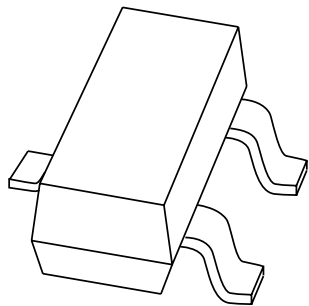


# DATA SHEET



## **BB201**

Low-voltage variable capacitance  
double diode

Product specification

2001 Oct 12

# Low-voltage variable capacitance double diode

**BB201**

**FEATURES**

- Excellent linearity
- C1: 95 pF; C7.5: 27.6 pF
- C1 to C7.5 ratio: min. 3.1
- Very low series resistance
- Small plastic SMD package.

**APPLICATIONS**

- Electronic tuning in FM-radio
- Voltage Controlled Oscillators (VCO).

**DESCRIPTION**

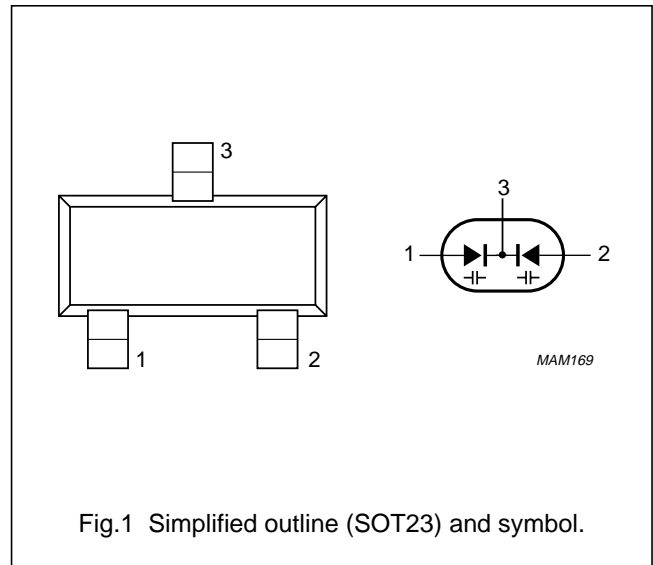
The BB201 is a variable capacitance double diode with a common cathode, fabricated in silicon planar technology and encapsulated in the SOT23 small plastic SMD package.

**MARKING**

TYPE NUMBER	MARKING CODE
BB201	SCp

**PINNING**

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



**LIMITING VALUES**

In accordance with the Absolute Maximum Rating System (IEC 60134).

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
<b>Per diode</b>				
V <sub>R</sub>	continuous reverse voltage	–	15	V
I <sub>F</sub>	continuous forward current	–	20	mA
T <sub>stg</sub>	storage temperature range	–55	+125	°C
T <sub>j</sub>	operating junction temperature	–55	+125	°C

Low-voltage variable capacitance double diode

BB201

**CHARACTERISTICS**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
<b>Per diode</b>						
$I_R$	reverse current	$V_R = 15\text{ V}$	–	–	10	nA
		$V_R = 15\text{ V}; T_j = 85\text{ }^\circ\text{C}$	–	–	200	nA
$r_S$	diode series resistance	$f = 100\text{ MHz}; V_R = 3\text{ V}$	–	0.25	0.5	$\Omega$
$C_d$	diode capacitance	$V_R = 1\text{ V}; f = 1\text{ MHz}$	89	95	102	pF
		$V_R = 3\text{ V}; f = 1\text{ MHz}$	–	60	–	pF
		$V_R = 7.5\text{ V}; f = 1\text{ MHz}$	25.5	27.6	29.7	pF
		$V_R = 8\text{ V}; f = 1\text{ MHz}$	–	25.5	–	pF
$\frac{C_{d(1V)}}{C_{d(7.5V)}}$	capacitance ratio	$f = 1\text{ MHz}$	3.1	–	3.8	

