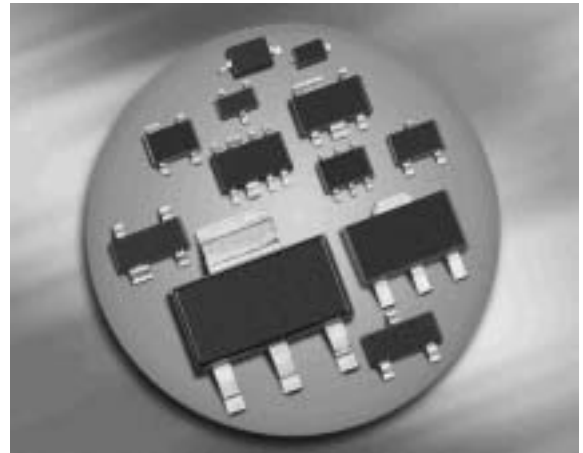
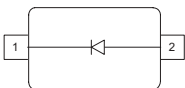


### Silicon Tuning Diodes

- Excellent linearity
- High Q hyperabrupt tuning diode
- Low series resistance
- Designed for low tuning voltage operation for VCO's in mobile communications equipment
- Very low capacitance spread
- Pb-free (RoHS compliant) package<sup>1)</sup>
- Qualified according AEC Q101



**BBY55-02V**  
**BBY55-02W**  
**BBY55-03W**



Type	Package	Configuration	$L_S$ (nH)	Marking
BBY55-02V	SC79	single	0.6	7
BBY55-02W	SCD80	single	0.6	77
BBY55-03W	SOD323	single	1.8	7 white

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

Parameter	Symbol	Value	Unit
Diode reverse voltage	$V_R$	16	V
Forward current	$I_F$	20	mA
Operating temperature range	$T_{op}$	-55 ... 150	°C
Storage temperature	$T_{stg}$	-55 ... 150	

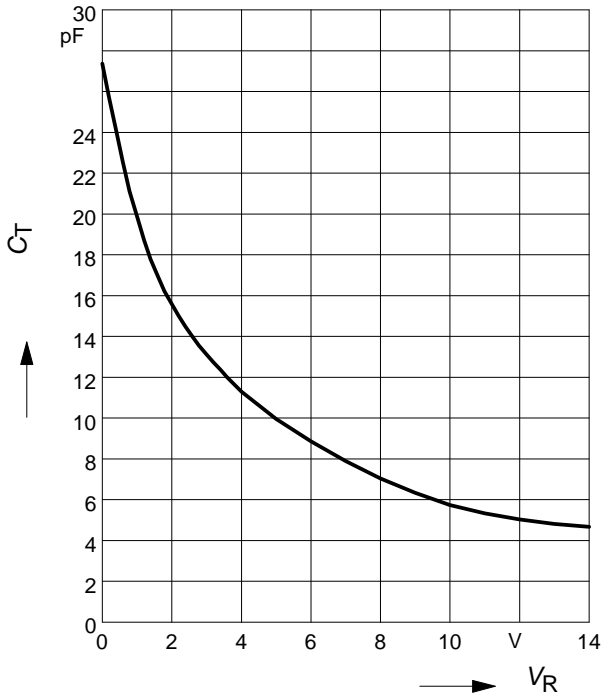
<sup>1</sup>Pb-containing package may be available upon special request

**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	$I_R$				nA
$V_R = 15\text{ V}$		-	-	3	
$V_R = 15\text{ V}, T_A = 85^\circ\text{C}$		-	-	100	
<b>AC Characteristics</b>					
Diode capacitance	$C_T$				pF
$V_R = 1\text{ V}, f = 1\text{ MHz}$		17.5	18.6	19.6	
$V_R = 2\text{ V}, f = 1\text{ MHz}$		14	15	16	
$V_R = 3\text{ V}, f = 1\text{ MHz}$		11.6	12.6	13.6	
$V_R = 4\text{ V}, f = 1\text{ MHz}$		10	11	12	
$V_R = 10\text{ V}, f = 1\text{ MHz}$		5.5	6	6.5	
Capacitance ratio	$C_{T2}/C_{T10}$	2	2.5	3	
$V_R = 2\text{ V}, V_R = 10\text{ V}, f = 1\text{ MHz}$					
Series resistance	$r_S$	-	0.15	0.4	$\Omega$
$V_R = 5\text{ V}, f = 470\text{ MHz}$					

