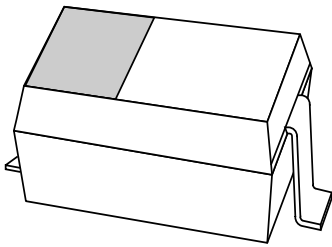**TY Semicondutor**® TY

DATA SHEET

BB153

FEATURES

- Excellent linearity
- Excellent matching to 2% DMA
- Very small plastic SMD package
- C28: 2.6 pF; ratio 15
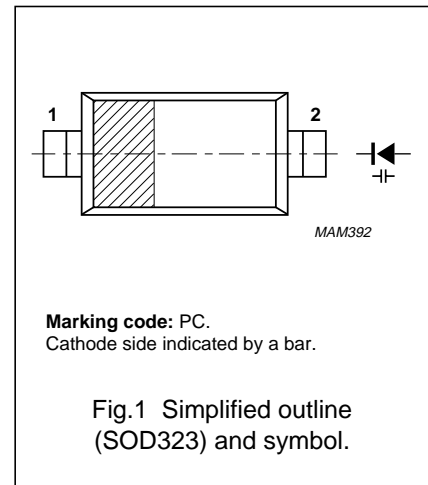- Very low series resistance.

APPLICATIONS

- Electronic tuning in VHF television tuners, band B up to 460 MHz
- Voltage controlled oscillators (VCO).

DESCRIPTION

The BB153 is a planar technology variable capacitance diode, in a SOD323 very small plastic SMD package. The excellent matching performance is achieved by gliding matching and a direct matching assembly procedure.

PINNING

PIN	DESCRIPTION
1	cathode
2	anode

MAM392

Marking code: PC.
Cathode side indicated by a bar.

Fig.1 Simplified outline (SOD323) and symbol.

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_R	continuous reverse voltage		–	32	V
V_{Rp}	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 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_R	reverse current	V_R = 30 V; see Fig.3	–	–	10	nA
		V_R = 30 V; T_j = 85 °C; see Fig.3	–	–	200	nA
r_s	diode series resistance	f = 100 MHz; V_R is the value at which C_d = 30 pF	–	0.65	0.8	Ω
C_d	diode capacitance	V_R = 1 V; f = 1 MHz; see Figs 2 and 4	34.65	–	42.35	pF
		V_R = 28 V; f = 1 MHz; see Figs 2 and 4	2.361	–	2.754	pF
$\dfrac{C_{d(1V)}}{C_{d(2V)}}$	capacitance ratio	f = 1 MHz	–	1.3	–	
$\dfrac{C_{d(1V)}}{C_{d(28V)}}$	capacitance ratio	f = 1 MHz	13.5	–	–	
$\dfrac{C_{d(25V)}}{C_{d(28V)}}$	capacitance ratio	f = 1 MHz	–	1.08	–	
$\dfrac{\Delta C_d}{C_d}$	capacitance matching	V_R = 1 to 28 V; in a sequence of 15 diodes (gliding)	–	–	2	%