**GRAPHICAL DATA**

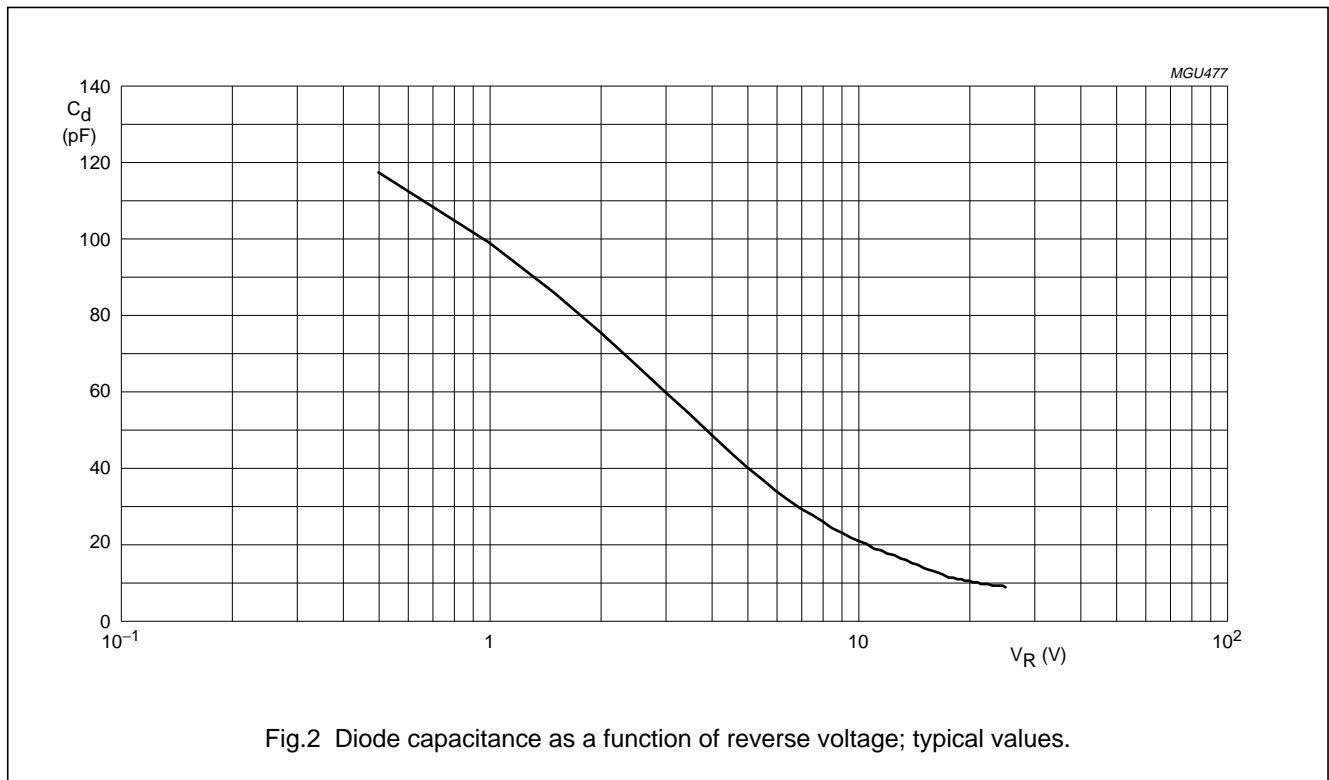
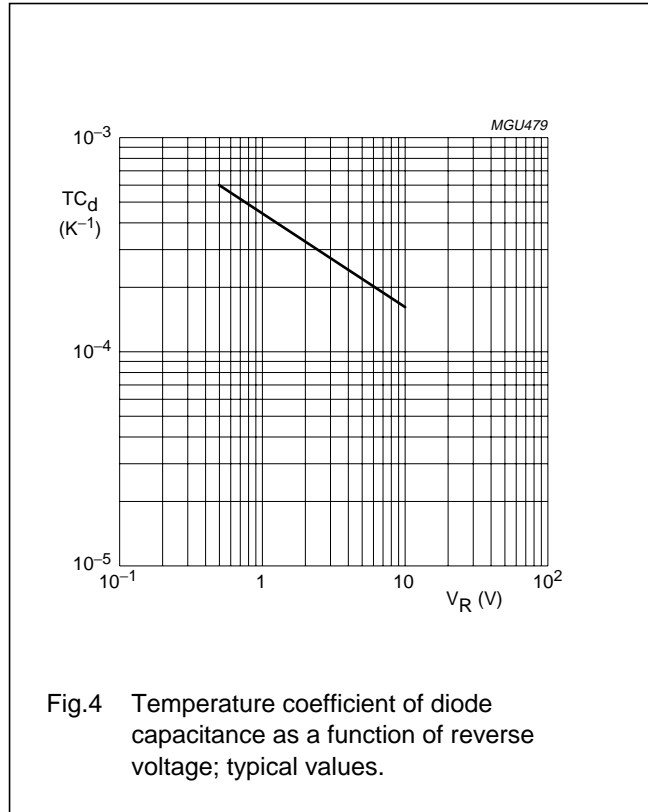
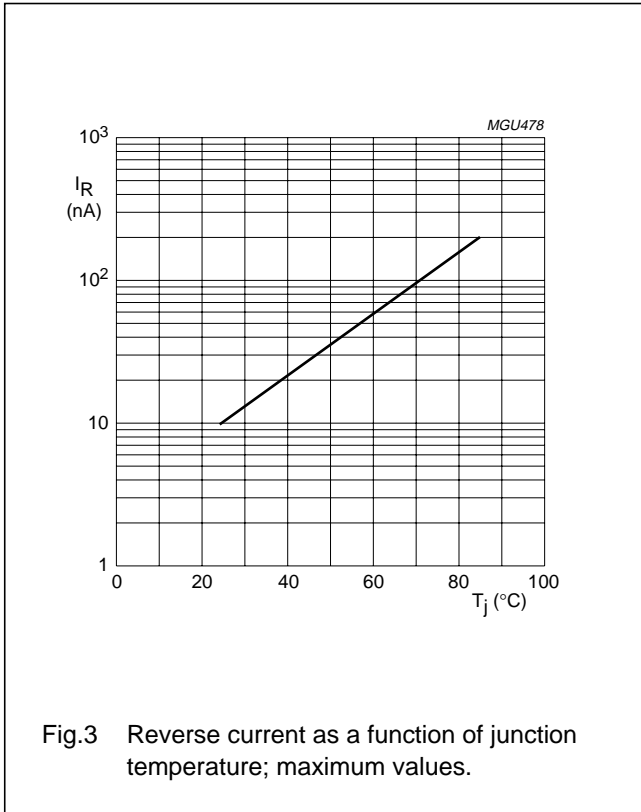


