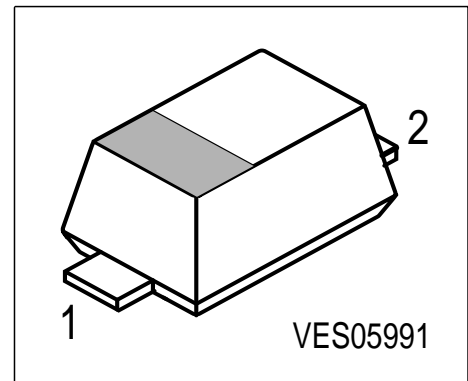


Silicon Tuning Diode

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



Type	Marking	Ordering Code	Pin Configuration	Package
BB 555	B	Q62702-B0864 unmatched	1 = C	SCD-80
BB 555	B	Q62702-B0853 inline matched	2 = A	

Maximum Ratings

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	

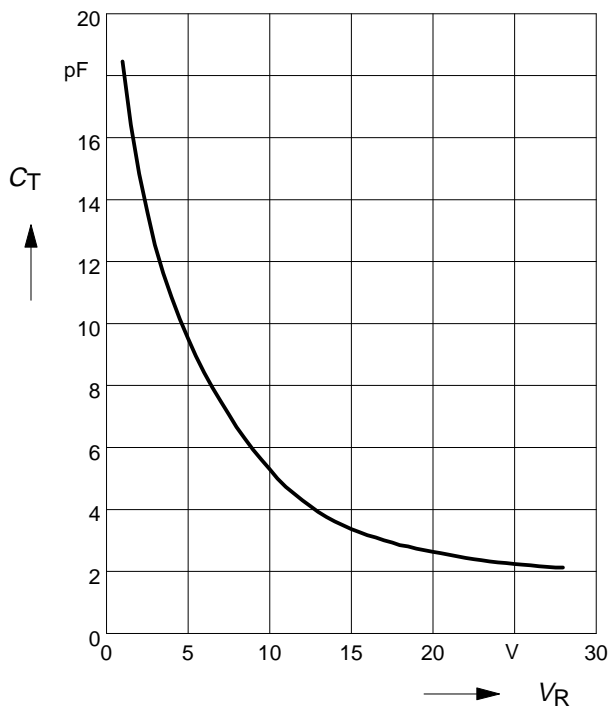
Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC characteristics					
Reverse current $V_R = 30\text{ V}$	I_R	-	-	10	nA
Reverse current $V_R = 30\text{ V}, T_A = 85^\circ\text{C}$	I_R	-	-	200	
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 14.1 2.05 1.9	18.7 15 2.24 2.1	20 16.1 2.4 2.3	pF
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 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 matching ¹⁾ $V_R = 1\text{V to } 28\text{V}, f = 1\text{ MHz}, 4\text{ diodes sequence}$ $V_R = 1\text{V to } 28\text{V}, f = 1\text{ MHz}, 7\text{ diodes sequence}$	$\Delta C_T/C_T$	- -	0.15 0.25	1 2	
Series resistance $V_R = 3\text{ V}, f = 470\text{ MHz}$	r_s	-	0.58	-	Ω
Series inductance	L_s	-	0.6	-	nH

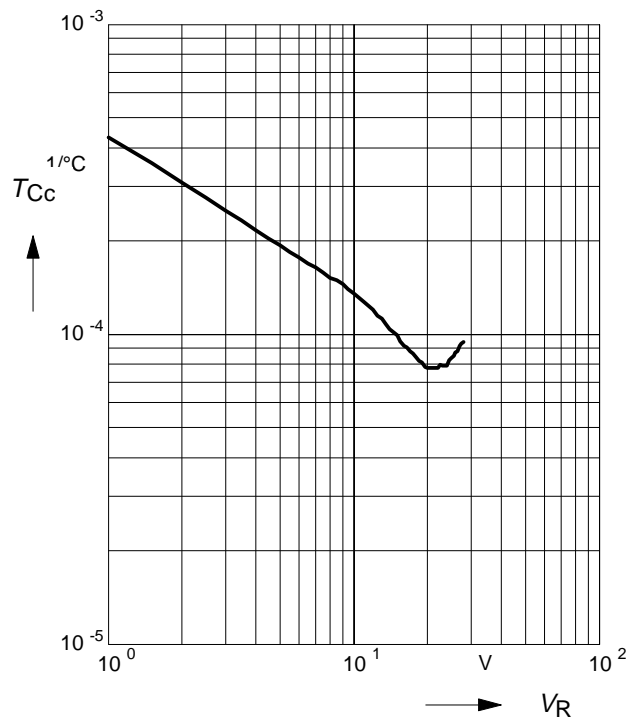
1) In-line matching. For details please refer to Application Note 047

Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$

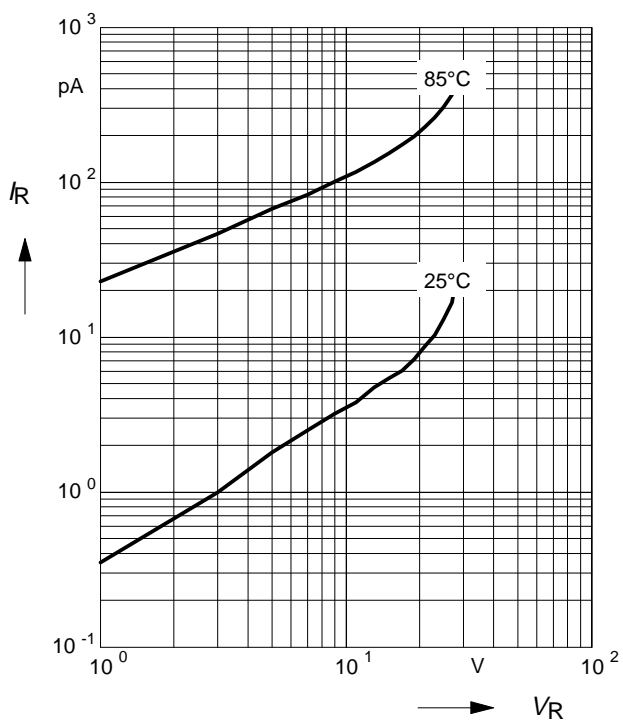


Temperature coefficient of the diode capacitance $T_{Cc} = f(V_R)$



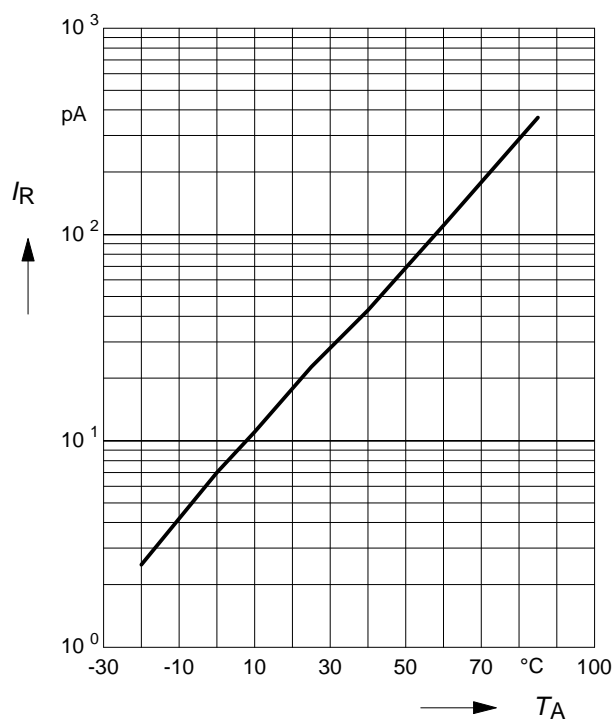
Reverse current $I_R = f(V_R)$

$T_A = \text{Parameter}$



Reverse current $I_R = f(T_A)$

$V_R = 28\text{V}$



Normalized diode capacitance

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

$f = 1\text{MHz}$, $V_R = \text{Parameter}$

