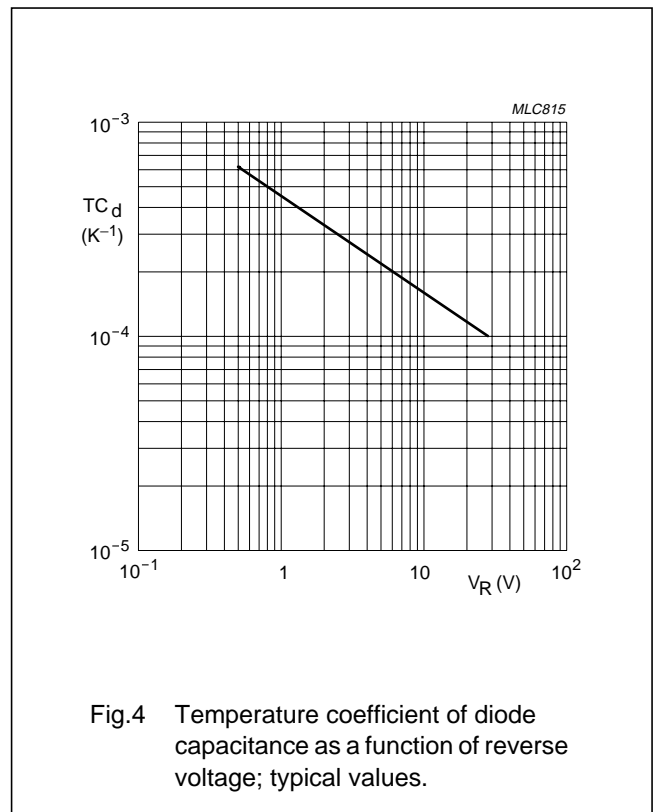
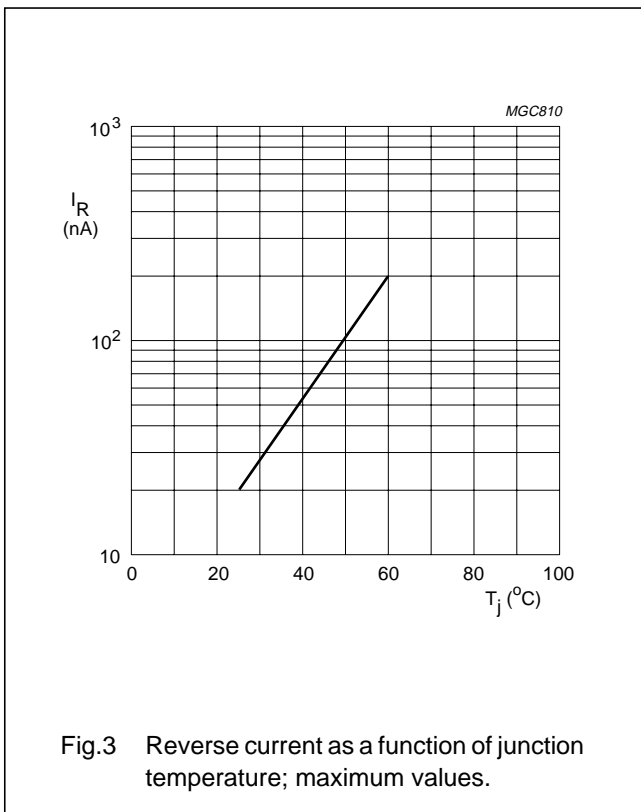
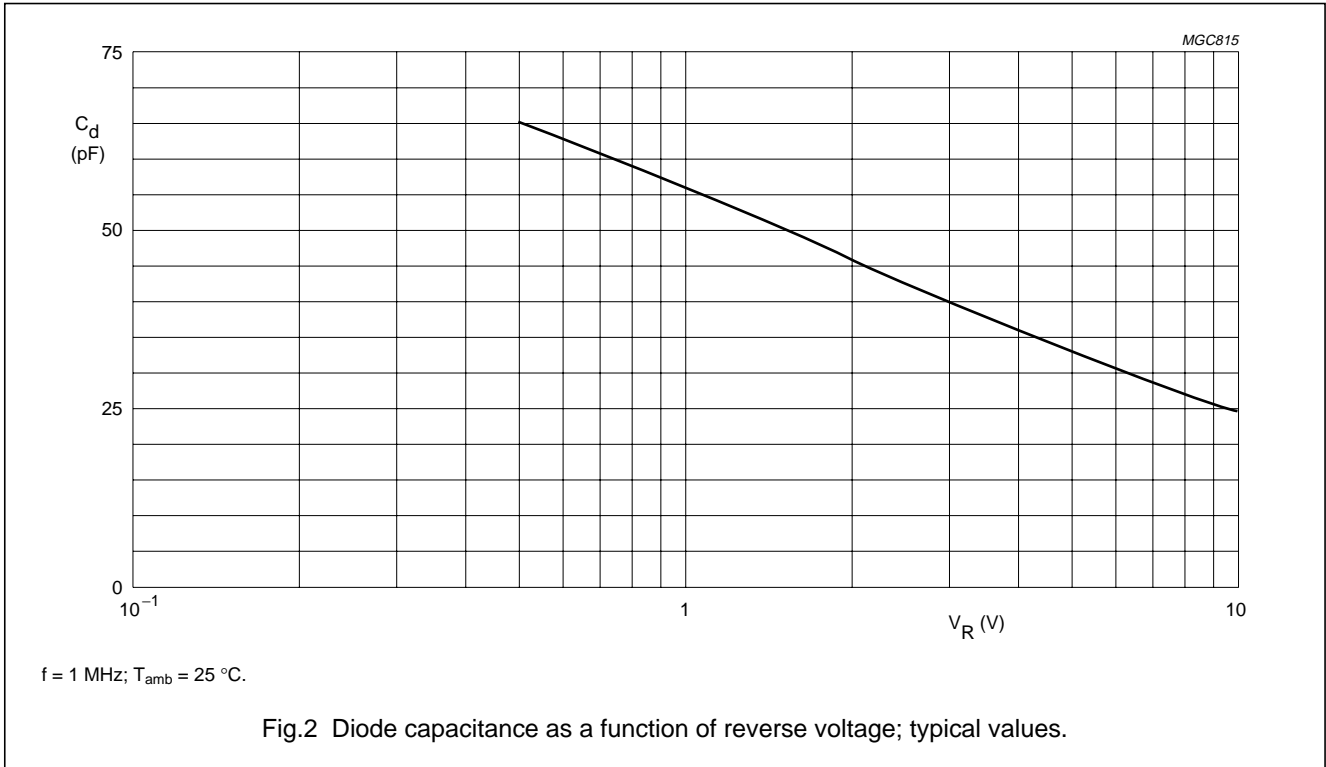
Note

