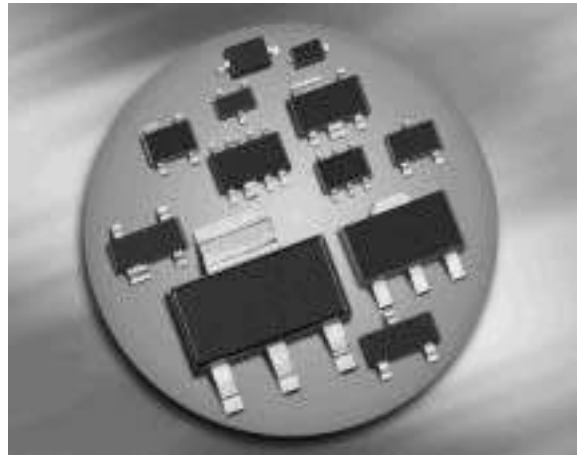


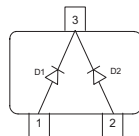
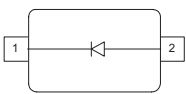
### Silicon Tuning Diode

- Excellent linearity
- High Q hyperabrupt tuning diode
- Low series resistance
- High capacitance ratio
- Designed for low tuning voltage operation for VCO's in mobile communications equipment
- For control elements such as TCXOs and VCXOs
- Pb-free (RoHS compliant) package<sup>1)</sup>
- Qualified according AEC Q101



**BBY57-02L**  
**BBY57-02V**  
**BBY57-02W**

**BBY57-05W**



Type	Package	Configuration	$L_S$ (nH)	Marking
BBY57-02L	TSLP-2	single	0.4	55
BBY57-02V	SC79	single	0.6	5
BBY57-02W	SCD80	single	0.6	55
BBY57-05W	SOT323	common cathode	1.4	D5s

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

Parameter	Symbol	Value	Unit
Diode reverse voltage	$V_R$	10	V
Forward current	$I_F$	20	mA
Operating temperature range	$T_{op}$	-55 ... 125	°C
Storage temperature	$T_{stg}$	-55 ... 150	

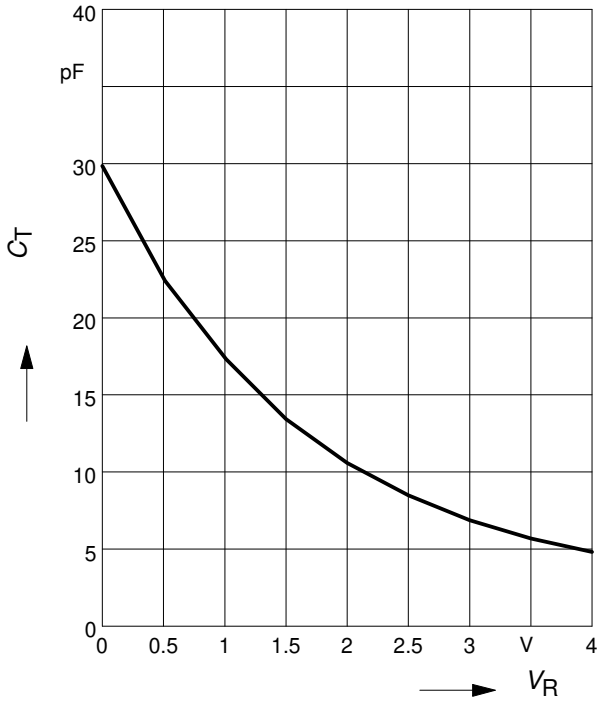
<sup>1)</sup>Pb-containing package may be available upon special request

**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
$V_R = 8\text{ V}$		-	-	10	
$V_R = 8\text{ V}, T_A = 85^\circ\text{C}$		-	-	100	
<b>AC Characteristics</b>					
Diode capacitance	$C_T$				pF
$V_R = 1\text{ V}, f = 1\text{ MHz}$		16.5	17.5	18.6	
$V_R = 2.5\text{ V}, f = 1\text{ MHz}$		-	9.35	-	
$V_R = 3\text{ V}, f = 1\text{ MHz}$		-	7	-	
$V_R = 4\text{ V}, f = 1\text{ MHz}$		4	4.7	5.5	
Capacitance ratio	$C_{T1}/C_{T3}$	-	2.45	-	
$V_R = 1\text{ V}, V_R = 3\text{ V}, f = 1\text{ MHz}$					
Capacitance ratio	$C_{T1}/C_{T4}$	3	3.7	4.5	
$V_R = 1\text{ V}, V_R = 4\text{ V}, f = 1\text{ MHz}$					
Series resistance	$r_S$				$\Omega$
$V_R = 1\text{ V}, f = 470\text{ MHz}, \text{BBY57-02L}$		-	0.35	-	
$V_R = 1\text{ V}, f = 470\text{ MHz}, \text{all others}$		-	0.3	-	