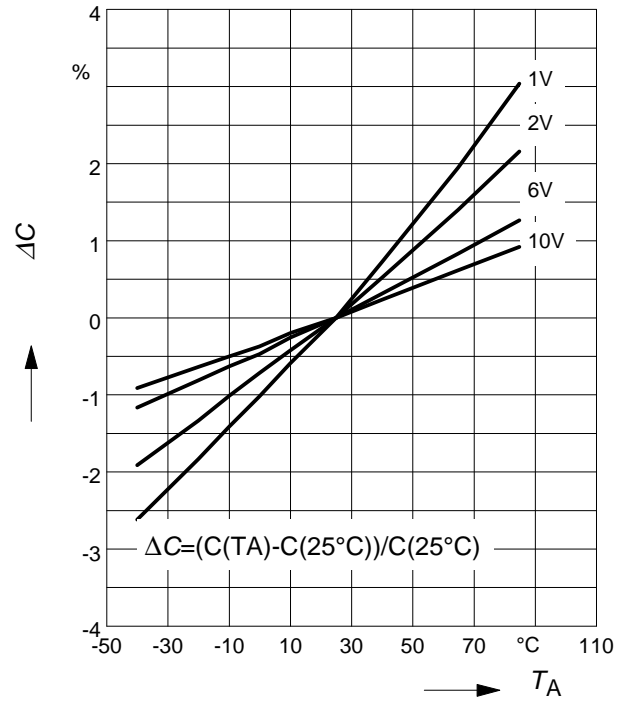
**Diode capacitance  $C_T = f(V_R)$**

$f = 1\text{MHz}$



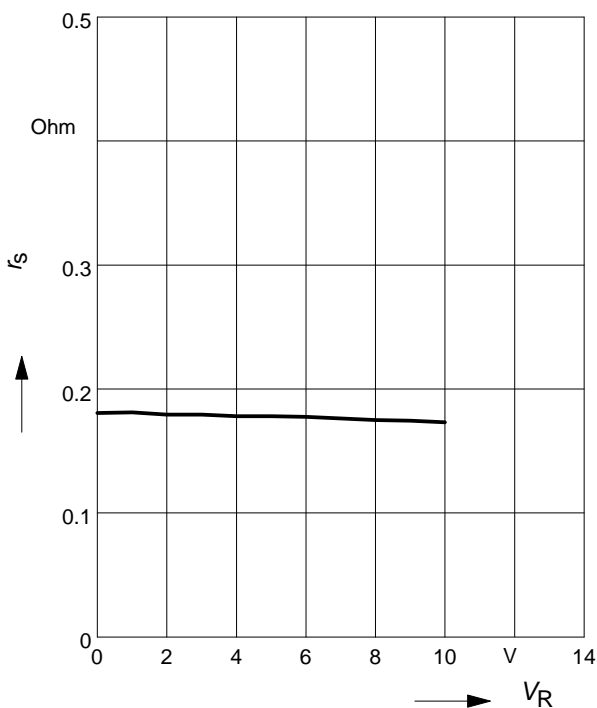
**Capacitance change  $\Delta C = f(T_A)$**

$f = 1\text{MHz}$



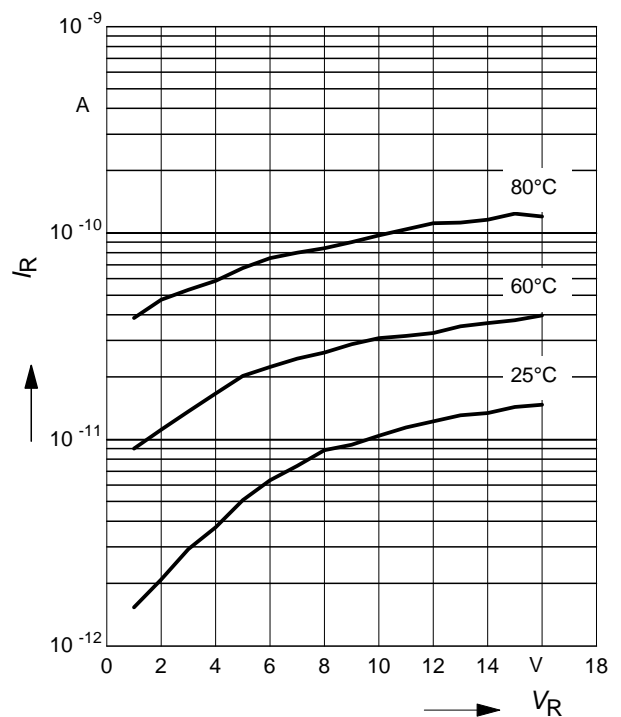
**Series resistance  $r_S = f(V_R)$**

$f = 470\text{MHz}$

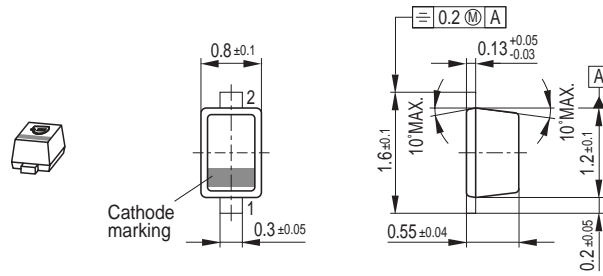


**Reverse current  $I_R = f(V_R)$**

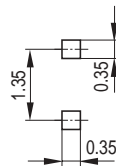
$T_A = \text{Parameter}$



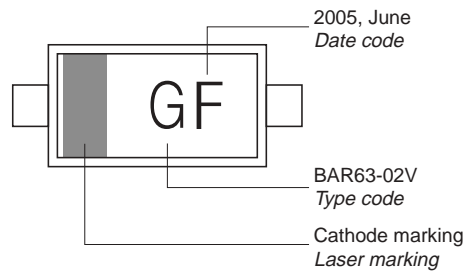
Package Outline



Foot Print



Marking Layout (Example)

