

# VHF variable capacitance diode

## FEATURES

- High linearity
- Excellent matching to 2% DMA
- Ultra small plastic SMD package
- C25: 2.8 pF; ratio: 17
- Low series resistance.

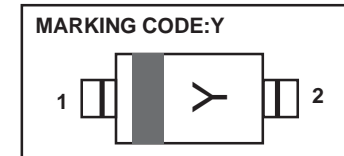
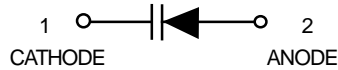
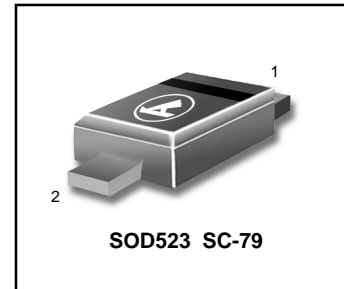
## APPLICATIONS

- Electronic tuning in VHF television tuners, band A up to 160 MHz
- Voltage controlled oscillators (VCO).

## DESCRIPTION

The BB182B is a planar technology variable capacitance diode, in a SOD523 (SC-79) package. The excellent matching performance is achieved by gliding matching and a direct matching assembly procedure.

**BB 182B**



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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_R$	continuous reverse voltage		–	34	V
$V_{RM}$	peak reverse voltage	in series with a 10 kΩ resistor	–	35	V
$I_F$	continuous forward current		–	20	mA
$T_{stg}$	storage temperature		–55	+150	°C
$T_j$	operating junction temperature		–55	+125	°C

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	TYP.	UNIT
$I_R$	reverse current	$V_R = 32\text{ V}$ ; see Fig.2	–	–	10	nA
		$V_R = 32\text{ V}$ ; $T_j=85^\circ\text{C}$ ; see Fig.2	–	–	200	nA
$r_s$	diode series resistance	$f = 470\text{ MHz}$ ; $V_R = 5\text{ V}$	–	–	1.1	Ω
$C_d$	diode capacitance	$V_R = 2\text{ V}$ ; $f = 1\text{ MHz}$ ; see Figs 1 and 3	47	–	53	pF
		$V_R = 25\text{ V}$ ; $f = 1\text{ MHz}$ ; see Figs 1 and 3	2.65	–	3	pF
$\frac{C_{d(2V)}}{C_{d(25V)}}$	capacitance ratio	$f = 1\text{ MHz}$	17	–	–	
$\frac{\Delta C_d}{C_d}$	capacitance matching	$V_R = 2\text{ to }25\text{ V}$ ; in a sequence of 15 diodes(gliding)	–	–	2	%

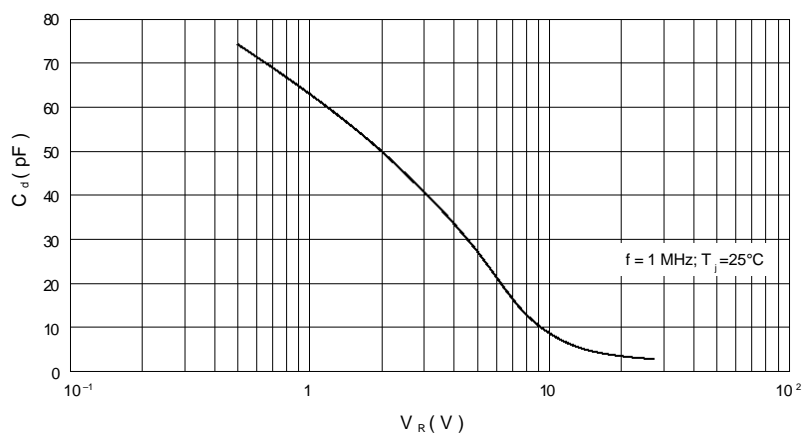
**BB 182B**


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

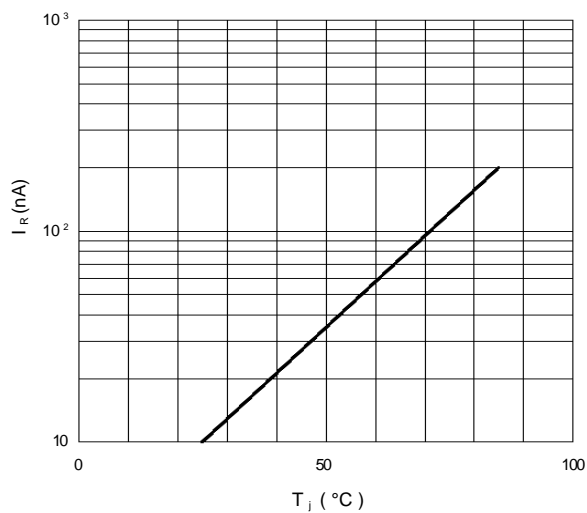


Fig.2 Reverse current as a function of junction temperature; maximum values.

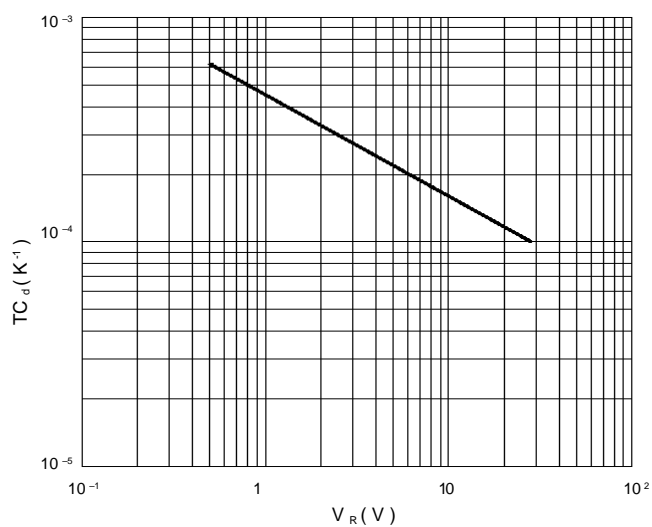


Fig.3 Temperature coefficient of diode capacitance as a function of reverse voltage; typical values.