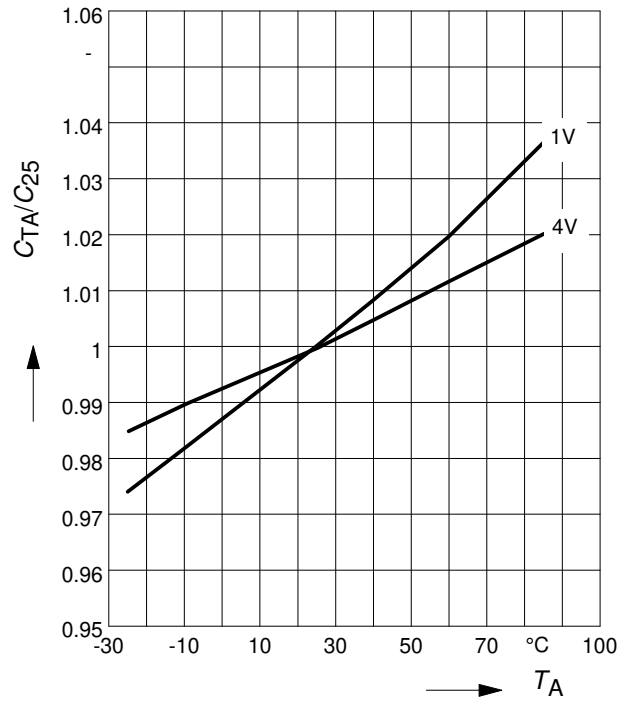
**Diode capacitance  $C_T = f(V_R)$**

$f = 1\text{MHz}$

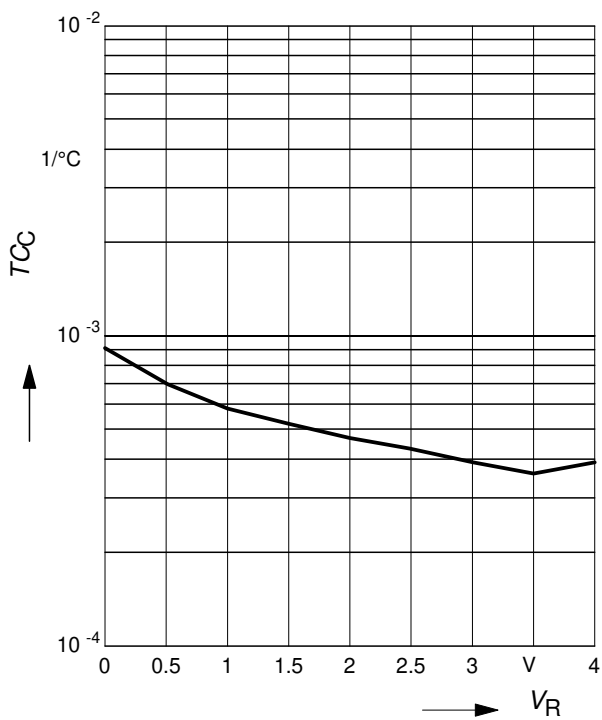


**Normalized diode capacitance**

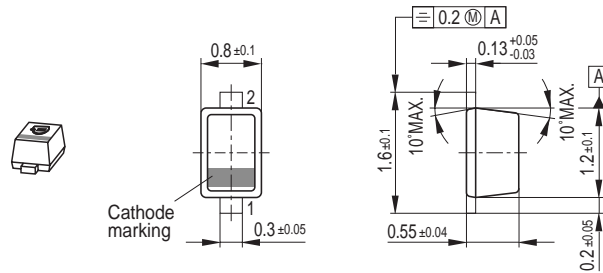
$C_{(T_A)}/C_{(25^\circ\text{C})} = f(T_A); f = 1\text{MHz}$



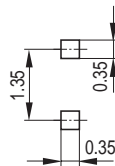
**Temperature coefficient of the diode capacitance  $T_{CC} = f(V_R)$**



