

Low-voltage variable capacitance diode

FEATURES

- Excellent linearity
- Ultra small plastic SMD package
- C4: 3 pF; ratio: 2.1
- Low series resistance.

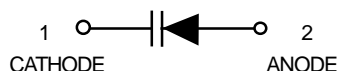
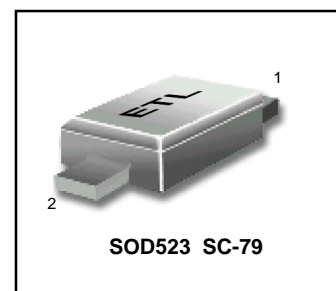
APPLICATIONS

- Voltage controlled oscillators (VCO).

DESCRIPTION

The BB145 is a planar technology variable capacitance diode in a SOD523 (SC-79) package.

BB 145



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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_R	continuous reverse voltage		–	6	V
V_{RM}	peak reverse voltage	in series with a 10 k Ω resistor	–	8	V
I_F	continuous forward current		–	20	mA
T_{stg}	storage temperature		–55	+150	$^{\circ}$ C
T_j	operating junction temperature		–55	+150	$^{\circ}$ C

ELECTRICAL CHARACTERISTICS $T_j=25^{\circ}$ C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_R	reverse current	$V_R = 6$ V; see Fig.2	–	–	10	nA
		$V_R = 6$ V; $T_j = 85^{\circ}$ C; see Fig.2	–	–	200	nA
r_s	diode series resistance	$f = 470$ MHz; $V_R = 1$ V	–	–	0.6	Ω
C_d	diode capacitance	$V_R = 1$ V; $f = 1$ MHz; see Figs 1 and 3	6.4	–	7.4	pF
		$V_R = 4$ V; $f = 1$ MHz; see Figs 1 and 3	2.75	–	3.25	pF
$\frac{C_{d(1V)}}{C_{d(4V)}}$	capacitance ratio	$f = 1$ MHz	2	–	–	

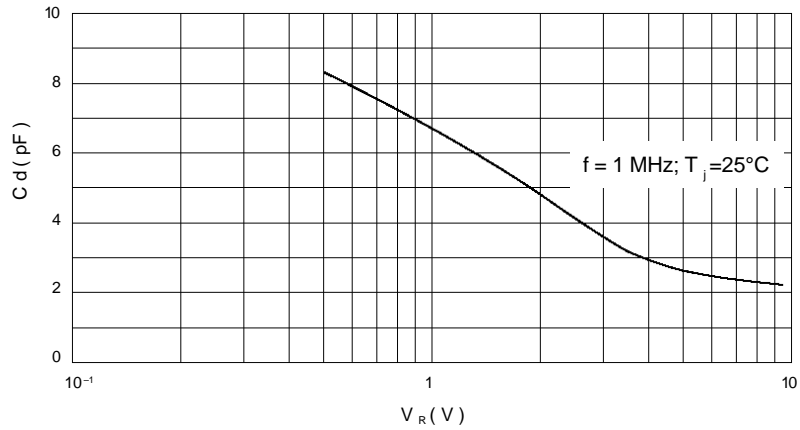


Fig.1 Diode capacitance as a function of reverse voltage; typical values.

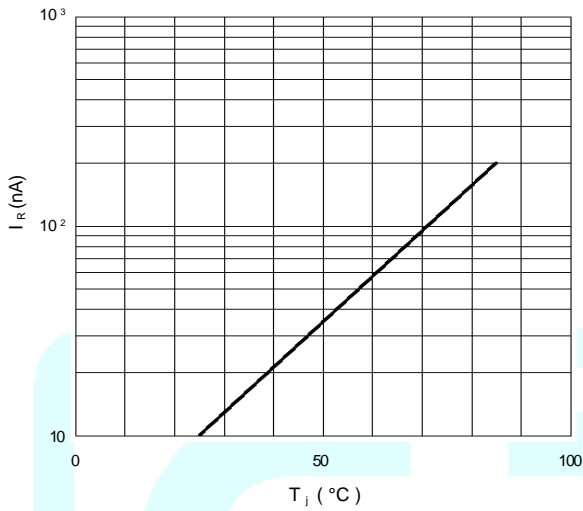


Fig.2 Reverse current as a function of junction temperature; maximum values.

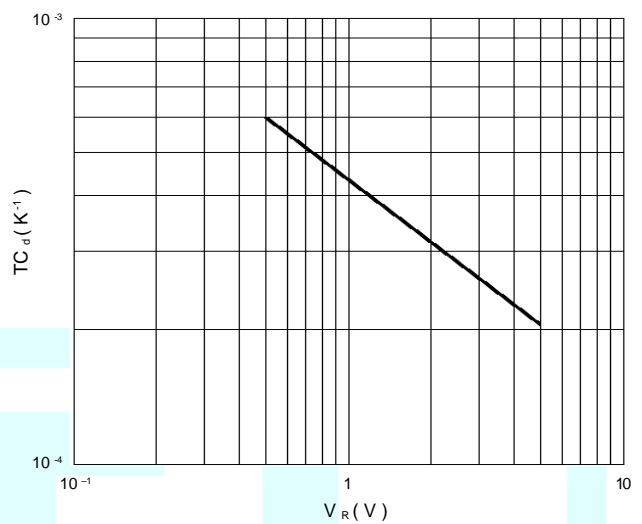


Fig.3 Temperature coefficient of diode capacitance as a function of reverse voltage; typical values.