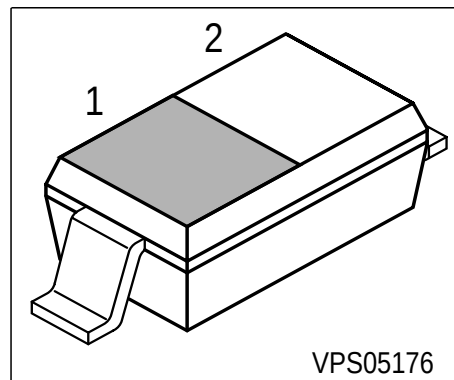


Silicon Variable Capacitance Diode

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



Type	Marking	Pin Configuration		Package
BB639	yellow S	1 = C	2 = A	SOD323

Maximum Ratings

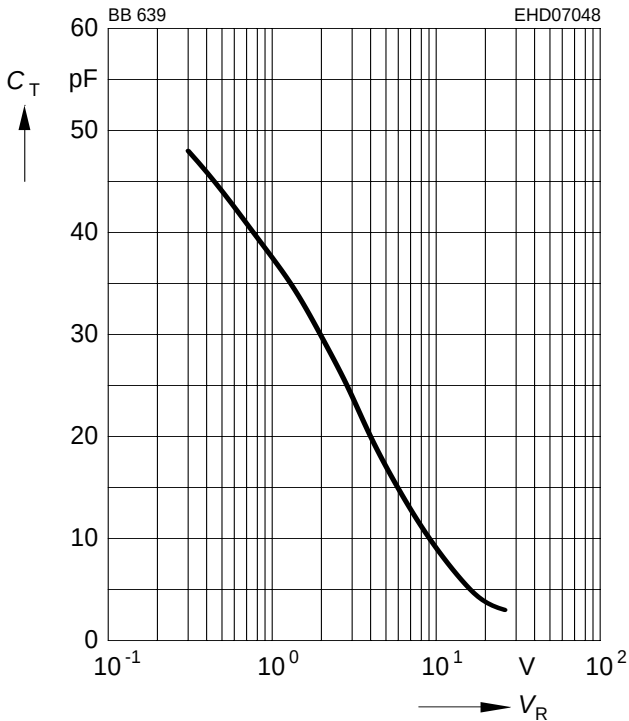
Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	30	V
Peak reverse voltage ($R \geq 5k\Omega$)	V_{RM}	35	
Forward current	I_F	20	mA
Operating temperature range	T_{op}	-55 ... 150	°C
Storage temperature	T_{stg}	-55 ... 150	

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	-	-	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	36 27.7 2.5 2.4	38.3 29.75 2.85 2.6	40 31.8 3.2 2.9	pF
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 ratio $V_R = 2\text{ V}, V_R = 25\text{ V}, f = 1\text{ MHz}$	C_{T2}/C_{T25}	9.8	10.4	-	
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 $C_T = 12\text{ pF}, f = 100\text{ MHz}$	r_s	-	0.65	-	Ω
Series inductance	L_s	-	1.8	-	nH

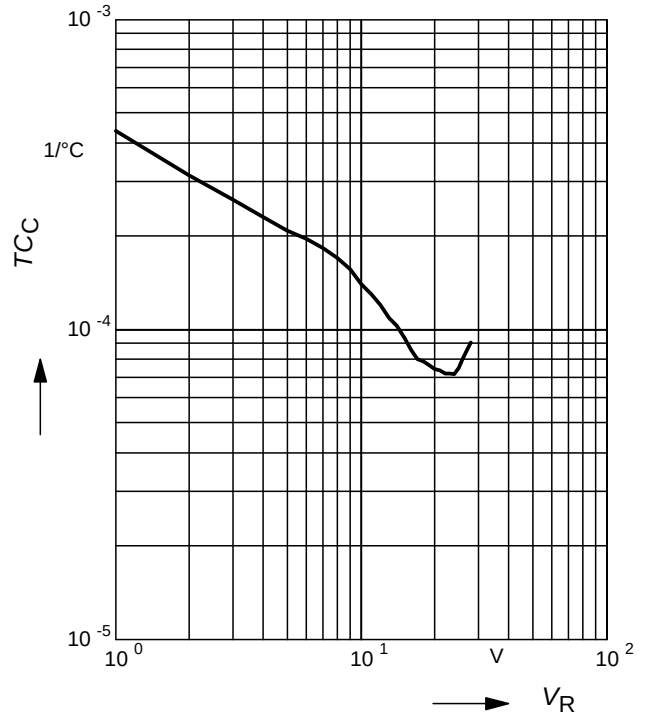
Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$



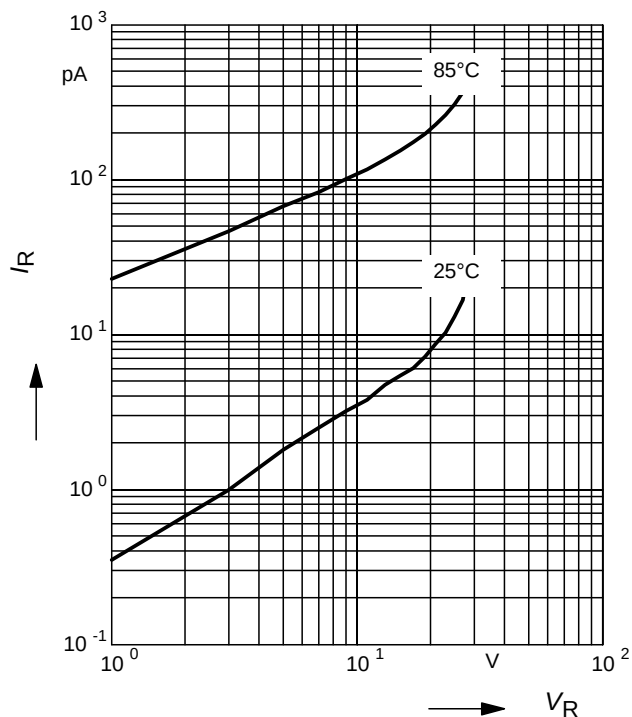
Temperature coefficient of the diode

capacitance $T_{CC} = f(V_R)$



Reverse current $I_R = f(V_R)$

$T_A = 25\text{ °C}$



Reverse current $I_R = f(T_A)$

$V_R = 8\text{V}$

