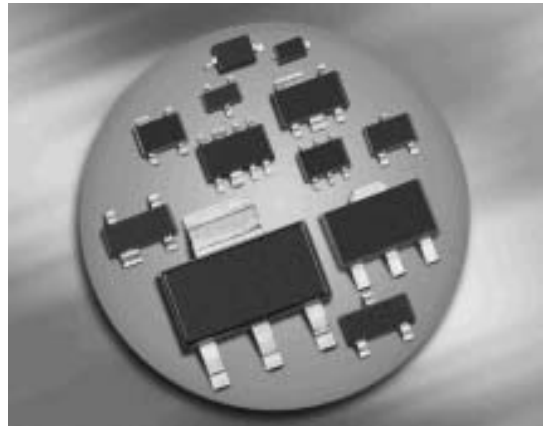
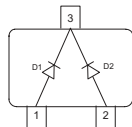
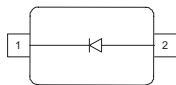


**Silicon Tuning Diodes**

- High capacitance ratio
- 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


**BBY66-02V**
**BBY66-05**  
**BBY66-05W**


Type	Package	Configuration	$L_S$ (nH)	Marking
BBY66-02V	SC79	single	0.6	h
BBY66-05	SOT23	common cathode	1.8	O1s / O2s**
BBY66-05W	SOT323	common cathode	1.4	OBs

\*\*For differences see next page Capacitance groups

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

Parameter	Symbol	Value	Unit
Diode reverse voltage	$V_R$	12	V
Forward current	$I_F$	50	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
$V_R = 10\text{ V}$		-	-	20	
$V_R = 10\text{ V}, T_A = 65^\circ\text{C}$		-	-	200	
<b>AC Characteristics</b>					
Diode capacitance <sup>1)</sup>	$C_T$				pF
$V_R = 1\text{ V}, f = 1\text{ MHz}$		66	68.7	71.5	
$V_R = 2\text{ V}, f = 1\text{ MHz}$		33	35.4	38	
$V_R = 3\text{ V}, f = 1\text{ MHz}$		19.7	20.95	22.2	
$V_R = 4.5\text{ V}, f = 1\text{ MHz}$		12	12.7	13.5	
Capacitance ratio	$C_{T1}/C_{T4.5}$	5	5.41	-	
$V_R = 1\text{ V}, V_R = 4.5\text{ V}$					
Series resistance	$r_S$	-	0.25	0.4	$\Omega$
$V_R = 1\text{ V}, f = 470\text{ MHz}$					

<sup>1</sup>Capacitance groups at 1V, coded 01; 02 (only BBY66-05)

 $C_T$ /groups      01      02

 $C_{1V}$     min      66pF    68.5pF

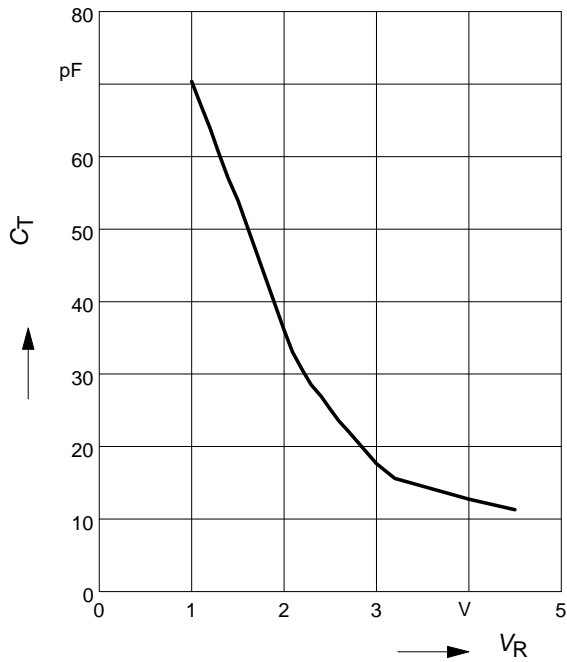
 $C_{1V}$     max      69pF    71.5pF

Deliveries contain either  $C_T$  group 01 or group 02 (marked on reel).