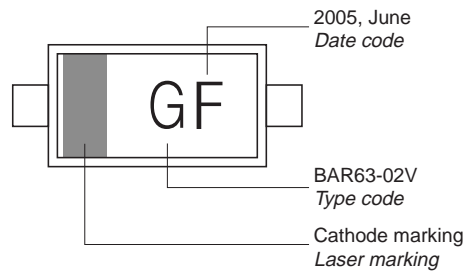
Package Outline



Foot Print

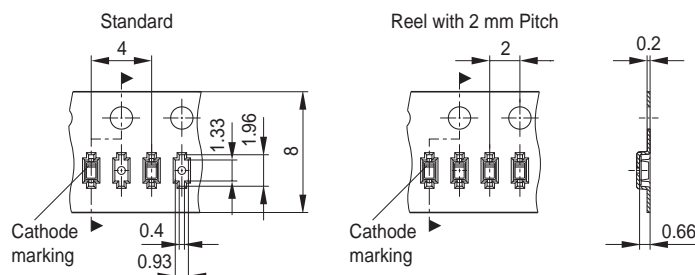


Marking Layout (Example)

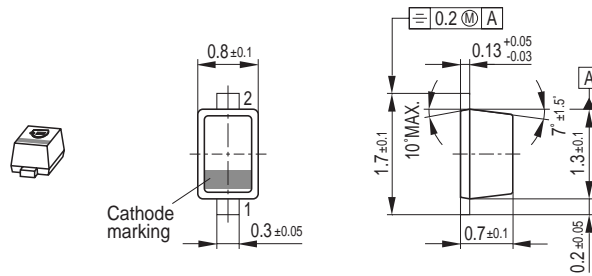


Standard Packing

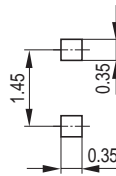
Reel ø180 mm = 3.000 Pieces/Reel  
 Reel ø180 mm = 8.000 Pieces/Reel (2 mm Pitch)  
 Reel ø330 mm = 10.000 Pieces/Reel



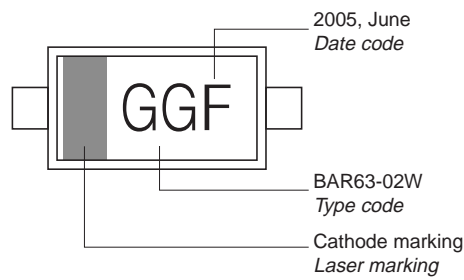
Package Outline



Foot Print

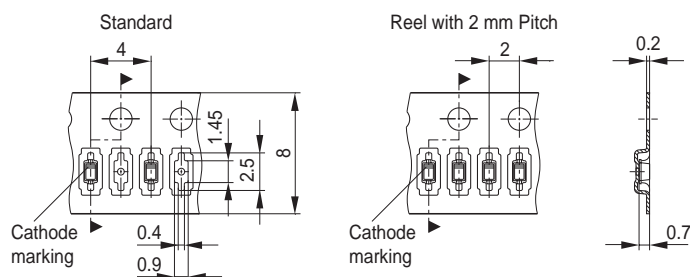


Marking Layout (Example)



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

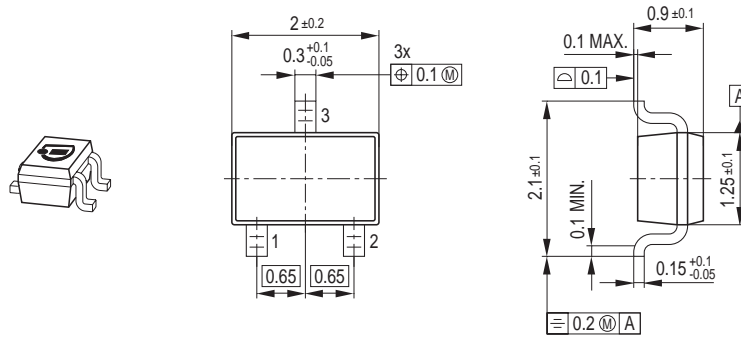


Date Code marking for discrete packages with one digit (SCD80, SC79, SC75<sup>1)</sup>) CES-Code

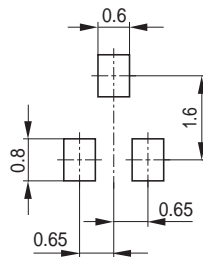
Month	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
01	a	p	A	P	a	p	A	P	a	p	A	P
02	b	q	B	Q	b	q	B	Q	b	q	B	Q
03	c	r	C	R	c	r	C	R	c	r	C	R
04	d	s	D	S	d	s	D	S	d	s	D	S
05	e	t	E	T	e	t	E	T	e	t	E	T
06	f	u	F	U	f	u	F	U	f	u	F	U
07	g	v	G	V	g	v	G	V	g	v	G	V
08	h	x	H	X	h	x	H	X	h	x	H	X
09	j	y	J	Y	j	y	J	Y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

