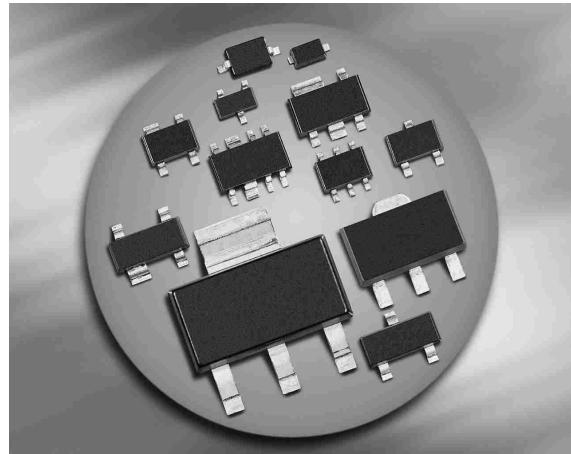
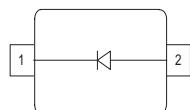


Silicon Variable Capacitance Diode

- 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

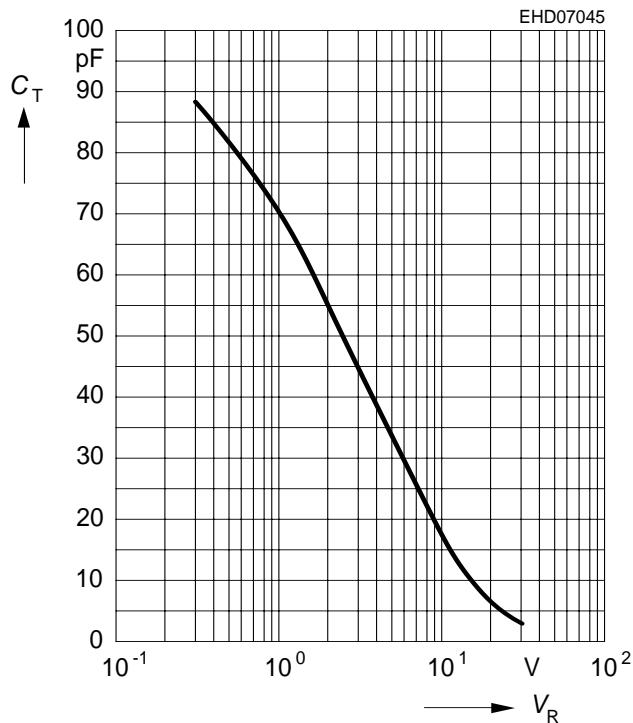
Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	30	V
Peak reverse voltage ($R \geq 5\text{k}\Omega$)	V_{RM}	35	
Forward current	I_F	20	mA
Operating temperature range	T_{op}	-55 ... 150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 ... 150	

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

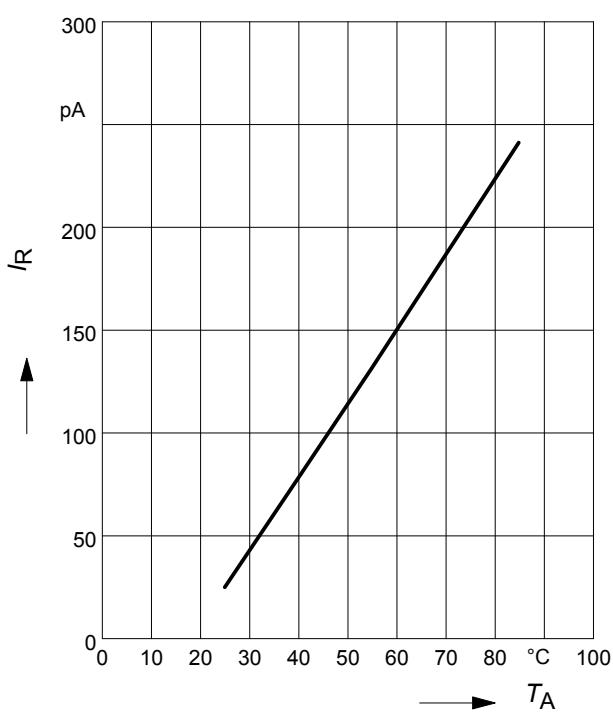
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Reverse current $V_R = 30 \text{ V}$	I_R	-	-	10	nA
$V_R = 30 \text{ V}, T_A = 85^\circ\text{C}$		-	-	200	
AC Characteristics					
Diode capacitance $V_R = 1 \text{ V}, f = 1 \text{ MHz}$	C_T	62	69	76	pF
$V_R = 2 \text{ V}, f = 1 \text{ MHz}$		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 $V_R = 1 \text{ V}, V_R = 28 \text{ V}, f = 1 \text{ MHz}$	C_{T1}/C_{T28}	19.5	-	25	
Capacitance ratio $V_R = 2 \text{ V}, V_R = 25 \text{ V}, f = 1 \text{ MHz}$	C_{T2}/C_{T25}	15	16.6	-	
Capacitance matching ¹⁾ $V_R = 1 \text{ V}, V_R = 28 \text{ V}, f = 1 \text{ MHz}$	$\Delta C_T/C_T$	-	-	2.5	%
Series resistance $C_T = 12 \text{ pF}, f = 100 \text{ MHz}$	r_S	-	1.15	-	Ω

¹⁾For details please refer to Application Note 047.

