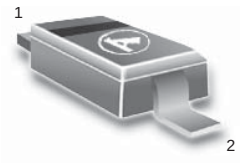
UHF Variable Capacitance Diode

BB135



SOD– 323

FEATURES

- Excellent linearity
- Very small plastic SMD package.
- C28: 1.9 pF; ratio: 10
- Low series resistance.

APPLICATIONS

- Electronic tuning in UHF television tuners.
- Radio upconversion concepts
- VCO.

DESCRIPTION

The BB135 is a variable capacitance diode, fabricated in planar technology, and encapsulated in the SOD323 very small plastic SMD package.

The matched type, BB134 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	°C
T_j	operating junction temperature	–55	+125	°C

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 = 470 MHz; note 1	–	0.75	Ω
C_d	diode capacitance	V_R = 0.5 V; f = 1 MHz; see Figs 1 and 3	17.5	21	pF
		V_R = 28 V;f = 1 MHz; see Figs 1 and 3	1.7	2.1	pF
$\frac{C_{d(0.5V)}}{C_{d(28V)}}$	capacitance ratio	f = 1 MHz	8.9	12	

Note

1. V_R is the value at which C_d = 9 pF.

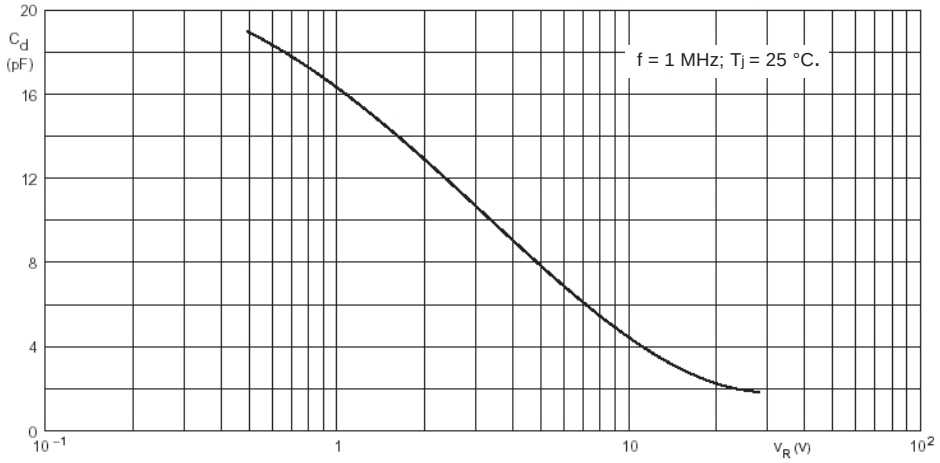


Fig.1 Diode capacitance as a function of reverse voltage; typical values.

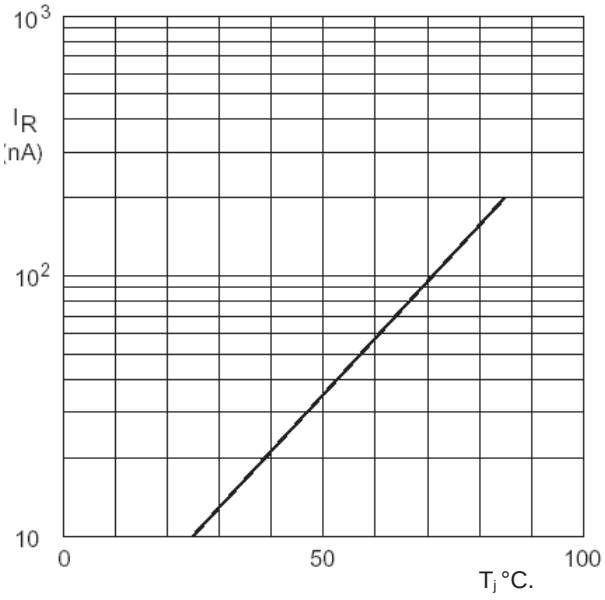


Fig.2 Reverse current as a function of junction temperature; maximum values.

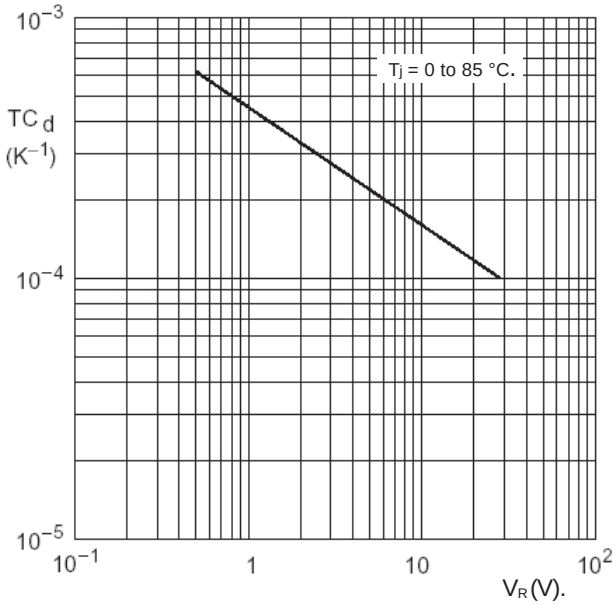


Fig.3 Temperature coefficient of diode capacitance as a function of reverse voltage; typical values.