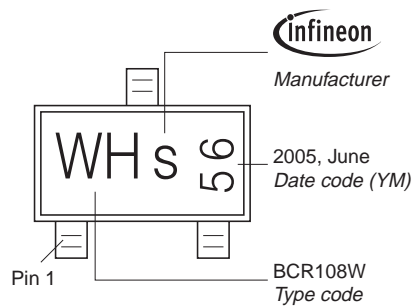
Package Outline



Foot Print

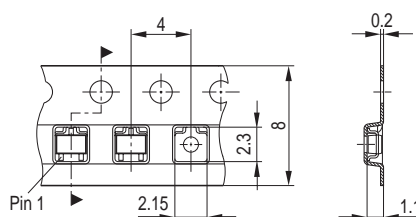


Marking Layout (Example)

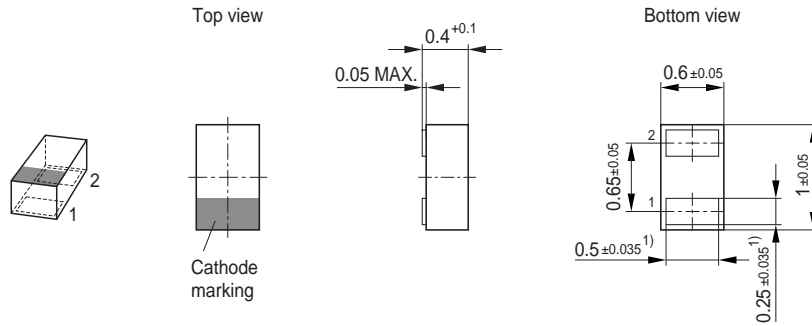


Standard Packing

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



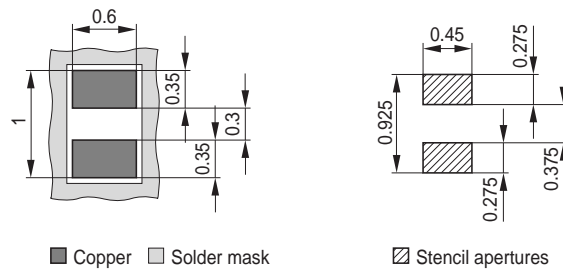
### Package Outline



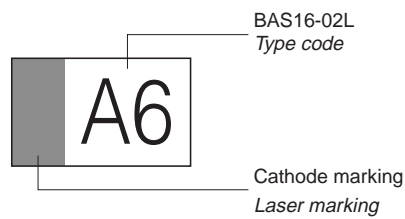
1) Dimension applies to plated terminal

### Foot Print

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

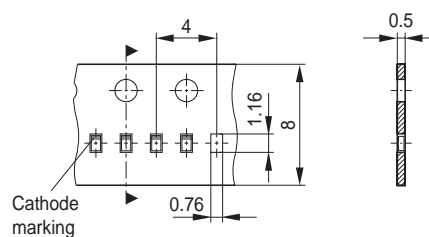


### Marking Layout (Example)



### Standard Packing

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





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List of affected products 1\_cip08187\_a1



**PCN 2008-187-A1**

Implementation of Cu wire bonding for halogen free products assembled in lead-free packages PG-SC79 and PG-SCD80 and Transfer of assembly and final test to Infineon Technologies (Wuxi) Co., Ltd., China

**Changes for PG-SC79 and PG-SCD80 products**

<b>Assembly and final test site</b>	Transfer from IFX Mal to IFX Wuxi
<b>Plating site</b>	Transfer from IFX Mal to our subcontractor used for already established PG-SOT23 production
<b>Wire bonding thickness and material</b>	Change from Au to Cu wire. Wire thickness depends on product. See details below
<b>Marking on device</b>	As illustrated in PCN document, page 2
<b>SP number (ordering code)</b>	Details see below
<b>Last order date / Last delivery date</b> of unchanged product	<b>30.06.2010 / 30.12.2010</b>
<b>PCN samples</b>	Available: Lead types * All other types will have a leadtime of 6 weeks from customer sample order till sample delivery

