

UHF Variable Capacitance Diode

BB135

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.



SOD-323

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

$T_j = 25\text{ °C}$ 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 | $f = 470\text{ MHz}$; note 1 | – | 0.75 | Ω |
| C_d | diode capacitance | $V_R = 0.5\text{ V}$; $f = 1\text{ MHz}$; see Figs 1 and 3 | 17.5 | 21 | pF |
| | | $V_R = 28\text{ V}$; $f = 1\text{ MHz}$; see Figs 1 and 3 | 1.7 | 2.1 | pF |
| $\frac{C_d(0.5V)}{C_d(28V)}$ | capacitance ratio | $f = 1\text{ MHz}$ | 8.9 | 12 | |

Note

1. V_R is the value at which $C_d = 9\text{ pF}$.

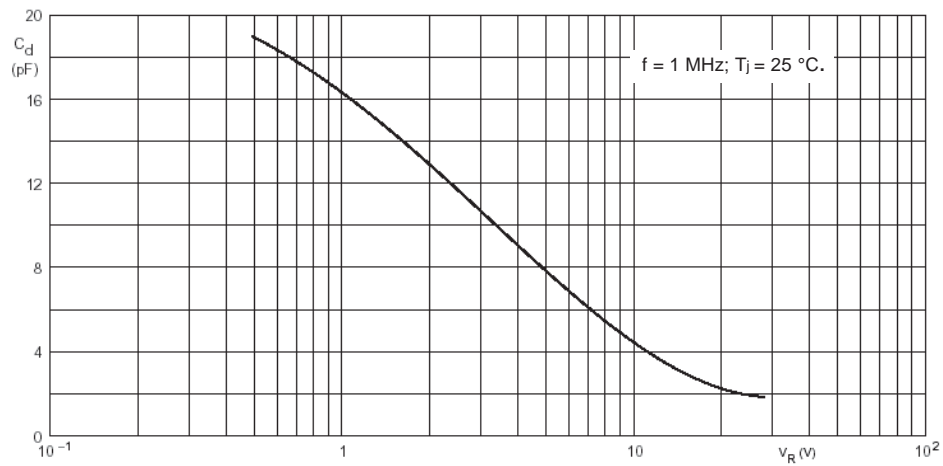
BB135


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

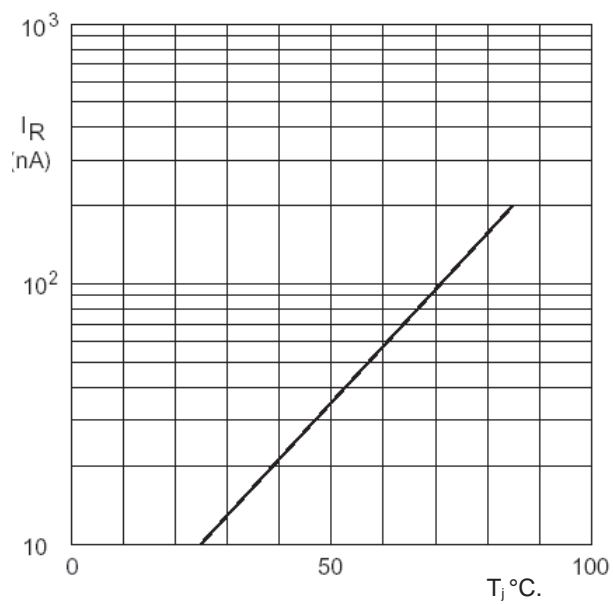


Fig.2 Reverse current as a function of junction temperature; maximum values.

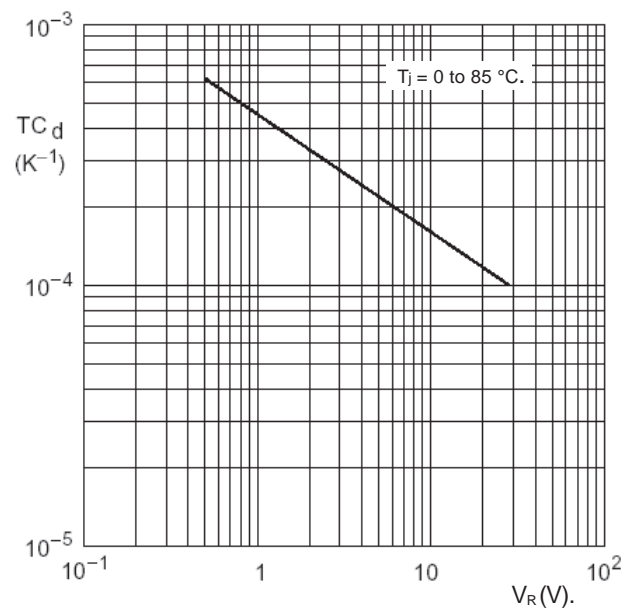


Fig.3 Temperature coefficient of diode capacitance as a function of reverse voltage; typical values.