

Low-voltage variable capacitance diode

FEATURES

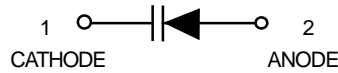
- Excellent linearity
- Ultra small plastic SMD package
- C₄: 2.05 pF; ratio: 2.2
- Low series resistance.

APPLICATIONS

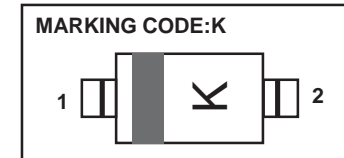
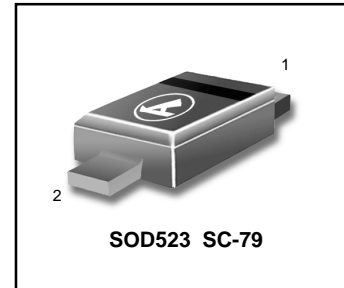
- Voltage controlled oscillators (VCO).

DESCRIPTION

The BB142 is a variable capacitance diode, fabricated in planar technology, and encapsulated in the SOD523 (SC-79) ultra small plastic SMD package.



BB 142



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 kΩ resistor	–	8	V
I _F	continuous forward current		–	20	mA
T _{stg}	storage temperature		–55	+150	°C
T _j	operating junction temperature		–55	+150	°C

ELECTRICAL CHARACTERISTICS T_j=25°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°C; see Fig.2	–	–	200	nA
r _s	diode series resistance	f = 470 MHz; V _R = 1 V	–	0.5	–	Ω
C _d	diode capacitance	V _R = 1 V; f = 1 MHz; see Figs 1 and 3	4	4.6	4.9	pF
		V _R = 4 V; f = 1 MHz; see Figs 1 and 3	1.85	2.05	2.35	pF
C _{d(1V)} C _{d(4V)}	capacitance ratio	f = 1 MHz	2	2.2	–	

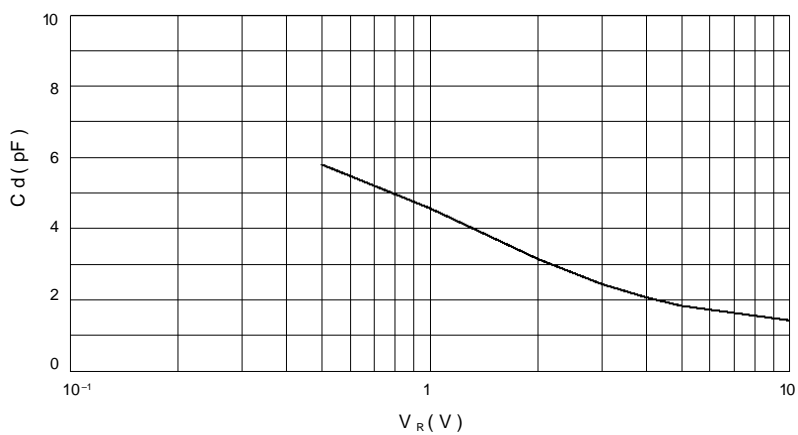
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Fig.1 Diode capacitance as a function of reverse voltage; typical values.

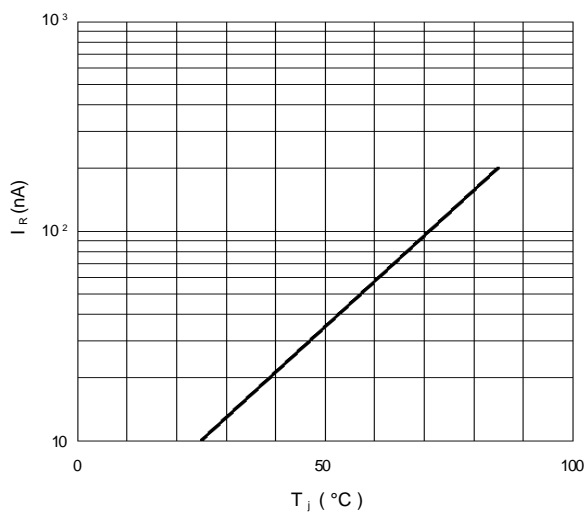


Fig.2 Reverse current as a function of junction temperature; maximum values.

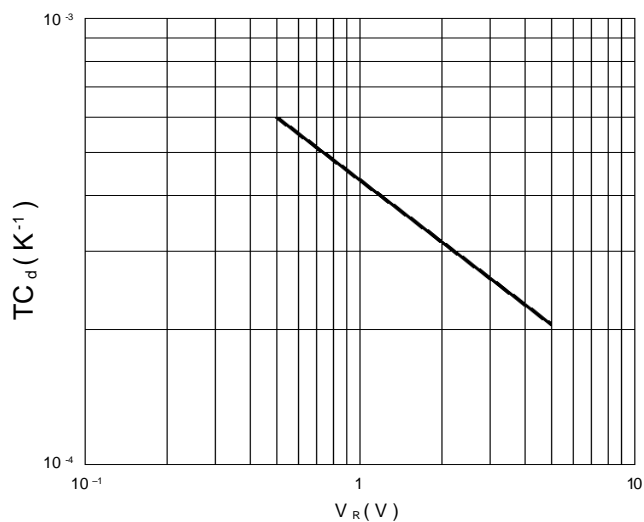


Fig.3 Temperature coefficient of diode capacitance as a function of reverse voltage; typical values.