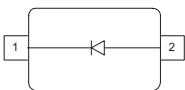


**Silicon Variable Capacitance Diodes**

- For VHF TV-tuners
- High capacitance ratio
- Low series inductance
- Low series resistance
- Excellent uniformity and matching due to "in-line" matching assembly procedure
- Pb-free (RoHS compliant) package<sup>1)</sup>
- Qualified according AEC Q101



**BB644**  
**BB664/-02V**



Type	Package	Configuration	$L_S$ (nH)	Marking
BB644	SOD323	single	1.8	yellow 4
BB664	SCD80	single	0.6	44
BB664-02V	SC79	single	0.6	4

**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	

<sup>1)</sup>Pb-containing package may be available upon special request

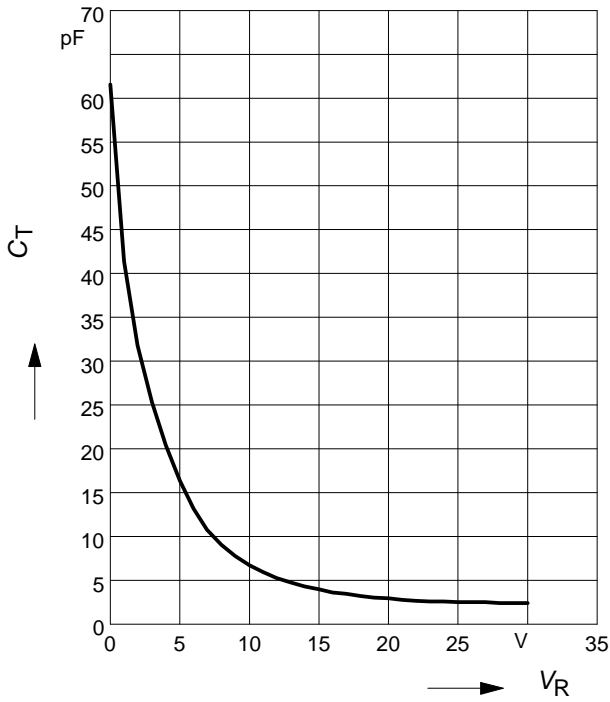
**Electrical Characteristics at  $T_A = 25^\circ\text{C}$ , unless otherwise specified**

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC Characteristics</b>					
Reverse current $V_R = 30\text{ V}$ $V_R = 30\text{ V}, T_A = 85^\circ\text{C}$	$I_R$	-	-	10 100	nA
<b>AC Characteristics</b>					
Diode capacitance $V_R = 1\text{ V}, f = 1\text{ MHz}$ $V_R = 2\text{ V}, f = 1\text{ MHz}$ $V_R = 25\text{ V}, f = 1\text{ MHz}$ $V_R = 28\text{ V}, f = 1\text{ MHz}$	$C_T$	39 29.4 2.5 2.4	41.8 31.85 2.7 2.55	44.5 34.2 2.85 2.75	pF
Capacitance ratio $V_R = 1\text{ V}, V_R = 28\text{ V}, f = 1\text{ MHz}$	$C_{T1}/C_{T28}$	15	16.4	17.8	
Capacitance ratio $V_R = 2\text{ V}, V_R = 25\text{ V}, f = 1\text{ MHz}$	$C_{T2}/C_{T25}$	11	11.8	12.6	
Capacitance matching <sup>1)</sup> $V_R = 1 \dots 28\text{ V}, f = 1\text{ MHz}, 7\text{ diodes sequence}$	$\Delta C_T/C_T$	-	-	2	%
Series resistance $V_R = 5\text{ V}, f = 470\text{ MHz}$	$r_S$	-	0.6	0.75	$\Omega$

