

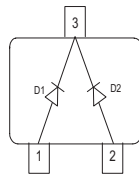
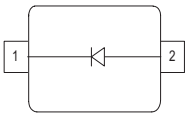
**Silicon Tuning Diode**

- High Q hyperabrupt tuning diode
- Designed for low tuning voltage operation for VCO's in mobile communications equipment
- High ratio at low reverse voltage
- Pb-free (RoHS compliant) package



**BBY53-02L**  
**BBY53-02V**  
**BBY53-02W**  
**BBY53-03W**

**BBY53**  
**BBY53-05W**



Type	Package	Configuration	$L_S$ (nH)	Marking
BBY53	SOT23	common cathode	2	S7s
BBY53-02L	TSLP-2-1	single, leadless	0.4	LL
BBY53-02V	SC79	single	0.6	L
BBY53-02W	SCD80	single	0.6	LL
BBY53-03W	SOD323	single	1.8	white 5
BBY53-05W	SOT323	common cathode	1.4	S7s

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

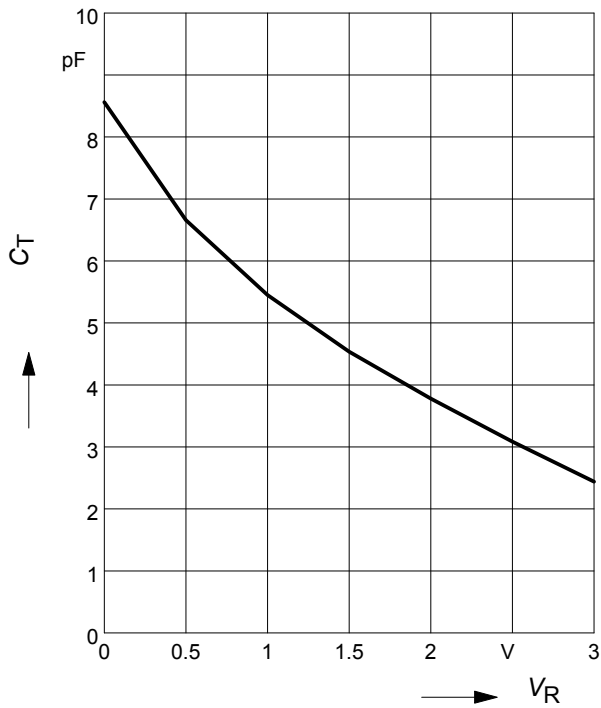
Parameter	Symbol	Value	Unit
Diode reverse voltage	$V_R$	6	V
Forward current	$I_F$	20	mA
Operating temperature range	$T_{op}$	-55 ... 125	°C
Storage temperature	$T_{stg}$	-55 ... 150	

**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
$V_R = 4\text{ V}$		-	-	10	
$V_R = 4\text{ V}, T_A = 85^\circ\text{C}$		-	-	200	
<b>AC Characteristics</b>					
Diode capacitance	$C_T$				pF
$V_R = 1\text{ V}, f = 1\text{ MHz}$		4.8	5.3	5.8	
$V_R = 3\text{ V}, f = 1\text{ MHz}$		1.85	2.4	3.1	
Capacitance ratio	$C_{T1}/C_{T3}$	1.8	2.2	2.6	-
$V_R = 1\text{ V}, V_R = 3\text{ V}, f = 1\text{ MHz}$					
Series resistance	$r_S$	-	0.47	-	$\Omega$
$V_R = 1\text{ V}, f = 1\text{ GHz}$					