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

VHF variable capacitance double diode

BB804

GRAPHICAL DATA



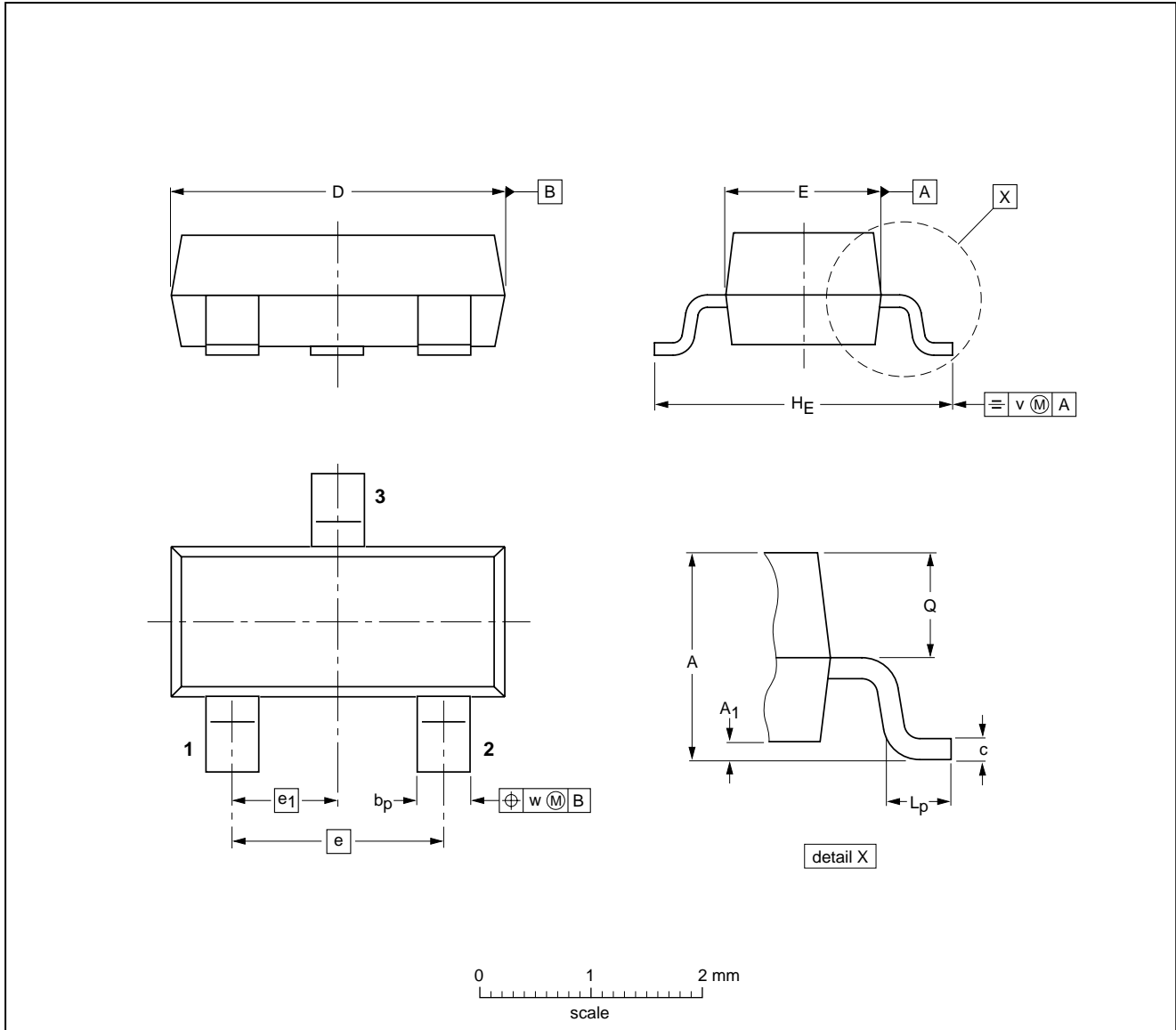
VHF variable capacitance double diode

BB804

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max.	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w
mm	1.1 0.9	0.1	0.48 0.38	0.15 0.09	3.0 2.8	1.4 1.2	1.9	0.95	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT23						97-02-28

VHF variable capacitance double diode

BB804

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.

VHF variable capacitance double diode

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