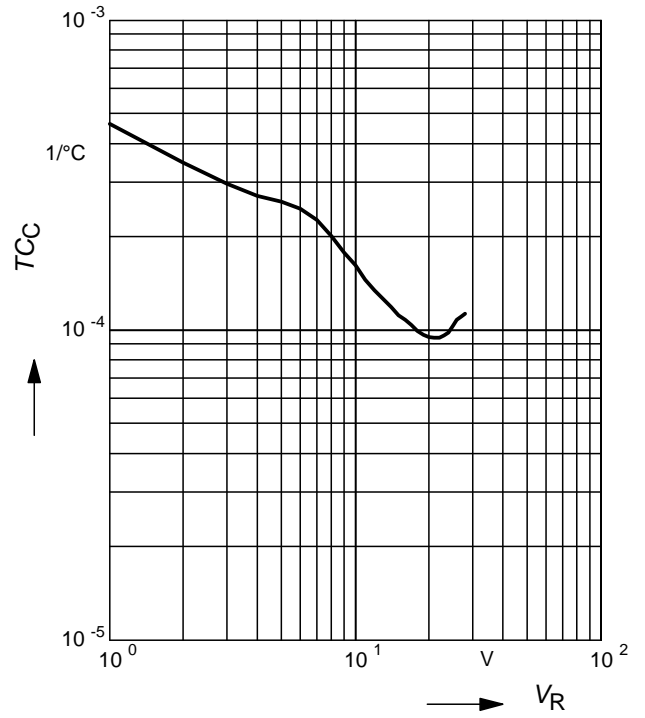
<sup>1</sup>For details please refer to Application Note 047.

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

$f = 1\text{MHz}$

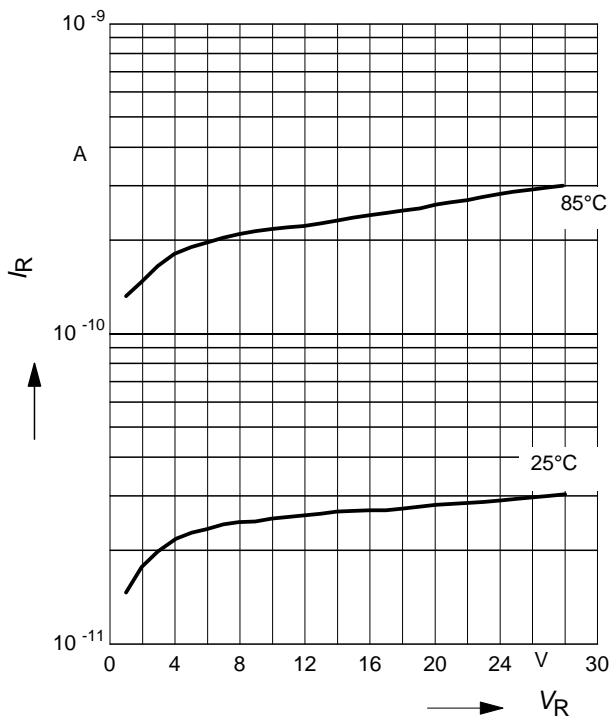


**Temperature coefficient of the diode capacitance  $T_{CC} = f(V_R)$**

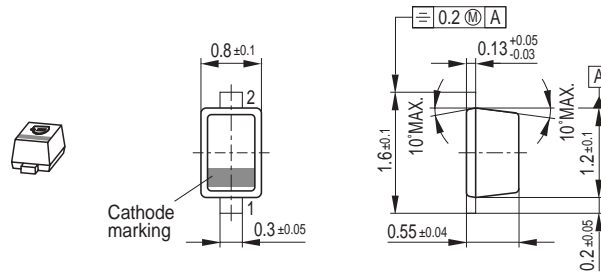


**Reverse current  $I_R = f(V_R)$**

$T_A = \text{Parameter}$



Package Outline



Foot Print



Marking Layout (Example)



Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel  
 Reel ø180 mm = 8.000 Pieces/Reel (2 mm Pitch)  
 Reel ø330 mm = 10.000 Pieces/Reel