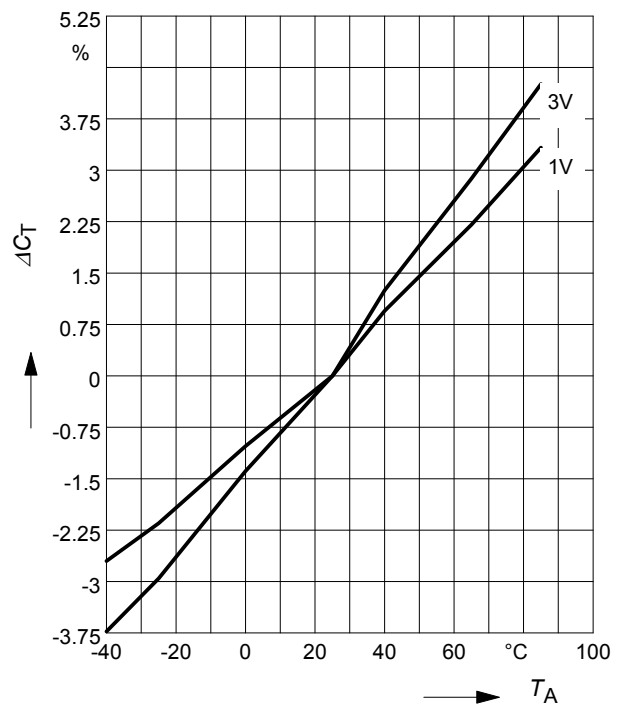
**Diode capacitance  $C_T = f(V_R)$**

$f = 1\text{ MHz}$



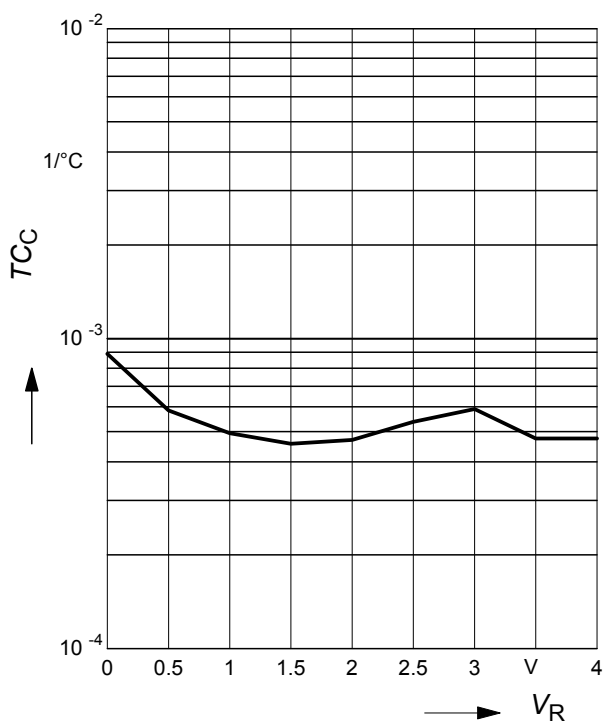
**Capacitance change  $\Delta C = f(T_A)$**

$f = 1\text{ MHz}$



**Temperature coefficient of the diode capacitance  $TC_C = f(V_R)$**

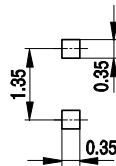
$f = 1\text{ MHz}$



### Package Outline



### Foot Print

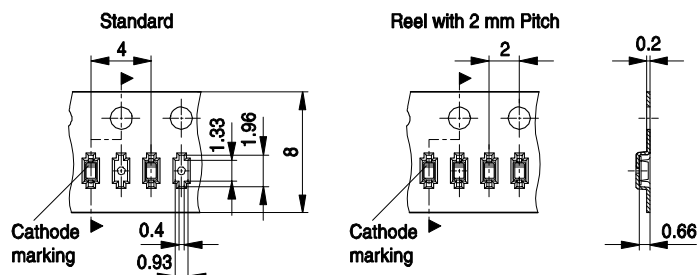


### Marking Layout (Example)



### 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 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

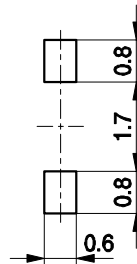
Month	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
01	a	p	A	P	a	p	A	P	a	p	A	P
02	b	q	B	Q	b	q	B	Q	b	q	B	Q
03	c	r	C	R	c	r	C	R	c	r	C	R
04	d	s	D	S	d	s	D	S	d	s	D	S
05	e	t	E	T	e	t	E	T	e	t	E	T
06	f	u	F	U	f	u	F	U	f	u	F	U
07	g	v	G	V	g	v	G	V	g	v	G	V
08	h	x	H	X	h	x	H	X	h	x	H	X
09	j	y	J	Y	j	y	J	Y	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 ø180 mm = 3.000 Pieces/Reel  
 Reel ø330 mm = 10.000 Pieces/Reel



Package Outline



1) Lead width can be 0.6 max. in dambar area

Foot Print

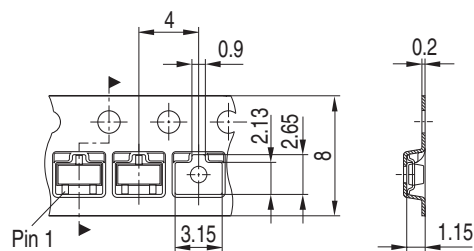


Marking Layout (Example)



