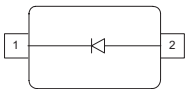


Silicon Tuning Diode

- 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.	

DC Characteristics

Reverse current	I_R				nA
$V_R = 30\text{ V}$		-	-	10	
$V_R = 30\text{ V}, T_A = 85^\circ\text{C}$		-	-	200	

Electrical Characteristics

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

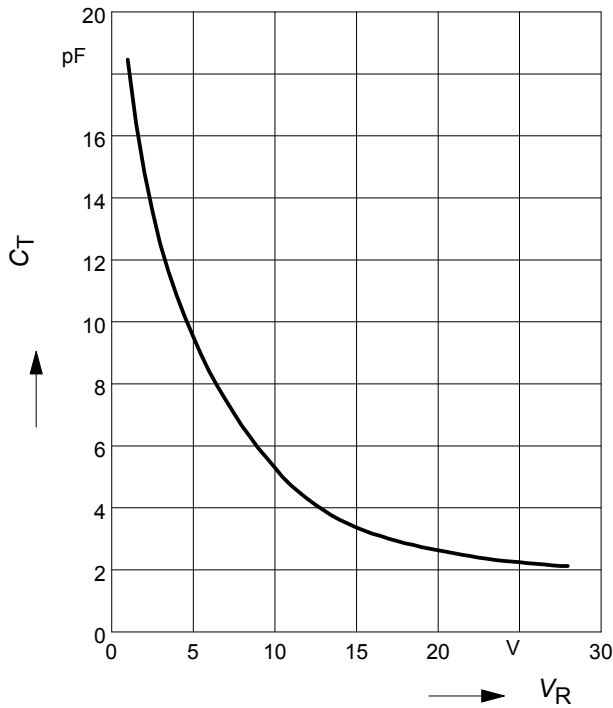
AC Characteristics

Diode capacitance	C_T				pF
$V_R = 1\text{ V}, f = 1\text{ MHz}$		17.5	18.7	20	
$V_R = 2\text{ V}, f = 1\text{ MHz}$		14.01	15	16.1	
$V_R = 25\text{ V}, f = 1\text{ MHz}$		2.05	2.24	2.4	
$V_R = 28\text{ V}, f = 1\text{ MHz}$		1.9	2.1	2.3	
Capacitance ratio	C_{T1}/C_{T28}	8.2	8.9	9.8	-
$V_R = 1\text{ V}, V_R = 28\text{ V}, f = 1\text{ MHz}$					
Capacitance ratio	C_{T2}/C_{T25}	6	6.7	7.5	
$V_R = 2\text{ V}, V_R = 25\text{ V}, f = 1\text{ MHz}$					
Capacitance matching ¹⁾	$\Delta C_T/C_T$				%
$V_R = 1\text{ V to } 28\text{ V}, f = 1\text{ MHz}, 7\text{ diodes sequence},$ BB535		-	-	2.5	
$V_R = 1\text{ V to } 28\text{ V}, f = 1\text{ MHz}, 4\text{ diodes sequence},$ BB555/-02V		-	0.15	1	
$V_R = 1\text{ V to } 28\text{ V}, f = 1\text{ MHz}, 7\text{ diodes sequence},$ BB555/-02V		-	0.25	2	
Series resistance	r_S	-	0.58	0.75	Ω
$V_R = 3\text{ V}, f = 470\text{ MHz}$					

