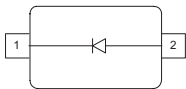


Silicon Tuning Diode

- 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	

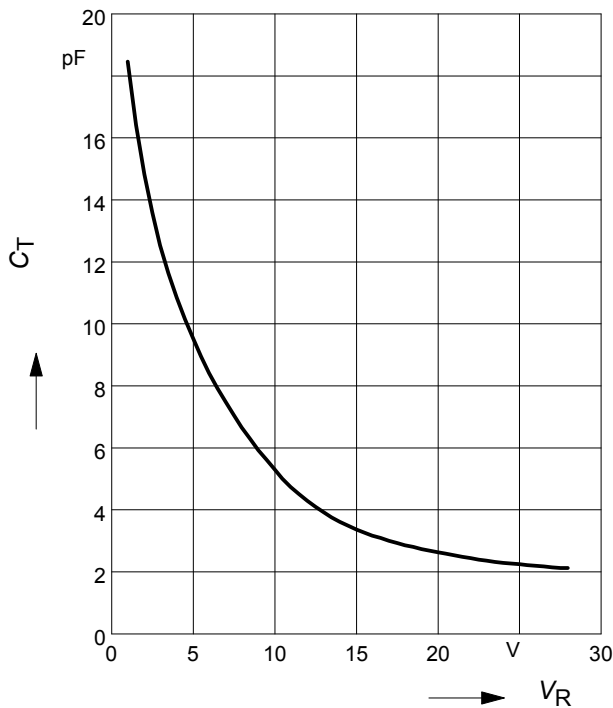
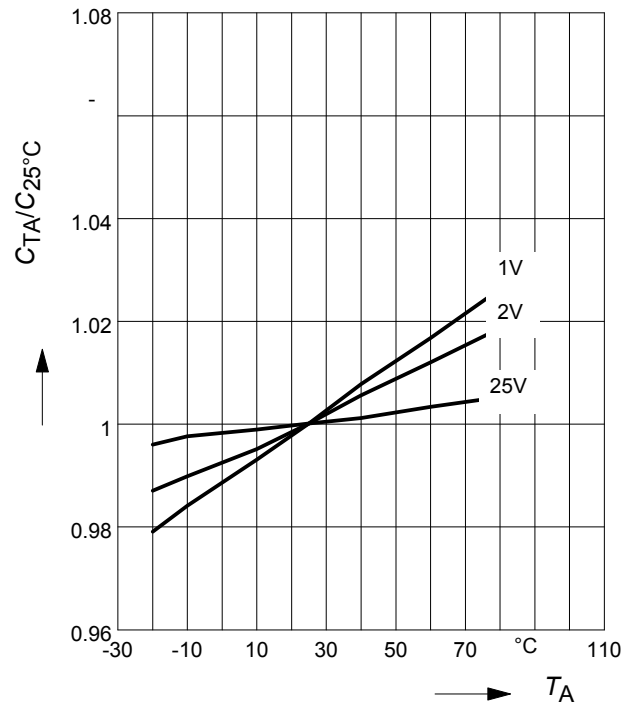
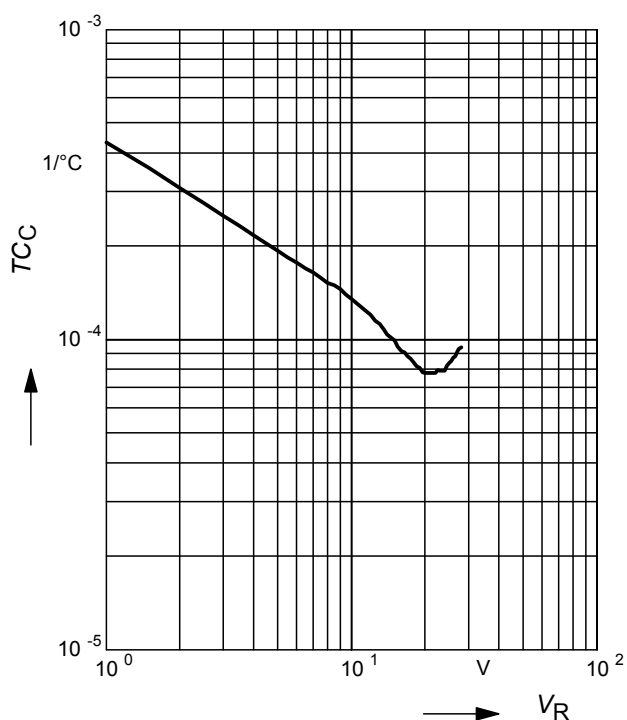
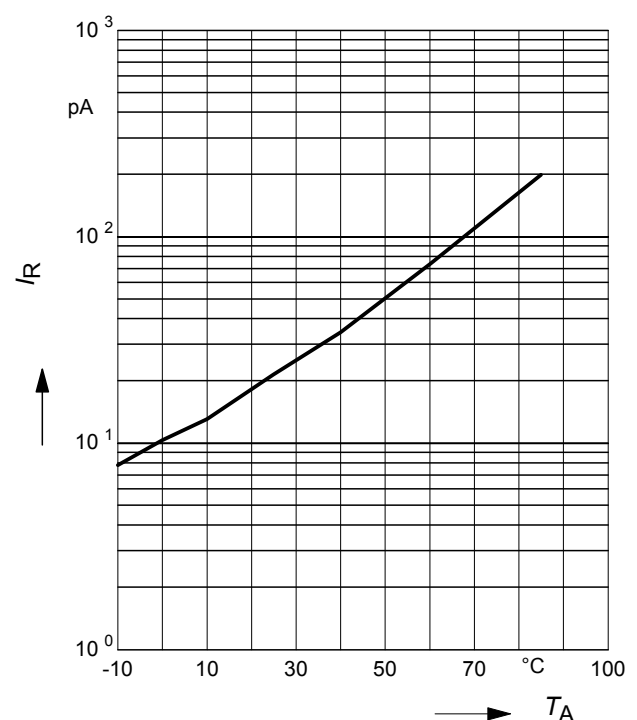
Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Reverse current	I_R				nA
$V_R = 30\text{ V}$		-	-	10	
$V_R = 30\text{ V}, T_A = 85\text{ }^{\circ}\text{C}$		-	-	200	

Electrical Characteristics

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
AC Characteristics					
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 ¹⁾ $V_R = 1\text{V to } 28\text{V}, f = 1\text{ MHz}, \mathbf{7}$ diodes sequence, BB535 $V_R = 1\text{V to } 28\text{V}, f = 1\text{ MHz}, \mathbf{4}$ diodes sequence, BB555/-02V $V_R = 1\text{V to } 28\text{V}, f = 1\text{ MHz}, \mathbf{7}$ 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	Ω

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

