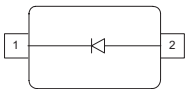


**Silicon Tuning Diode**

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


**BB535  
BB555/-02V**


Type	Package	Configuration	$L_S$ (nH)	Marking
BB535	SOD323	single	1.8	white S
BB555	SCD80	single	0.6	BB
BB555-02V	SC79	single	0.6	B

**Maximum Ratings at  $T_A = 25^\circ\text{C}$ , unless otherwise specified**

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

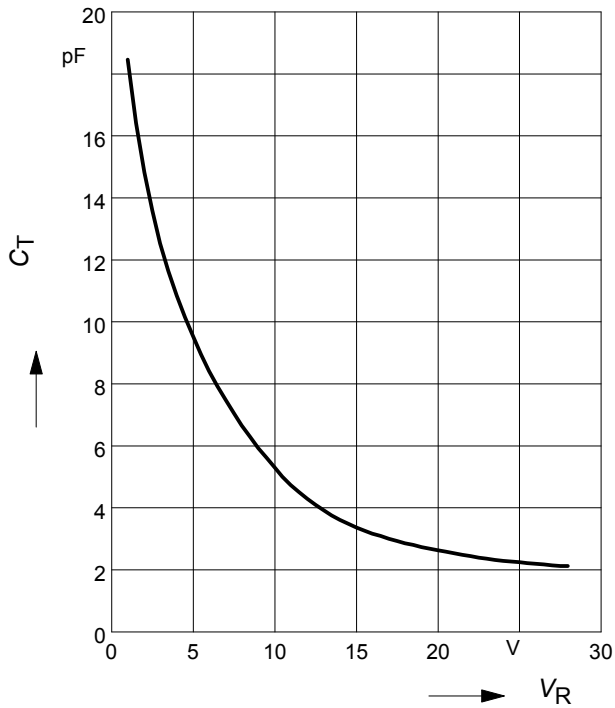
**Electrical Characteristics at  $T_A = 25^\circ\text{C}$ , unless otherwise specified**

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC Characteristics</b>					
Reverse current $V_R = 30\text{ V}$ $V_R = 30\text{ V}, T_A = 85^\circ\text{C}$	$I_R$	- -	- -	10 200	nA
<b>Electrical Characteristics</b>					
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>AC Characteristics</b>					
Diode capacitance $V_R = 1\text{ V}, f = 1\text{ MHz}$ $V_R = 2\text{ V}, f = 1\text{ MHz}$ $V_R = 25\text{ V}, f = 1\text{ MHz}$ $V_R = 28\text{ V}, f = 1\text{ MHz}$	$C_T$	17.5 14.01 2.05 1.9	18.7 15 2.24 2.1	20 16.1 2.4 2.3	pF
Capacitance ratio $V_R = 1\text{ V}, V_R = 28\text{ V}, f = 1\text{ MHz}$	$C_{T1}/C_{T28}$	8.2	8.9	9.8	-
Capacitance ratio $V_R = 2\text{ V}, V_R = 25\text{ V}, f = 1\text{ MHz}$	$C_{T2}/C_{T25}$	6	6.7	7.5	-
Capacitance matching <sup>1)</sup> $V_R = 1\text{ V to } 28\text{ V}, f = 1\text{ MHz}, 7\text{ diodes sequence},$ BB535 $V_R = 1\text{ V to } 28\text{ V}, f = 1\text{ MHz}, 4\text{ diodes sequence},$ BB555/-02V $V_R = 1\text{ V to } 28\text{ V}, f = 1\text{ MHz}, 7\text{ diodes sequence},$ BB555/-02V	$\Delta C_T/C_T$	- - -	- 0.15 0.25	2.5 1 2	%
Series resistance $V_R = 3\text{ V}, f = 470\text{ MHz}$	$r_S$	-	0.58	0.75	$\Omega$