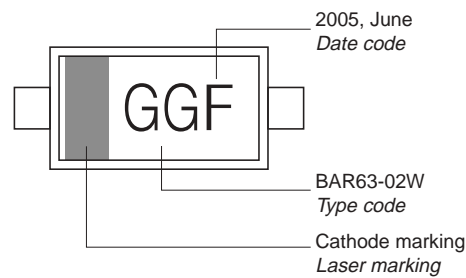
Package Outline



Foot Print

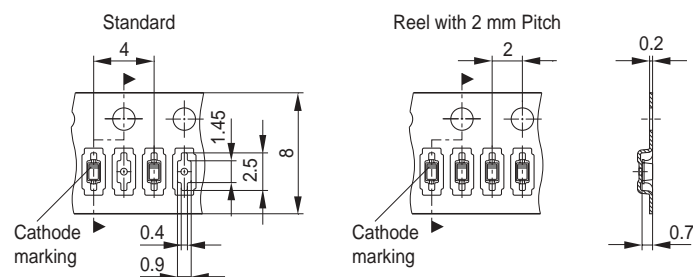


Marking Layout (Example)



Standard Packing

Reel  $\varnothing 180$  mm = 3.000 Pieces/Reel  
 Reel  $\varnothing 180$  mm = 8.000 Pieces/Reel (2 mm Pitch)  
 Reel  $\varnothing 330$  mm = 10.000 Pieces/Reel



Date Code marking for discrete packages with one digit (SCD80, SC79, SC75<sup>1)</sup>) CES-Code

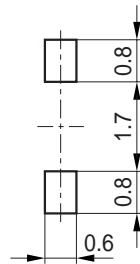
Month	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
01	a	p	A	P	a	p	A	P	a	p	A	P
02	b	q	B	Q	b	q	B	Q	b	q	B	Q
03	c	r	C	R	c	r	C	R	c	r	C	R
04	d	s	D	S	d	s	D	S	d	s	D	S
05	e	t	E	T	e	t	E	T	e	t	E	T
06	f	u	F	U	f	u	F	U	f	u	F	U
07	g	v	G	V	g	v	G	V	g	v	G	V
08	h	x	H	X	h	x	H	X	h	x	H	X
09	j	y	J	Y	j	y	J	Y	j	y	J	Y
10	k	z	K	Z	k	z	K	Z	k	z	K	Z
11	l	2	L	4	l	2	L	4	l	2	L	4
12	n	3	N	5	n	3	N	5	n	3	N	5

1) New Marking Layout for SC75, implemented at October 2005.

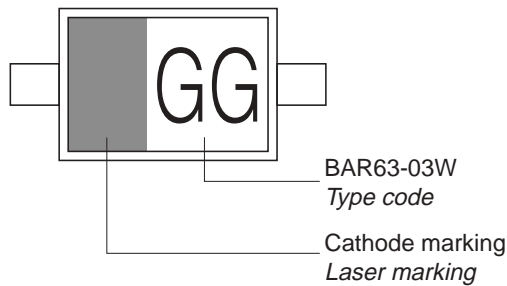
Package Outline



Foot Print



Marking Layout (Example)



Standard Packing

Reel  $\varnothing$ 180 mm = 3.000 Pieces/Reel  
 Reel  $\varnothing$ 330 mm = 10.000 Pieces/Reel



Edition 2006-02-01  
Published by  
Infineon Technologies AG  
81726 München, Germany  
© Infineon Technologies AG 2007.  
All Rights Reserved.

### **Attention please!**

The information given in this dokument shall in no event be regarded as a guarantee of conditions or characteristics ("Beschaffenheitsgarantie"). With respect to any examples or hints given herein, any typical values stated herein and/or any information regarding the application of the device, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind, including without limitation warranties of non-infringement of intellectual property rights of any third party.

### **Information**

For further information on technology, delivery terms and conditions and prices please contact your nearest Infineon Technologies Office ([www.infineon.com](http://www.infineon.com)).

### **Warnings**

Due to technical requirements components may contain dangerous substances. For information on the types in question please contact your nearest Infineon Technologies Office.

Infineon Technologies Components may only be used in life-support devices or systems with the express written approval of Infineon Technologies, if a failure of such components can reasonably be expected to cause the failure of that life-support device or system, or to affect the safety or effectiveness of that device or system.

Life support devices or systems are intended to be implanted in the human body, or to support and/or maintain and sustain and/or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.