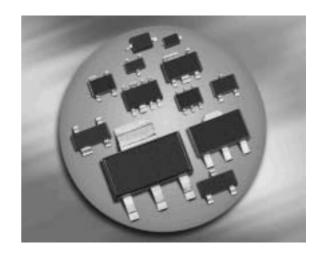


## **Silicon Variable Capacitance Diode**

- For VHF TV / VTR tuners
- Pb-free (RoHS compliant) package 1)
- Qualified according AEC Q101





#### **BB640**



Туре	Package	Configuration	<b>L</b> S(nH)	Marking
BB640	SOD323	single	1.8	red S

**Maximum Ratings** at  $T_A = 25$ °C, unless otherwise specified

Parameter	Symbol	Value	Unit V	
Diode reverse voltage	$V_{R}$	30		
Peak reverse voltage	$V_{RM}$	35		
$(R \ge 5k\Omega)$				
Forward current	/ <sub>F</sub>	20	mA	
Operating temperature range	Top	-55 150	°C	
Storage temperature	T <sub>stg</sub>	-55 150		

1

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<sup>&</sup>lt;sup>1</sup>Pb-containing package may be available upon special request



## **Electrical Characteristics** at $T_A = 25$ °C, unless otherwise specified

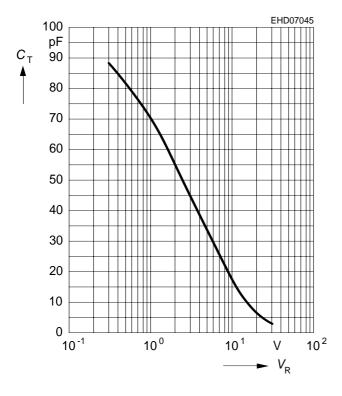
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics	•		•		
Reverse current	I <sub>R</sub>				nA
$V_{R} = 30 \text{ V}$		-	-	10	
$V_{R} = 30 \text{ V}, T_{A} = 85 ^{\circ}\text{C}$		-	-	200	
AC Characteristics					
Diode capacitance	C <sub>T</sub>				pF
$V_{R} = 1 \text{ V}, f = 1 \text{ MHz}$		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 <sub>T1</sub> /C <sub>T28</sub>	19.5	-	25	
$V_{R} = 1 \text{ V}, V_{R} = 28 \text{ V}, f = 1 \text{ MHz}$					
Capacitance ratio	C <sub>T2</sub> /C <sub>T25</sub>	15	16.6	-	
$V_{R} = 2 \text{ V}, V_{R} = 25 \text{ V}, f = 1 \text{ MHz}$					
Capacitance matching <sup>1)</sup>	ΔC <sub>T</sub> /C <sub>T</sub>	-	-	2.5	%
$V_{R} = 1 \text{ V}, V_{R} = 28 \text{ V}, f = 1 \text{ MHz}$					
Series resistance	rs	-	1.15	-	Ω
C <sub>T</sub> = 12 pF, f = 100 MHz					

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

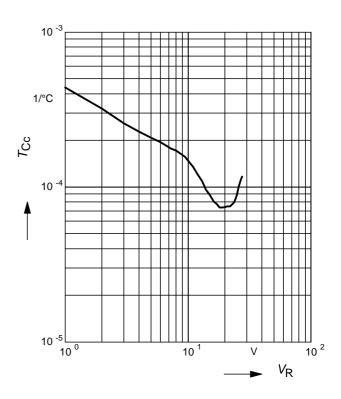


## Diode capacitance $C_T = f(V_R)$

f = 1MHz

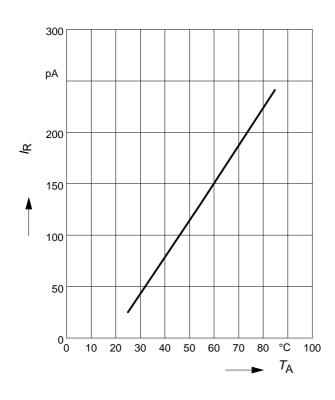


# Temperature coefficient of the diode capacitance $T_{Cc} = f(V_R)$



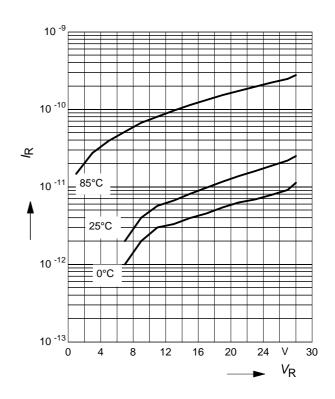
## Reverse current $I_R = f(T_A)$

 $V_{R} = 28V$ 



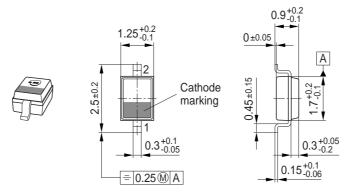
## Reverse current $I_R = f(V_R)$

 $T_A$  = Parameter

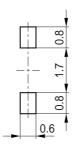




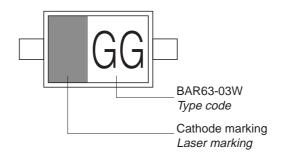
## Package Outline



#### Foot Print

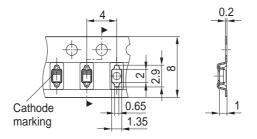


## Marking Layout (Example)



## Standard Packing

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



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