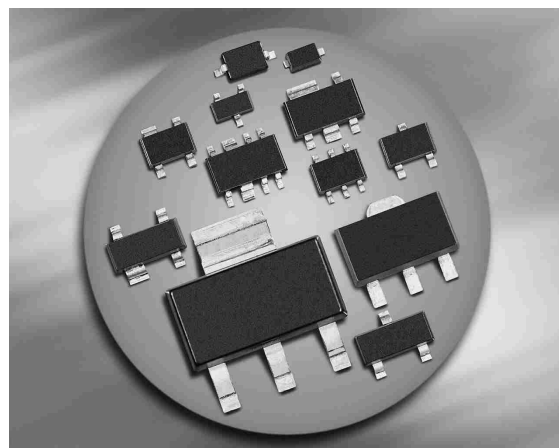
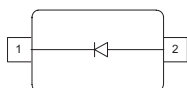


Silicon Variable Capacitance Diode

- For Hyperband TV / VTR tuners, Bd I



BB640



Type	Package	Configuration	L_S (nH)	Marking
BB640	SOD323	single	1.8	red S

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	

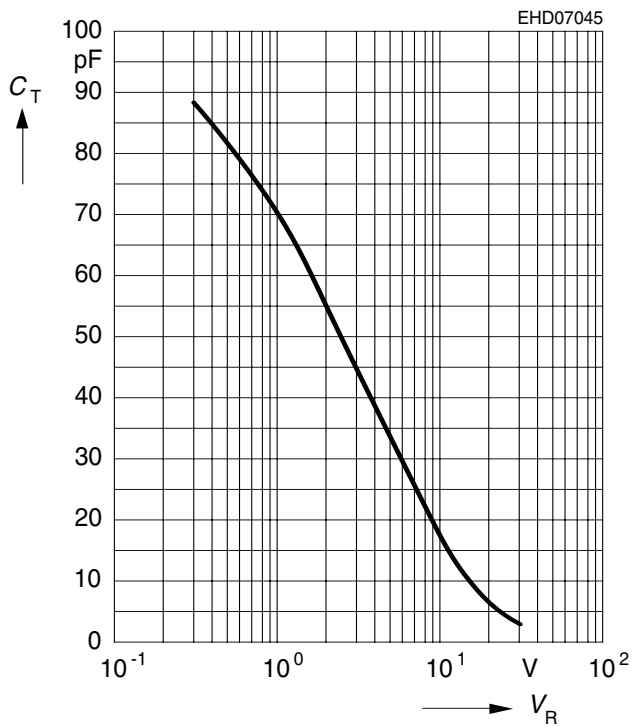
Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

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	
AC Characteristics					
Diode capacitance	C_T				pF
$V_R = 1\text{ V}, f = 1\text{ MHz}$		62	69	76	
$V_R = 2\text{ V}, f = 1\text{ MHz}$		47.5	54.5	61.5	
$V_R = 25\text{ V}, f = 1\text{ MHz}$		2.85	3.28	3.7	
$V_R = 28\text{ V}, f = 1\text{ MHz}$		2.8	3.05	3.3	
Capacitance ratio	C_{T1}/C_{T28}	19.5	-	25	
$V_R = 1\text{ V}, V_R = 28\text{ V}, f = 1\text{ MHz}$					
Capacitance ratio	C_{T2}/C_{T25}	15	16.6	-	
$V_R = 2\text{ V}, V_R = 25\text{ V}, f = 1\text{ MHz}$					
Capacitance matching ¹⁾	$\Delta C_T/C_T$	-	-	2.5	
$V_R = 1\text{ V}, V_R = 28\text{ V}, f = 1\text{ MHz}$					
Series resistance	r_S	-	1.15	-	Ω
$C_T = 12\text{ pF}, f = 100\text{ MHz}$					

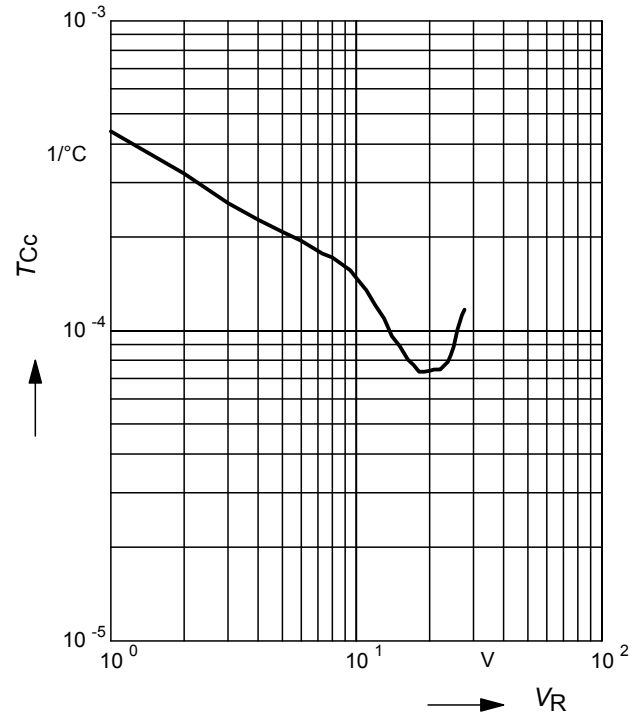
¹For details please refer to Application Note 047.

Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$

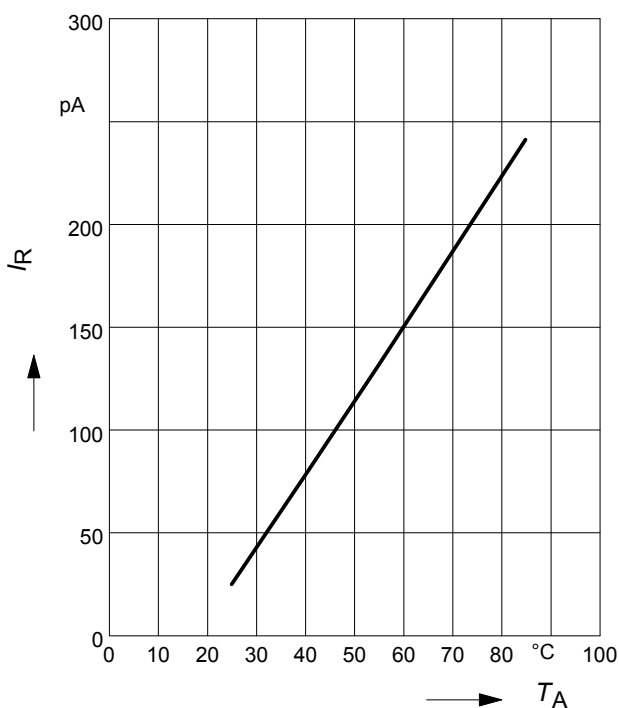


Temperature coefficient of the diode capacitance $T_{Cc} = f(V_R)$



Reverse current $I_R = f(T_A)$

$V_R = 28\text{V}$



Reverse current $I_R = f(V_R)$

$T_A = \text{Parameter}$