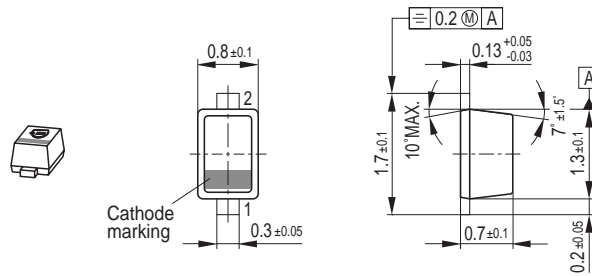


Standard Packing

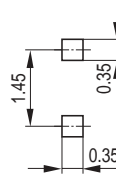
Reel  $\varnothing$ 180 mm = 3.000 Pieces/Reel  
 Reel  $\varnothing$ 180 mm = 8.000 Pieces/Reel (2 mm Pitch)  
 Reel  $\varnothing$ 330 mm = 10.000 Pieces/Reel



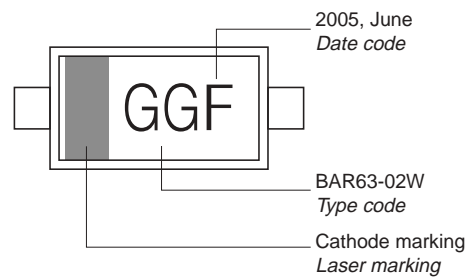
Package Outline



Foot Print

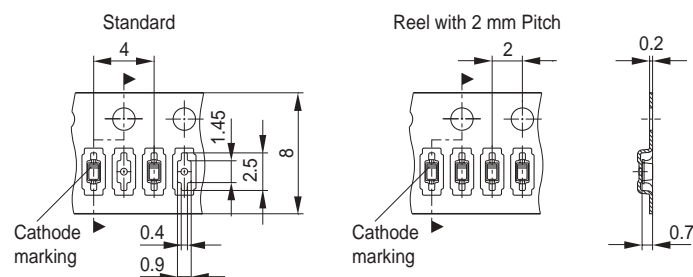


Marking Layout (Example)



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

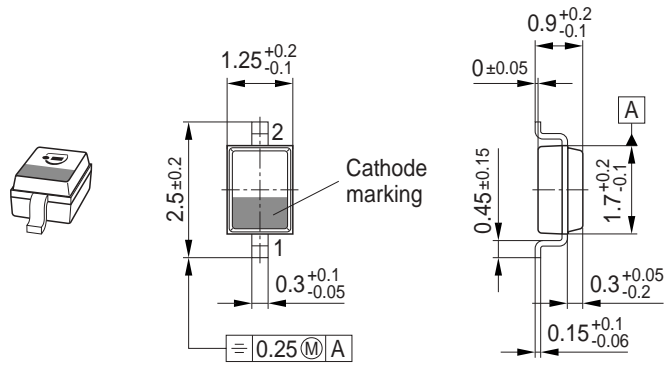


Date Code marking for discrete packages with one digit (SCD80, SC79, SC75<sup>1)</sup>) CES-Code

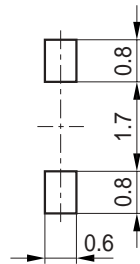
Month	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
01	a	p	A	P	a	p	A	P	a	p	A	P
02	b	q	B	Q	b	q	B	Q	b	q	B	Q
03	c	r	C	R	c	r	C	R	c	r	C	R
04	d	s	D	S	d	s	D	S	d	s	D	S
05	e	t	E	T	e	t	E	T	e	t	E	T
06	f	u	F	U	f	u	F	U	f	u	F	U
07	g	v	G	V	g	v	G	V	g	v	G	V
08	h	x	H	X	h	x	H	X	h	x	H	X
09	j	y	J	Y	j	y	J	Y	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.

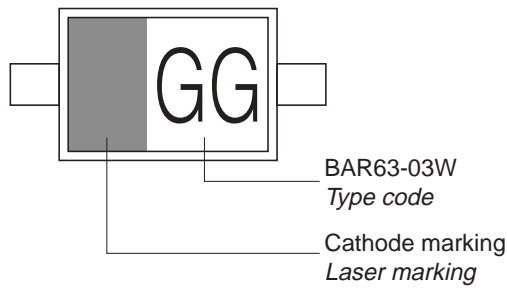
Package Outline



Foot Print

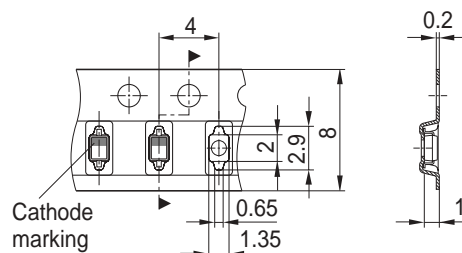


Marking Layout (Example)



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

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