

**Silicon Variable Capacitance Diode**

- For VHF TV / VTR tuners
- Pb-free (RoHS compliant) package


**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	°C
Storage temperature	$T_{stg}$	-55 ... 150	

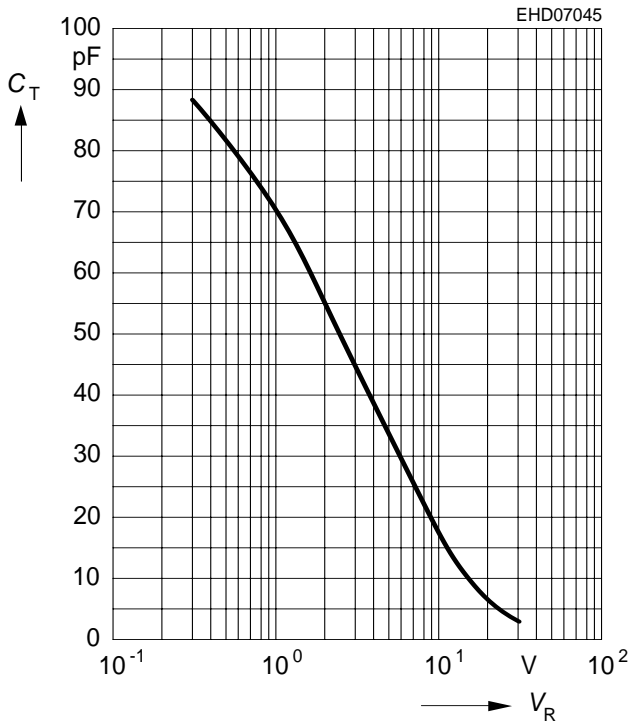
**Electrical Characteristics at  $T_A = 25^\circ\text{C}$ , unless otherwise specified**

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC Characteristics</b>					
Reverse current	$I_R$				nA
$V_R = 30\text{ V}$		-	-	10	
$V_R = 30\text{ V}, T_A = 85^\circ\text{C}$		-	-	200	
<b>AC Characteristics</b>					
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 <sup>1)</sup>	$\Delta C_T/C_T$	-	-	2.5	%
$V_R = 1\text{ V}, V_R = 28\text{ V}, f = 1\text{ MHz}$					
Series resistance	$r_S$	-	1.15	-	$\Omega$
$C_T = 12\text{ pF}, f = 100\text{ MHz}$					

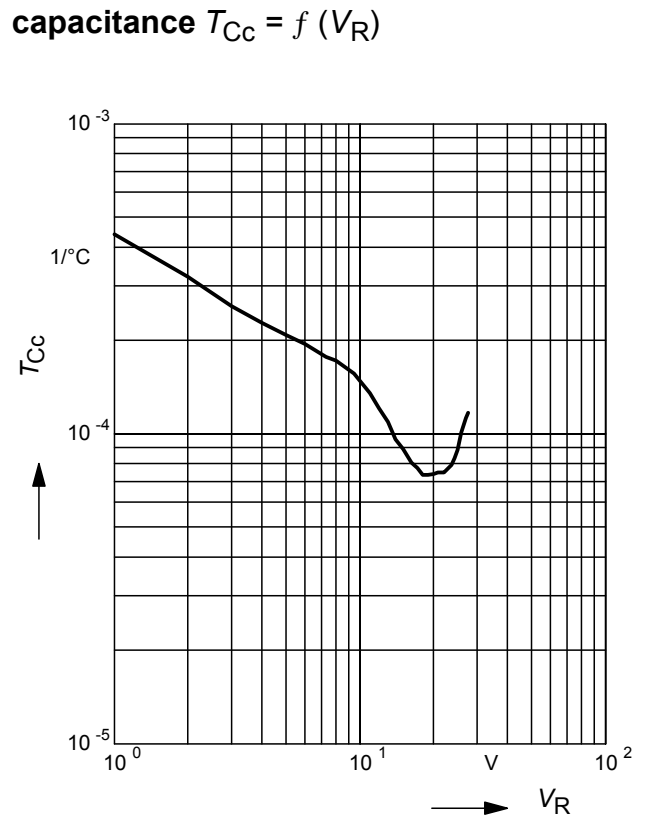
<sup>1</sup>For details please refer to Application Note 047.

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

$f = 1\text{MHz}$

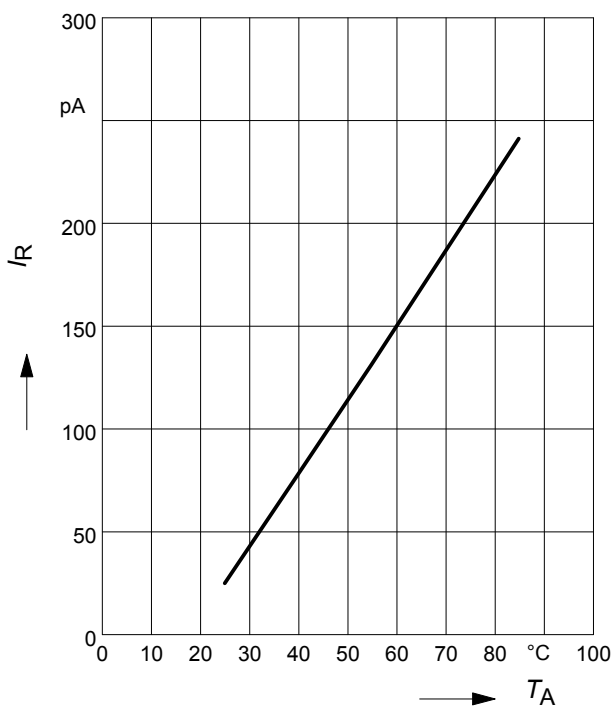


**Temperature coefficient of the diode capacitance  $T_{Cc} = f(V_R)$**



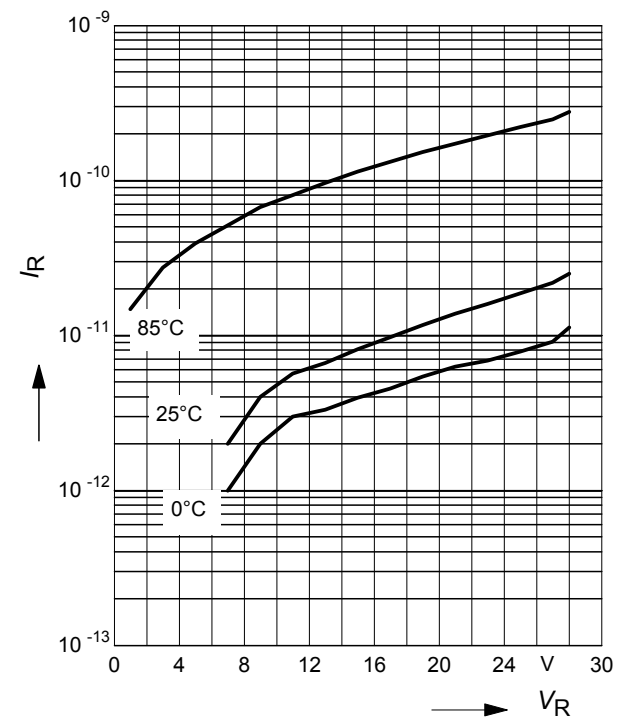
**Reverse current  $I_R = f(T_A)$**

$V_R = 28\text{V}$



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

$T_A = \text{Parameter}$



Package Outline



Foot Print



Marking Layout (Example)



Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel  
 Reel ø330 mm = 10.000 Pieces/Reel