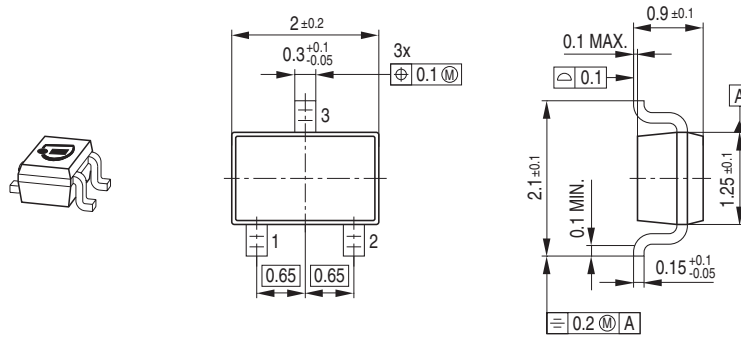
Standard Packing

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

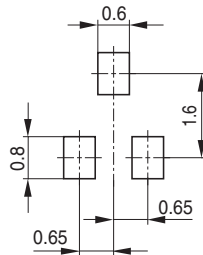




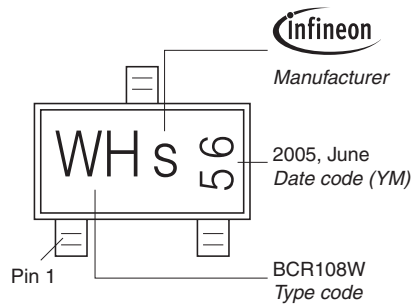
Package Outline



Foot Print

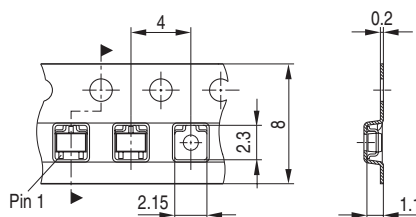


Marking Layout (Example)

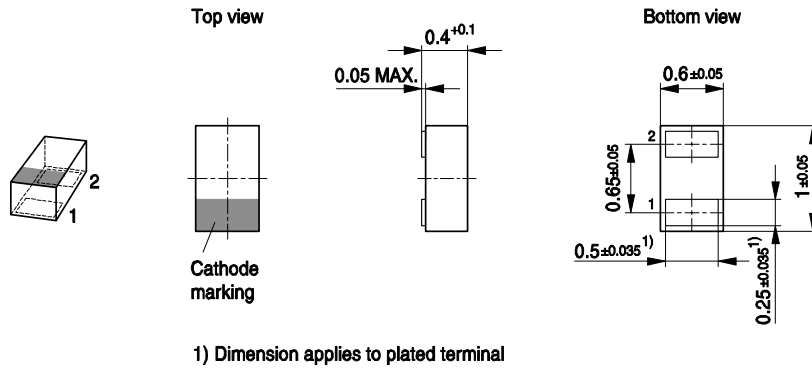


Standard Packing

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

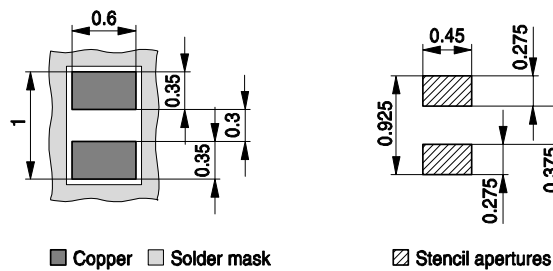


### Package Outline

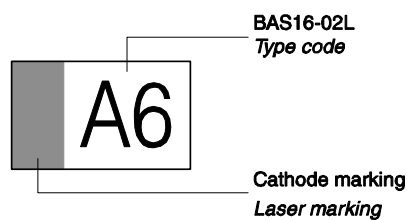


### Foot Print

For board assembly information please refer to Infineon website "Packages"

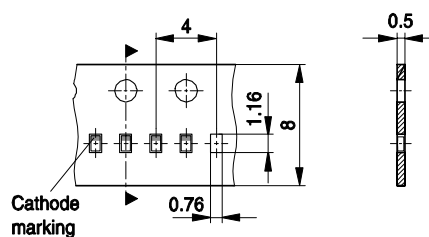


### Marking Layout (Example)



### Standard Packing

Reel  $\varnothing$ 180 mm = 15.000 Pieces/Reel  
 Reel  $\varnothing$ 330 mm = 50.000 Pieces/Reel (optional)



**Edition 2009-11-16**

**Published by  
Infineon Technologies AG  
81726 Munich, Germany**

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