

# VHF Variable Capacitance Diode

### FEATURES

- High linearity
- Excellent matching to 1% DMA
- Very small plastic SMD package
- C28: 2.5 pF; ratio: 26.

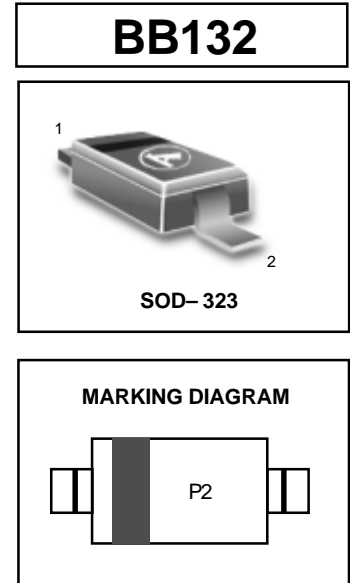
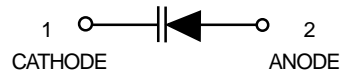
### APPLICATIONS

- Electronic tuning in VHF television tuners, band A up to 160 MHz
- VCO.

### DESCRIPTION

The BB132 is a variable capacitance diode fabricated in planar technology, and encapsulated in the SOD323 very small plastic SMD package.

The excellent matching performance is achieved by gliding matching and a direct matching assembly procedure.



### 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	+125	°C

### ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$I_R$	reverse current	$V_R = 30\text{ V}$ ; see Fig.2	–	10	nA
		$V_R = 30\text{ V}$ ; $T_j = 85\text{ °C}$ ; see Fig.2	–	200	nA
$r_s$	diode series resistance	$f = 100\text{ MHz}$ ; note 1	–	2	$\Omega$
$C_d$	diode capacitance	$V_R = 0.5\text{ V}$ ; $f = 1\text{ MHz}$ ; see Figs 1 and 3	60	75	pF
		$V_R = 28\text{ V}$ ; $f = 1\text{ MHz}$ ; see Figs 1 and 3	2.3	2.75	pF
$\frac{C_d(0.5V)}{C_d(28V)}$	capacitance ratio	$f = 1\text{ MHz}$	24	30	
$\frac{\Delta C_d}{C_d}$	capacitance matching	$V_R = 0.5\text{ to }28\text{ V}$ ; in a sequence of 4 diodes (gliding)	–	1	%
		$V_R = 0.5\text{ to }28\text{ V}$ ; in a sequence of 15 diodes (gliding)	–	2	%

### Note

1.  $V_R$  is the value at which  $C_d = 30\text{ pF}$ .

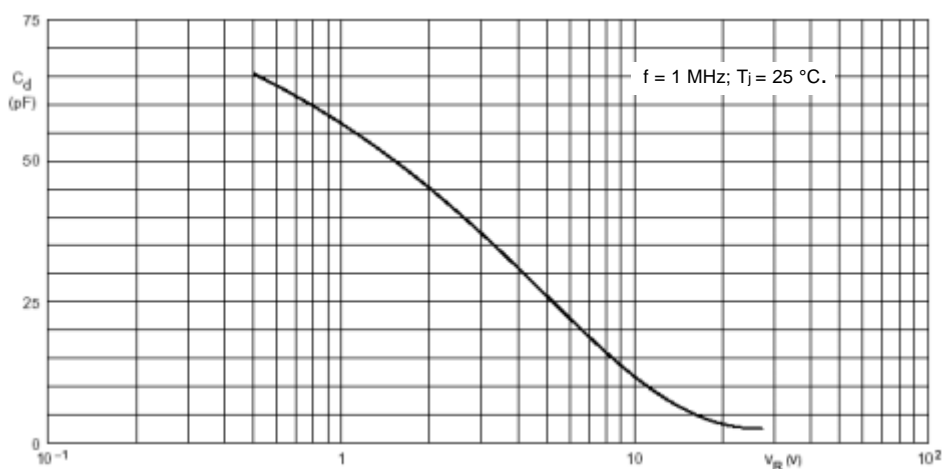
**BB132**


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

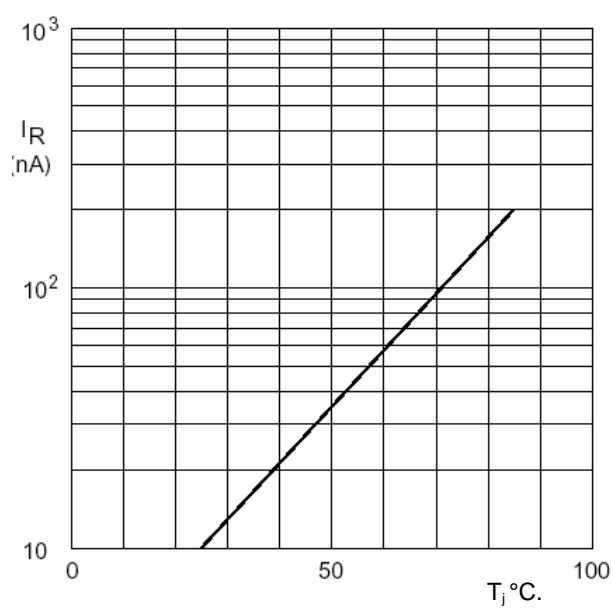


Fig.2 Reverse current as a function of junction temperature; maximum values.

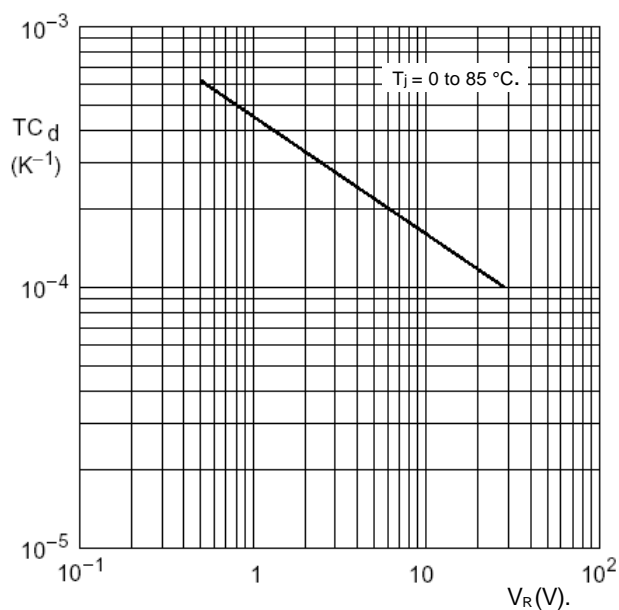


Fig.3 Temperature coefficient of diode capacitance as a function of reverse voltage; typical values.