

# VHF variable capacitance diode

## FEATURES

- Excellent linearity
- Ultra small plastic SMD package
- C28: 1 pF; ratio: 14.

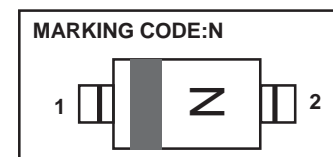
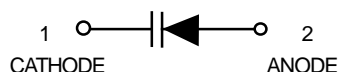
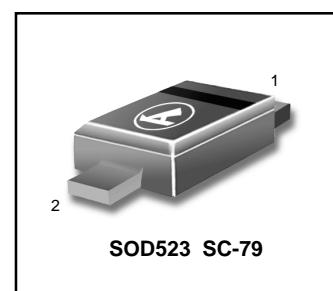
## APPLICATIONS

- Electronic tuning in satellite tuners
- Tuneable coupling
- Voltage controlled oscillators (VCO).

## DESCRIPTION

The BB181 is a variable capacitance diode, fabricated in planar technology and encapsulated in the SOD523 (SC-79) ultra small plastic SMD package.

**BB 181**



**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	+150	°C

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$I_R$	reverse current	$V_R = 30\text{ V}$ ; see Fig.2	–	10	nA
		$V_R = 30\text{ V}$ ; $T_j = 85^\circ\text{C}$ ; see Fig.2	–	200	nA
$r_s$	diode series resistance	$f = 470\text{ MHz}$ ; note 1	–	3	$\Omega$
$C_d$	diode capacitance	$V_R = 0.5\text{ V}$ ; $f = 1\text{ MHz}$ ; see Figs 1 and 3	8	17	pF
		$V_R = 28\text{ V}$ ; $f = 1\text{ MHz}$ ; see Figs 1 and 3	0.7	1.055	pF
$\frac{C_{d(0.5V)}}{C_{d(28V)}}$	capacitance ratio	$f = 1\text{ MHz}$	12	16	

## Note

1.  $V_R$  is the value at which  $C_d = 9\text{ pF}$ .

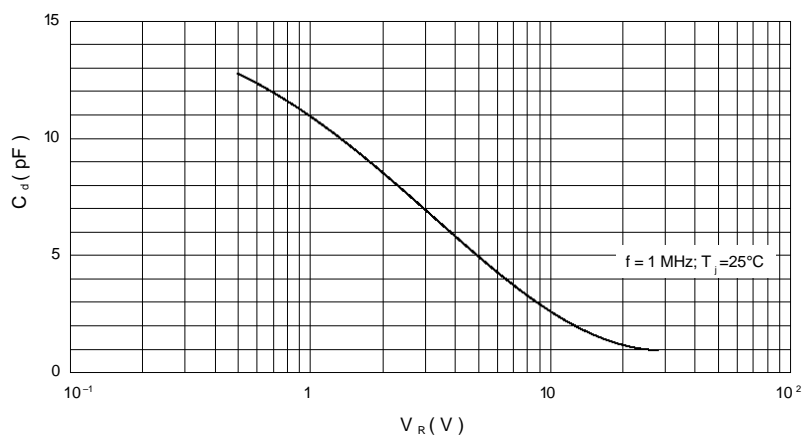
**BB 181**


Fig.1 Diode capacitance as a function of reverse voltage; typical values.

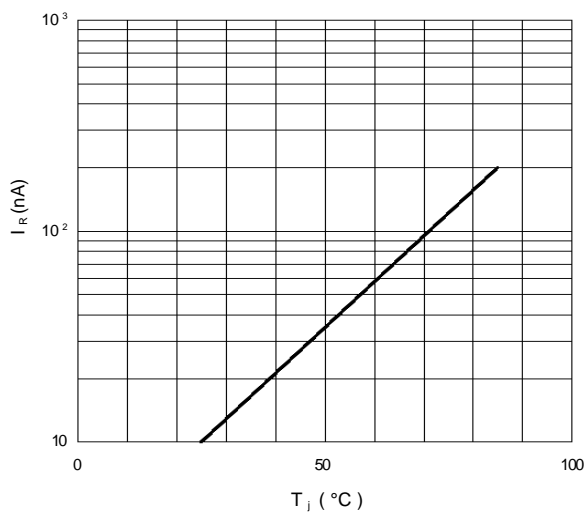


Fig.2 Reverse current as a function of junction temperature; maximum values.

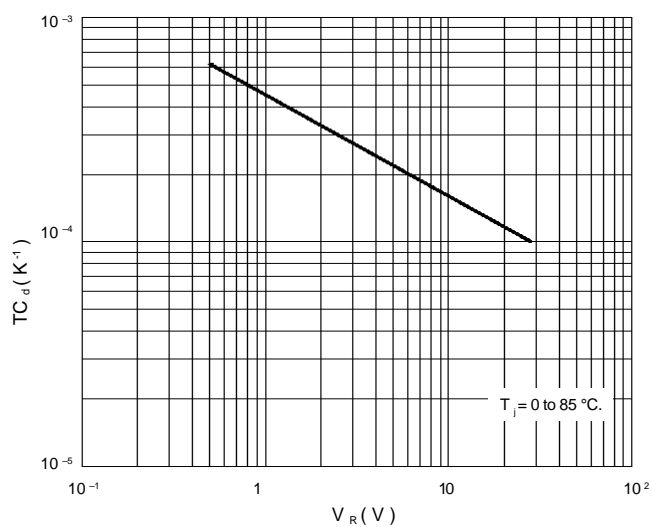


Fig.3 Temperature coefficient of diode capacitance as a function of reverse voltage; typical values.