Type	Sales Name	New Sales Name E substituted by H	Package	Current Au wire thickness	New Cu wire thickness	Current SP number	New SP number	Sample availability
Silicon Tuning Diode	BBY 55-02W E6327	BBY 55-02W H6327	PG-SCD80-2-1	33 µm	38 µm	SP000012232	SP000743558	Available
Silicon Tuning Diode	BBY 56-02W E6327	BBY 56-02W H6327	PG-SCD80-2-1	33 µm	38 µm	SP000012233	SP000743440	Available
Silicon Tuning Diode	BBY 57-02W E6327	BBY 57-02W H6327	PG-SCD80-2-1	33 µm	38 µm	SP000012234	SP000743562	Available
Silicon Tuning Diode	BBY 58-02W E6327	BBY 58-02W H6327	PG-SCD80-2-1	33 µm	38 µm	SP000012235	SP000743570	Available
Silicon RF Switching Diode	BA 892-02V E6127	BA 892-02V H6127	PG-SC79-2-1	20 µm	22 µm	SP000104706	SP000745052	*
Silicon RF Switching Diode	BA 892-02V E6327	BA 892-02V H6327	PG-SC79-2-1	20 µm	22 µm	SP000013174	SP000745054	Available
Silicon RF Switching Diode	BA 892-02V E6433	BA 892-02V H6433	PG-SC79-2-1	20 µm	22 µm	SP000013175	SP000745060	*
Silicon PIN Diode	BAR 50-02V E6327	BAR 50-02V H6327	PG-SC79-2-1	20 µm	22 µm	SP000012921	SP000742882	Available
Silicon PIN Diode	BAR 63-02V E6327	BAR 63-02V H6327	PG-SC79-2-1	20 µm	22 µm	SP000010162	SP000742888	Available
Silicon PIN Diode	BAR 64-02V E6327	BAR 64-02V H6327	PG-SC79-2-1	20 µm	22 µm	SP000010361	SP000743408	Available
Silicon PIN Diode	BAR 65-02V E6327	BAR 65-02V H6327	PG-SC79-2-1	20 µm	22 µm	SP000010359	SP000743446	Available
Silicon PIN Diode	BAR 67-02V E6327	BAR 67-02V H6327	PG-SC79-2-1	20 µm	22 µm	SP000010369	SP000743448	Available
Silicon PIN Diode	BAR 88-02V E6327	BAR 88-02V H6327	PG-SC79-2-1	20 µm	22 µm	SP000013484	SP000743452	Available
Silicon Switching Diode	BAS 16-02V E6327	BAS 16-02V H6327	PG-SC79-2-1	20 µm	22 µm	SP000014911	SP000752008	Available
Silicon Switching Diode	BAS 3005A-02V E6327	BAS 3005A-02V H6327	PG-SC79-2-1	38 µm	38 µm	SP000297683	SP000749684	*
Silicon Switching Diode	BAS 3005B-02V E6327	BAS 3005B-02V H6327	PG-SC79-2-1	38 µm	38 µm	SP000065626	SP000749682	*
Silicon Switching Diode	BAS 52-02V E6327	BAS 52-02V H6327	PG-SC79-2-1	38 µm	38 µm	SP000013936	SP000749808	Available
Silicon Schottky Diode	BAT 54-02V E6327	BAT 54-02V H6327	PG-SC79-2-1	20 µm	22 µm	SP000232851	SP000749828	*
Silicon Schottky Diode	BAT 63-02V E6327	BAT 63-02V H6327	PG-SC79-2-1	20 µm	22 µm	SP000273992	SP000743526	Available
Silicon Tuning Diode	BB 555-02V E7902	BB 555-02V H7902	PG-SC79-2-1	33 µm	38 µm	SP000013176	SP000745088	Available
Silicon Tuning Diode	BB 555-02V E7912	BB 555-02V H7912	PG-SC79-2-1	33 µm	38 µm	SP000104717	SP000745092	*
Silicon Tuning Diode	BB 565-02V E7902	BB 565-02V H7902	PG-SC79-2-1	33 µm	38 µm	SP000013416	SP000745098	*
Silicon Tuning Diode	BB 659C-02V E7902	BB 659C-02V H7902	PG-SC79-2-1	33 µm	38 µm	SP000013179	SP000745108	Available
Silicon Tuning Diode	BB 659C-02V E7908	BB 659C-02V H7908	PG-SC79-2-1	33 µm	38 µm	SP000013180	SP000745110	*
Silicon Tuning Diode	BB 659C-02V E7912	BB 659C-02V H7912	PG-SC79-2-1	33 µm	38 µm	SP000104719	SP000745112	*
Silicon Tuning Diode	BB 664-02V E7902	BB 664-02V H7902	PG-SC79-2-1	33 µm	38 µm	SP000013418	SP000745118	*
Silicon Tuning Diode	BB 689-02V E7902	BB 689-02V H7902	PG-SC79-2-1	33 µm	38 µm	SP000013414	SP000745124	*