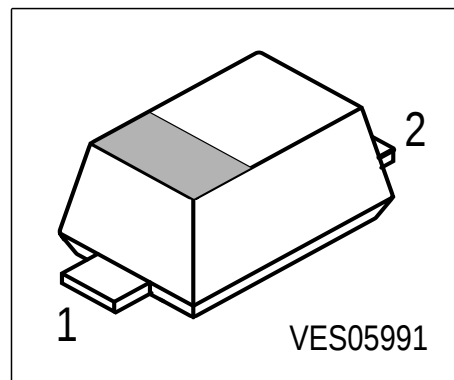


Silicon Tuning Diode

- For VHF-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 659	D	Q62702-B0875 unmatched	1 = C	2 = A	SCD-80
BB 659	D	Q62702-B0854 inline matched			

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	

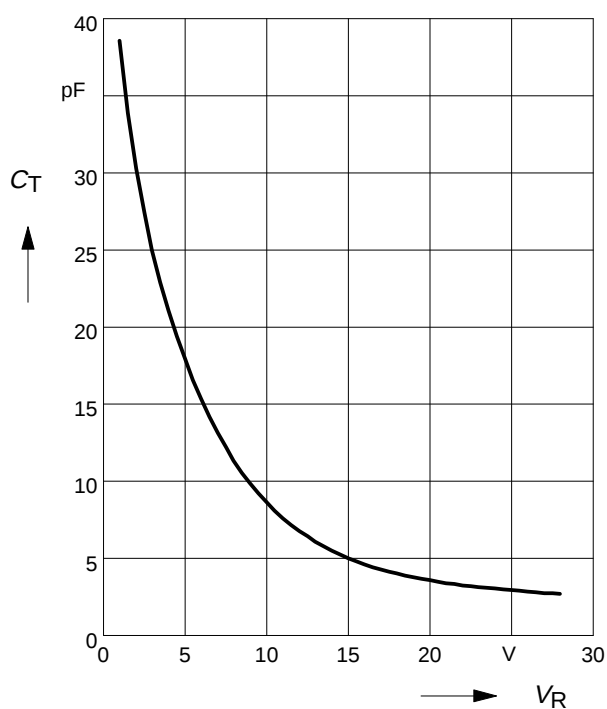
Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC characteristics					
Reverse current $V_R = 30\text{ V}$	I_R	-	-	10	nA
Reverse current $V_R = 30\text{ V}$, $T_A = 85\text{ }^{\circ}\text{C}$	I_R	-	-	100	
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	36 27.5 2.5 2.4	38.3 30.1 2.89 2.6	40 32 3.2 2.9	pF
Capacitance ratio $V_R = 2\text{ V}$, $V_R = 25\text{ V}$, $f = 1\text{ MHz}$	C_{T2}/C_{T25}	9.8	10.4	-	
Capacitance ratio $V_R = 1\text{ V}$, $V_R = 28\text{ V}$, $f = 1\text{ MHz}$	C_{T1}/C_{T28}	13.5	14.7	-	
Capacitance matching ¹⁾ $V_R = 1\text{V to } 28\text{V}$, $f = 1\text{ MHz}$, 4 diodes sequence $V_R = 1\text{V to } 28\text{V}$, $f = 1\text{ MHz}$, 7 diodes sequence	$\Delta C_T/C_T$	- -	0.3 0.4	1 2	%
Series resistance $V_R = 5\text{ V}$, $f = 470\text{ MHz}$	r_s	-	0.65	0.7	Ω
Series inductance	L_s	-	0.6	-	nH

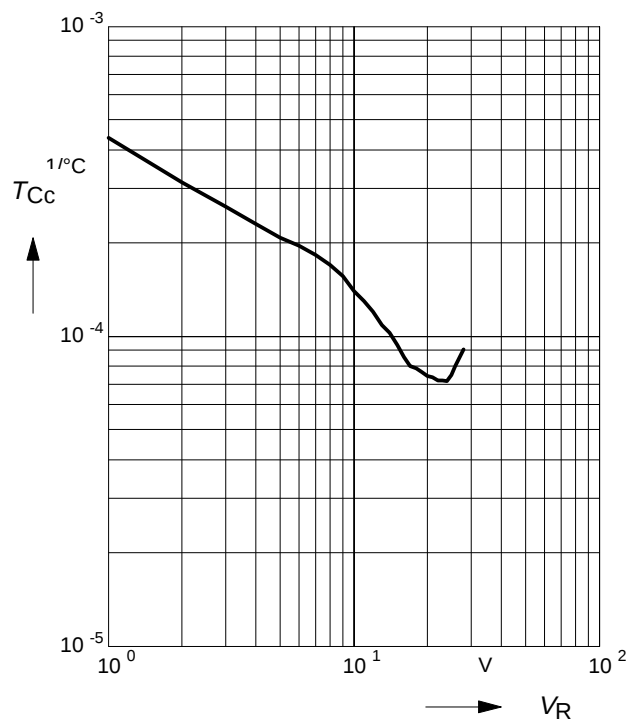
1) In-line matching. For details please refer to Application Note 047

Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$

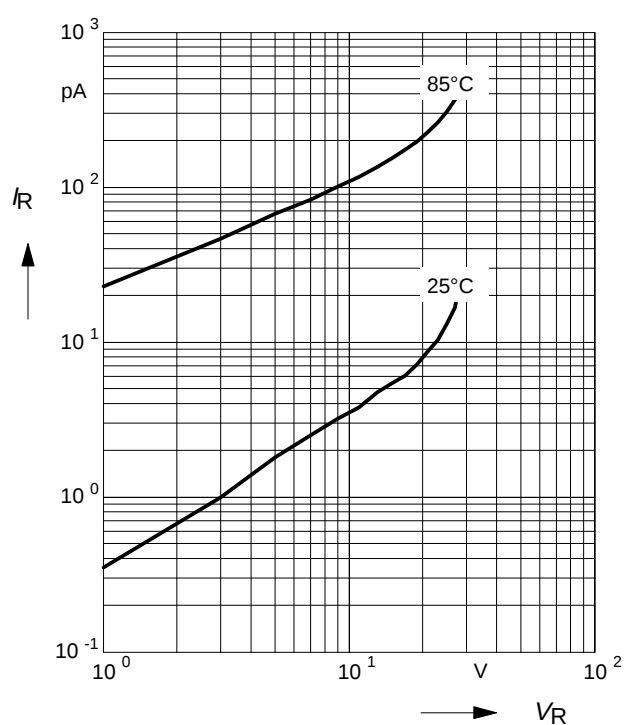


Temperature coefficient of the diode capacitance $T_{Cc} = f(V_R)$



Reverse current $I_R = f(V_R)$

$T_A = \text{Parameter}$



Reverse current $I_R = f(T_A)$

$V_R = 28\text{V}$