¹For details please refer to Application Note 047

Diode capacitance $C_T = f(V_R)$

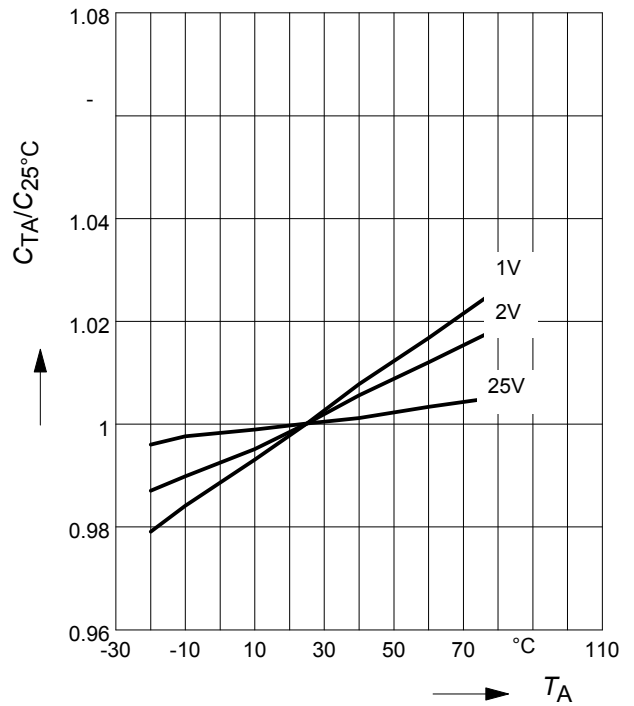
$f = 1\text{MHz}$



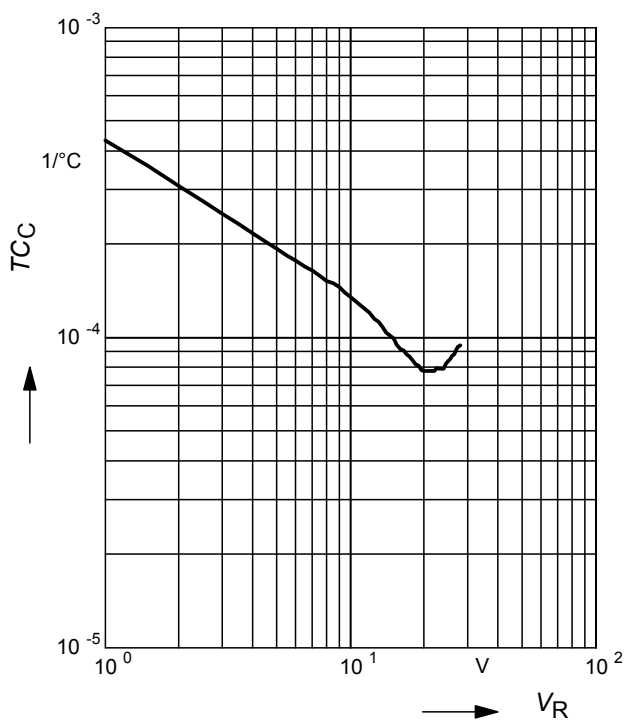
Normalized diode capacitance

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

$V_R = \text{Parameter}$

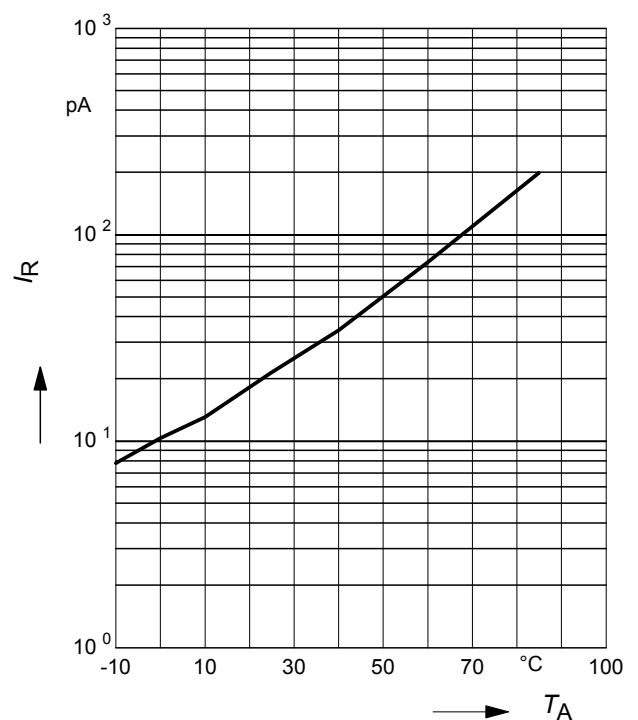


Temperature coefficient of the diode capacitance $T_{CC} = f(V_R)$



Reverse current $I_R = f(T_A)$

$V_R = 28\text{V}$



Reverse current $I_R = f(V_R)$

T_A = Parameter