Fig.2 Diode capacitance as a function of reverse voltage; typical values.

Low-voltage variable capacitance double diode

BB201



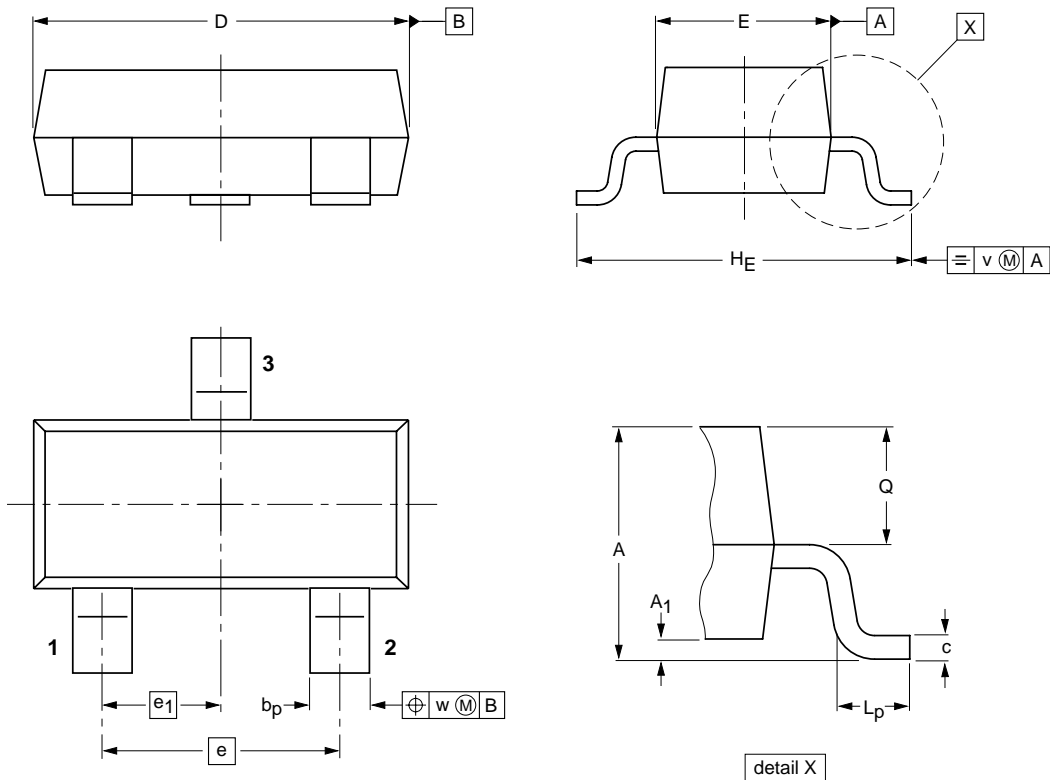
Low-voltage variable capacitance double diode

BB201

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



DIMENSIONS (mm are the original dimensions)

UNIT	A	A <sub>1</sub> max.	b <sub>p</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	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		TO-236AB				97-02-28- 99-09-13

## Low-voltage variable capacitance double diode

BB201

## DATA SHEET STATUS

DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	DEFINITIONS
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Preliminary data	Qualification	This data sheet contains data from the preliminary specification. Supplementary data will be published at a later date. Philips Semiconductors reserves the right to change the specification without notice, in order to improve the design and supply the best possible product.
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Low-voltage variable capacitance double diode

BB201

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**NOTES**

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## **Contact information**

For additional information please visit <http://www.semiconductors.philips.com>. Fax: +31 40 27 24825

For sales offices addresses send e-mail to: [sales.addresses@www.semiconductors.philips.com](mailto:sales.addresses@www.semiconductors.philips.com).

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