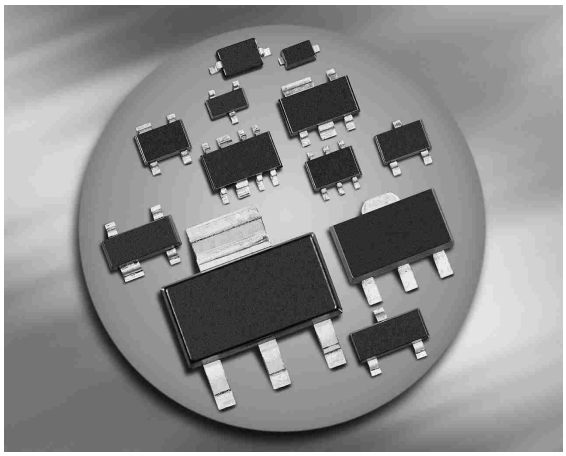
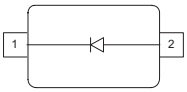
Silicon Variable Capacitance Diodes

- For VHF TV-tuners
- High capacitance ratio
- Low series inductance
- Low series resistance
- Excellent uniformity and matching due to "in-line" matching assembly procedure



BB644
BB664/-02V



Type	Package	Configuration	L_S(nH)	Marking
BB644	SOD323	single	1.8	yellow 4
BB664	SCD80	single	0.6	44
BB664-02V	SC79	single	0.6	4

Maximum Ratings at T_A = 25°C, unless otherwise specified

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	30	V
Peak reverse voltage $R \geq 5k\Omega$	V_{RM}	35	
Forward current	I_F	20	mA
Operating temperature range	T_{op}	-55 ... 150	°C
Storage temperature	T_{stg}	-55 ... 150	

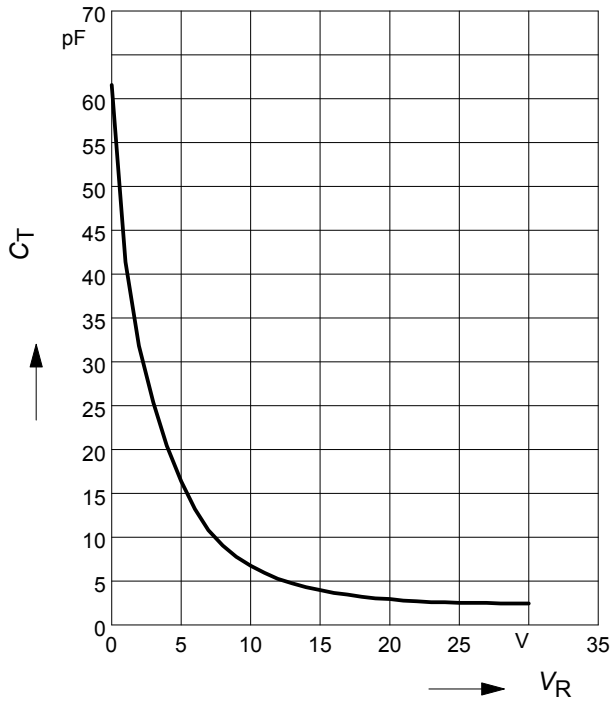
Electrical Characteristics at T_A = 25°C, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Reverse current	I_R				nA
V_R = 30 V		-	-	10	
V_R = 30 V, T_A = 85 °C		-	-	100	
AC Characteristics					
Diode capacitance	C_T				pF
V_R = 1 V, f = 1 MHz		39	41.8	44.5	
V_R = 2 V, f = 1 MHz		29.4	31.85	34.2	
V_R = 25 V, f = 1 MHz		2.5	2.7	2.85	
V_R = 28 V, f = 1 MHz		2.4	2.55	2.75	
Capacitance ratio V_R = 1 V, V_R = 28 V, f = 1 MHz	C_{T1}/C_{T28}	15	16.4	17.8	
Capacitance ratio V_R = 1 V, V_R = 25 V, f = 1 MHz	C_{T2}/C_{T25}	11	11.8	12.6	
Capacitance matching[1)] V_R = 1 V, V_R = 28 V, f = 1 MHz	$\Delta C_T/C_T$	-	-	2	%
Series resistance V_R = 5 V, f = 470 MHz	r_S	-	0.6	0.75	Ω

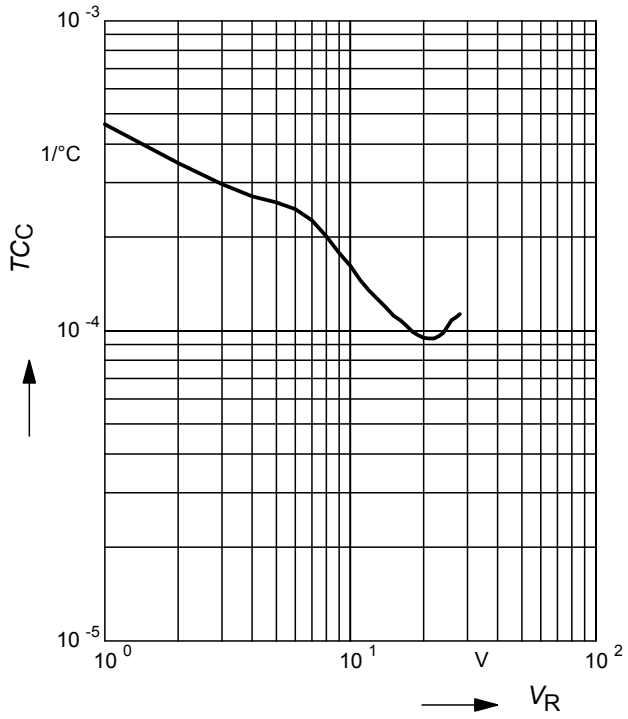
[1]For details please refer to Application Note 047.

Diode capacitance $C_T = f(V_R)$

f = 1MHz

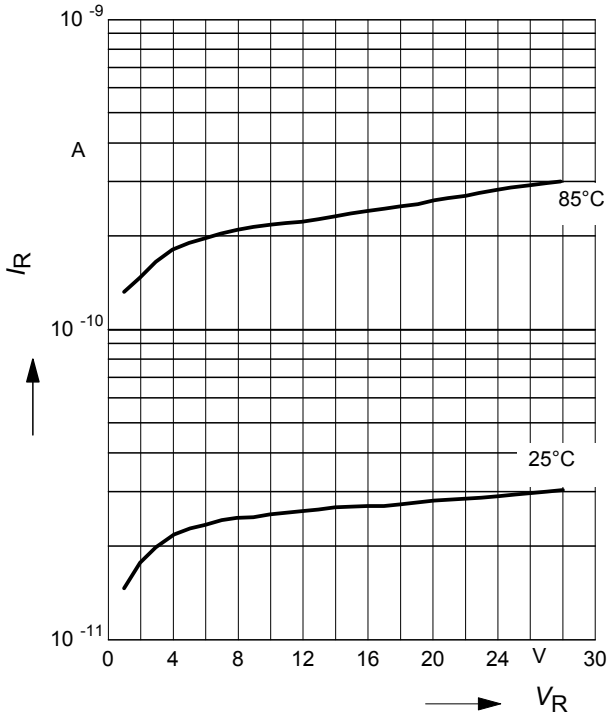


Temperature coefficient of the diode capacitance $T_{Cc} = f(V_R)$



Reverse current $I_R = f(V_R)$

T_A = Parameter



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