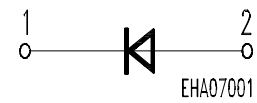
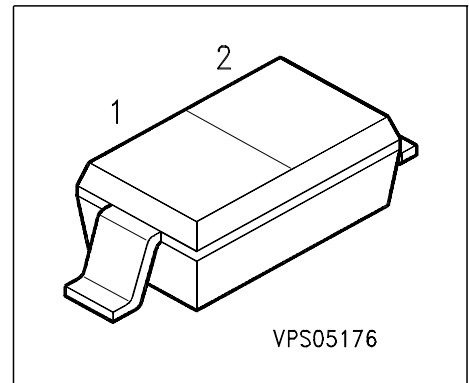


### Silicon Variable Capacitance Diode

- For tuning of extended frequency band in VHF TV / VTR tuners



Type	Marking	Ordering Code	Pin Configuration		Package
BB 639C	yellow S	Q62702-B695	1 = C	2 = A	SOD-323

### 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 ...+125	°C
Storage temperature	$T_{stg}$	-55 ...+150	

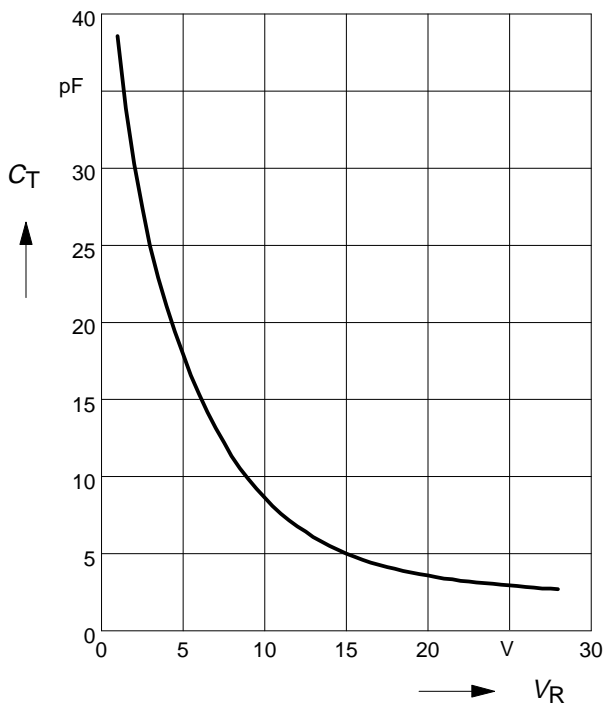
**Electrical Characteristics** at  $T_A = 25^\circ\text{C}$ , unless otherwise specified.

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC characteristics</b>					
Reverse current $V_R = 30\text{ V}$	$I_R$	-	-	10	nA
Reverse current $V_R = 30\text{ V}, T_A = 85^\circ\text{C}$	$I_R$	-	-	200	
<b>AC characteristics</b>					
Diode capacitance $V_R = 1\text{ V}, f = 1\text{ MHz}$ $V_R = 2\text{ V}, f = 1\text{ MHz}$ $V_R = 25\text{ V}, f = 1\text{ MHz}$ $V_R = 28\text{ V}, f = 1\text{ MHz}$	$C_T$	36 27 2.5 2.4	39 30.2 2.72 2.55	42 33.2 3.05 2.8	pF
Capacitance ratio $V_R = 2\text{ V}, V_R = 25\text{ V}, f = 1\text{ MHz}$	$C_{T2}/C_{T25}$	9.5	11.1	-	-
Capacitance ratio $V_R = 1\text{ V}, V_R = 28\text{ V}, f = 1\text{ MHz}$	$C_{T1}/C_{T28}$	13.5	15.3	-	
Capacitance matching $V_R = 1\text{ V}, V_R = 28\text{ V}, f = 1\text{ MHz}$	$\Delta C_T/C_T$	-	-	2.5	%
Series resistance $V_R = 5\text{ V}, f = 470\text{ MHz}$	$r_s$	-	0.6	0.75	$\Omega$
Series inductance	$L_s$	-	1.8	-	nH

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

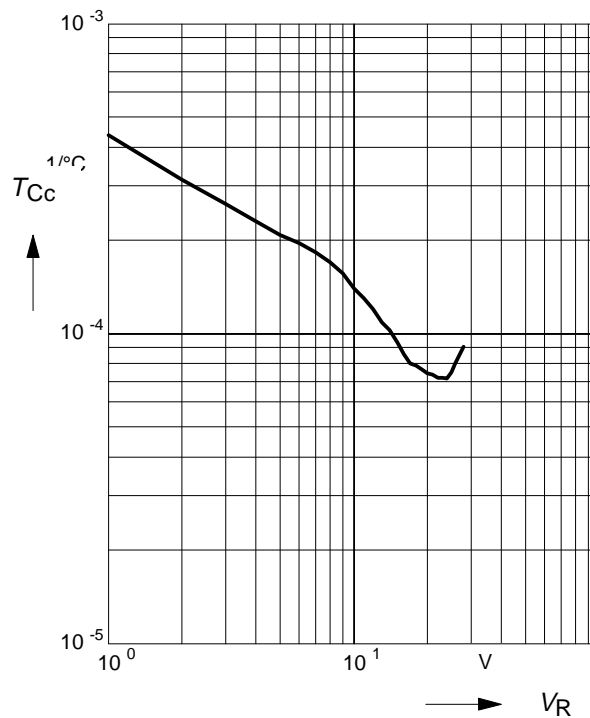
### Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$



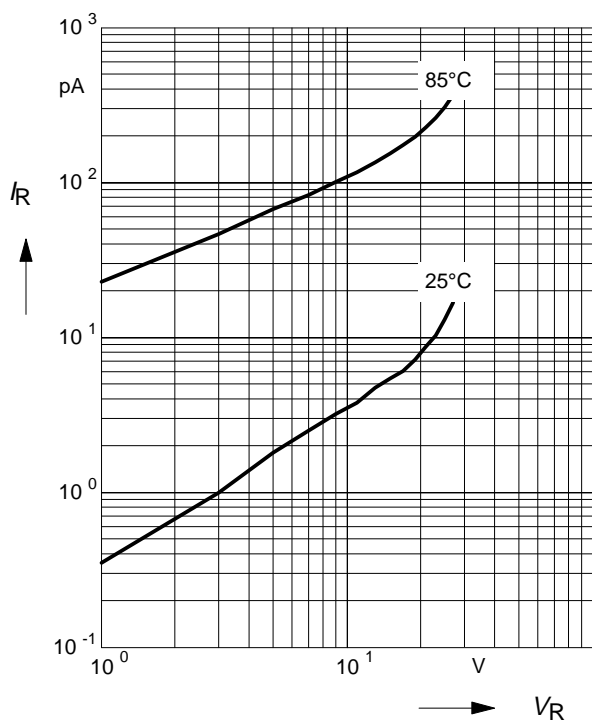
### Temperature coefficient of the diode capacitance $T_{CC} = f(V_R)$

$T_{CC} = f(V_R)$



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

$T_A = \text{Parameter}$



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

$V_R = 28\text{V}$

