LESHAN RADIO COMPANY, LTD.

VHF Variable Capacitance Diode

BB133T1

SOD– 323

FEATURES

- Excellent linearity
- Excellent matching to 0.7% DMA
- Very small plastic SMD package
- C28: 2.5 pF; ratio: 16.
- Low series resistance.

APPLICATIONS

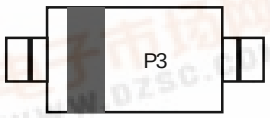
- Electronic tuning in VHF television tuners, band B up to 460 MHz
- VCO.

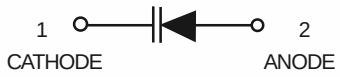
DESCRIPTION

The BB133T1 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. The unmatched type, BB150 has the same specification.

MARKING DIAGRAM





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	℃
T_j	operating junction temperature	–55	+125	℃

ELECTRICAL CHARACTERISTICS

T_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_R	reverse current	V_R = 30 V; see Fig.2	–	10	nA
		V_R = 30 V; T_j = 85 °C; see Fig.2	–	200	nA
r_s	diode series resistance	f = 100 MHz; note 1	–	0.9	Ω
C_d	diode capacitance	V_R = 0.5 V; f = 1 MHz; see Figs 1 and 3	38	46	pF
		V_R = 28 V;f = 1 MHz; see Figs 1 and 3	2.2	2.6	pF
$\frac{C_{d(0.5V)}}{C_{d(28V)}}$	capacitance ratio	f = 1 MHz	14	21	
$\frac{\Delta C_d}{C_d}$	capacitance matching	V_R = 0.5 to 28 V; in a sequence of 4 diodes (gliding)	–	0.7	%
		V_R= 0.5 to 28 V; in a sequence of 15 diodes (gliding)	–	2	%

Note

1. V_R is the value at which C_d = 30 pF.

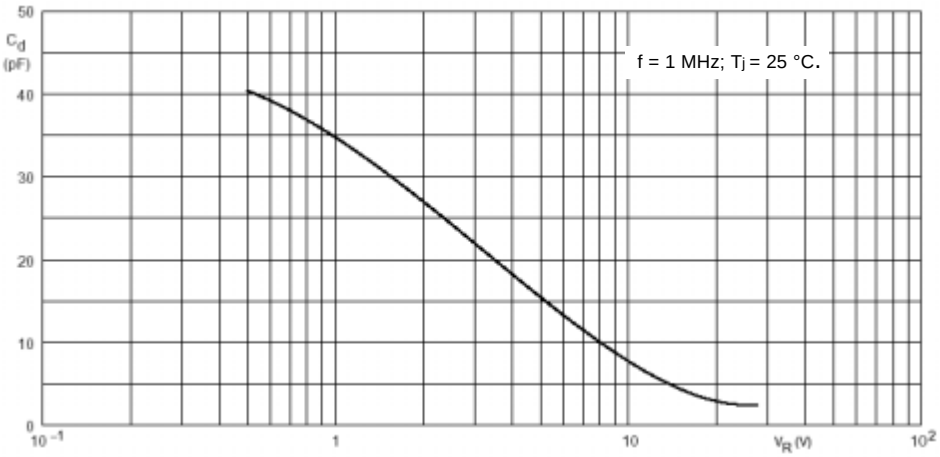


Fig.1 Diode capacitance as a function of reverse voltage; typical values.

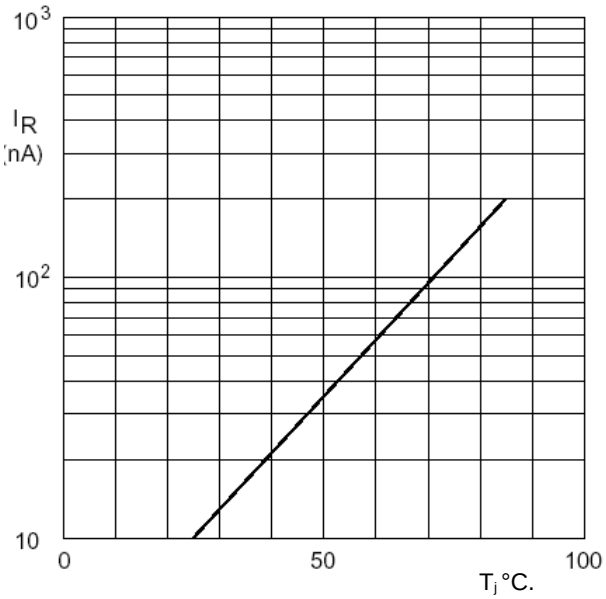


Fig.2 Reverse current as a function of junction temperature; maximum values.

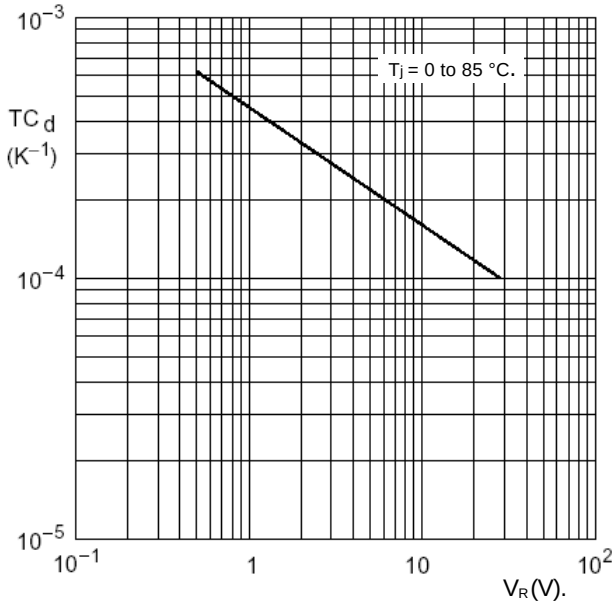


Fig.3 Temperature coefficient of diode capacitance as a function of reverse voltage; typical values.