<sup>1</sup>For details please refer to Application Note 047

**Diode capacitance  $C_T = f(V_R)$**

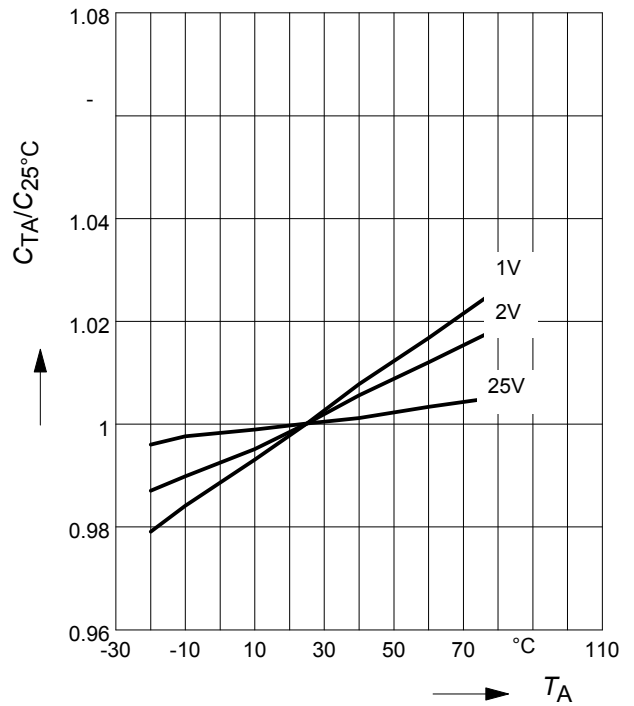
$f = 1\text{MHz}$



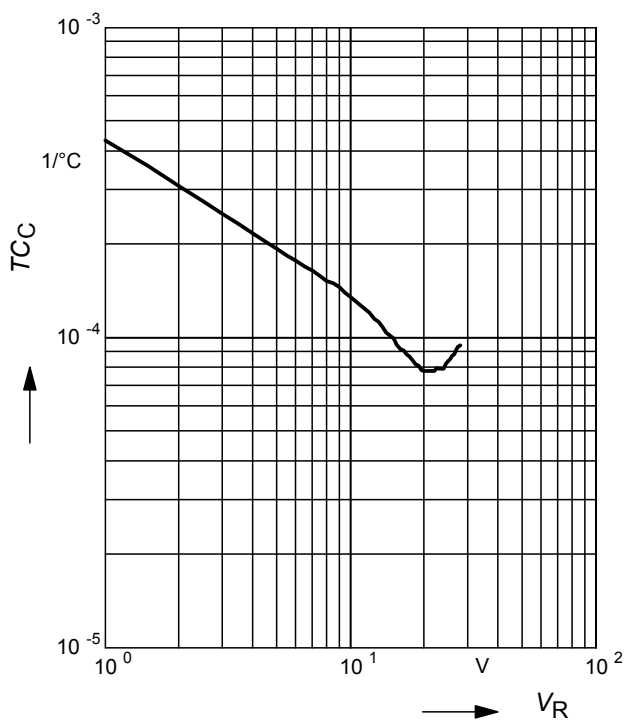
**Normalized diode capacitance**

$C_{(T_A)}/C_{(25^\circ\text{C})} = f(T_A); f = 1\text{MHz}$

$V_R = \text{Parameter}$

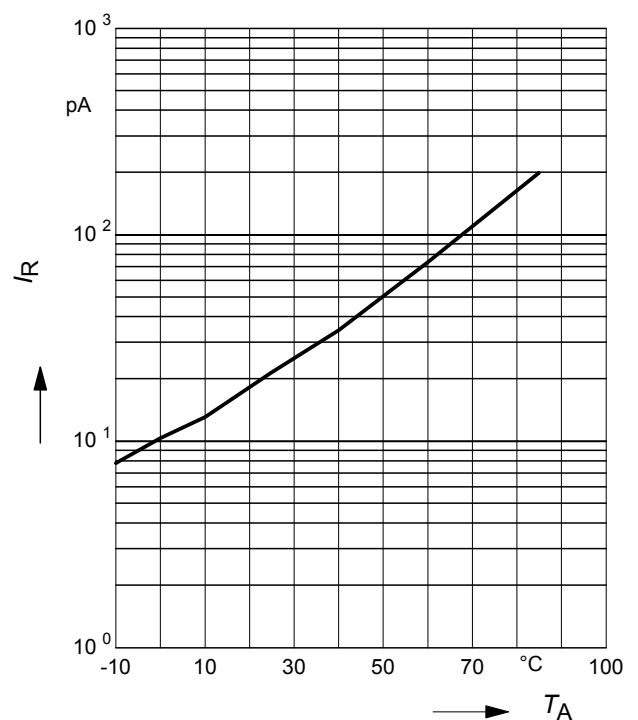


**Temperature coefficient of the diode capacitance  $T_{CC} = f(V_R)$**



**Reverse current  $I_R = f(T_A)$**

$V_R = 28\text{V}$



**Reverse current  $I_R = f(V_R)$**

$T_A =$  Parameter