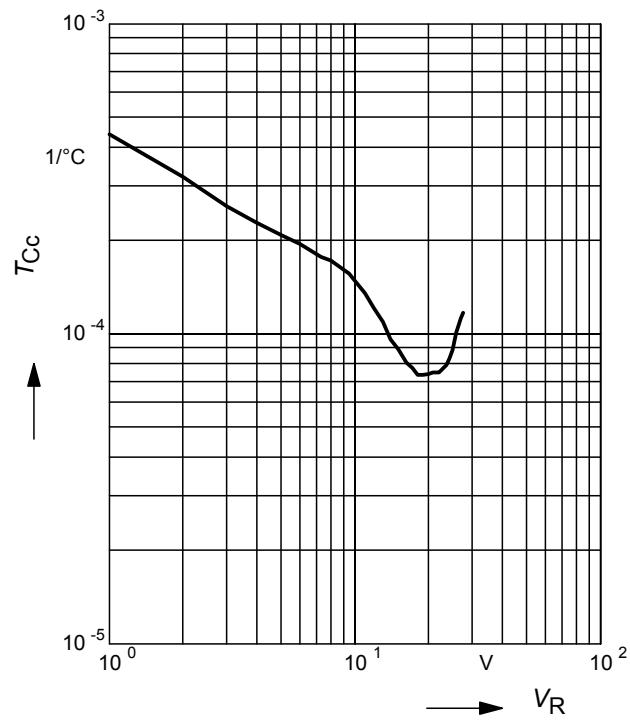
Diode capacitance $C_T = f (V_R)$
 $f = 1\text{MHz}$



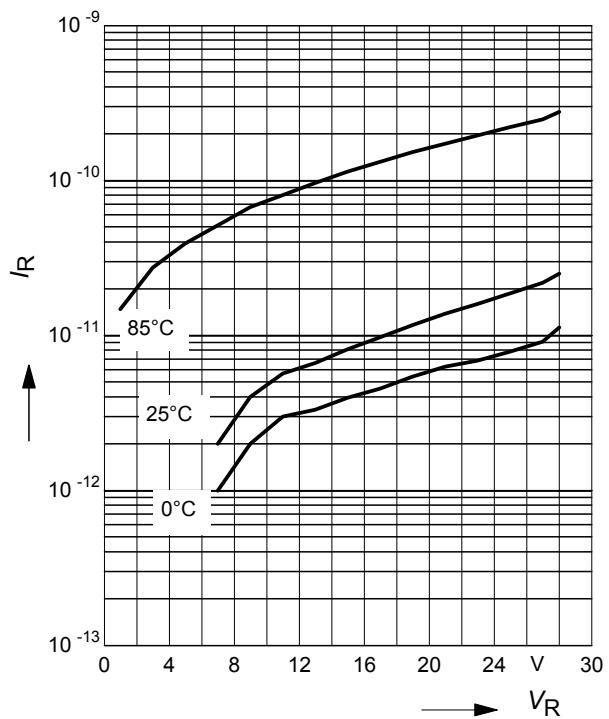
Reverse current $I_R = f (T_A)$
 $V_R = 28\text{V}$



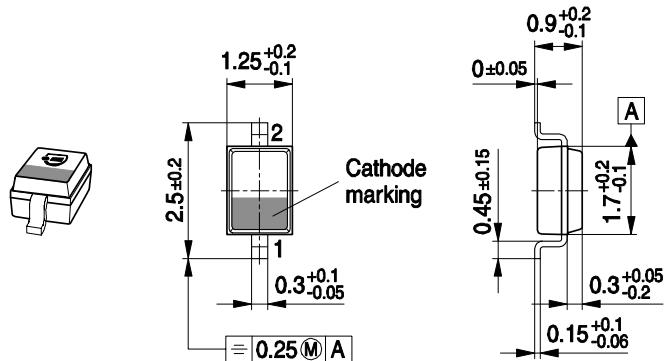
Temperature coefficient of the diode capacitance $T_{Cc} = f (V_R)$



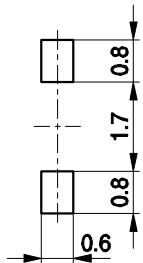
Reverse current $I_R = f(V_R)$
 $T_A = \text{Parameter}$



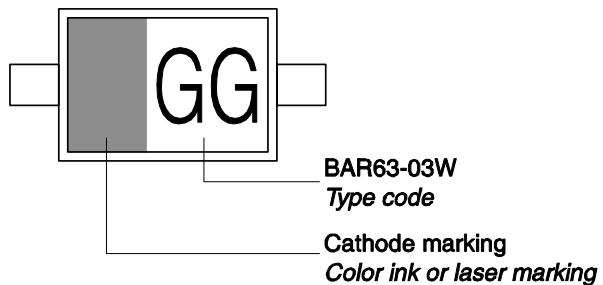
Package Outline



Foot Print



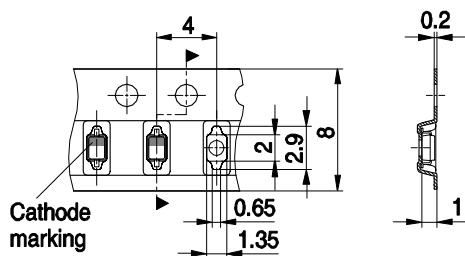
Marking Layout (Example)



Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel

Reel ø330 mm = 10.000 Pieces/Reel



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