No direct order of  $C_T$  groups possible

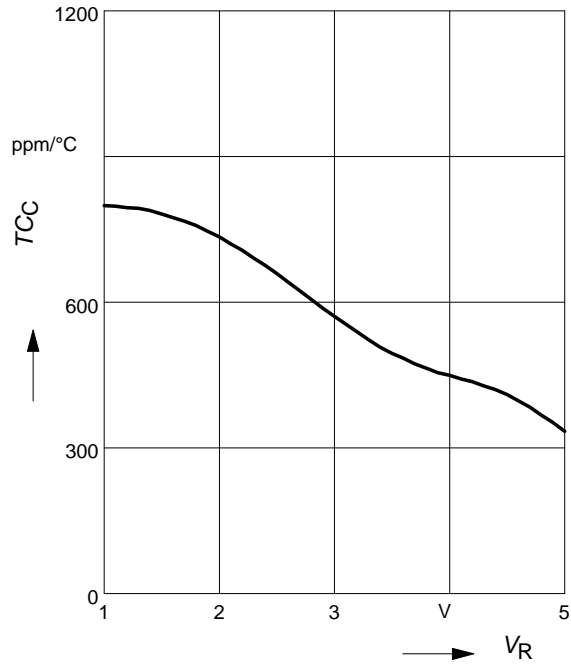
**Diode capacitance  $C_T = f(V_R)$**

$f = 1\text{MHz}$



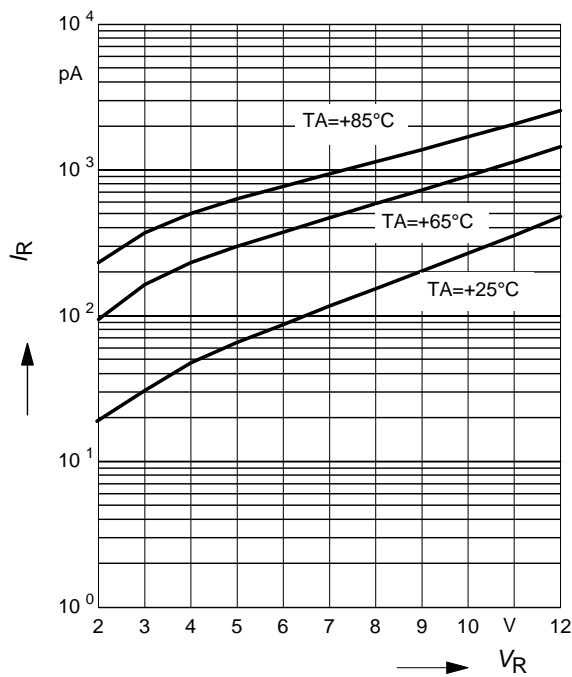
**Temperature coefficient of the diode capacitance  $T_{CC} = f(V_R)$**

$T_{CC} = f(V_R)$

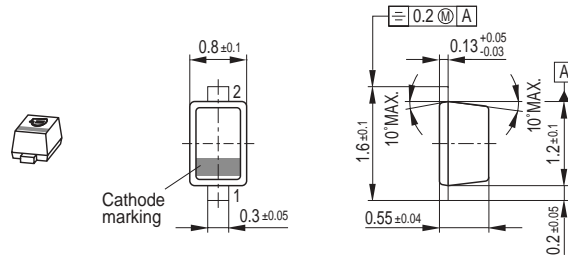


**Reverse current  $I_R = f(V_R)$**

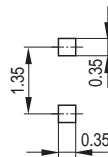
$T_A = \text{Parameter}$



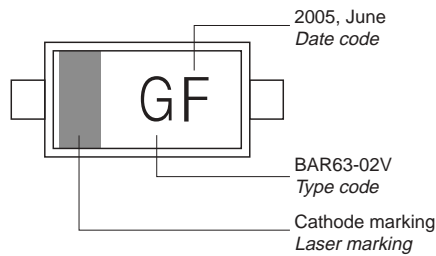
Package Outline



Foot Print

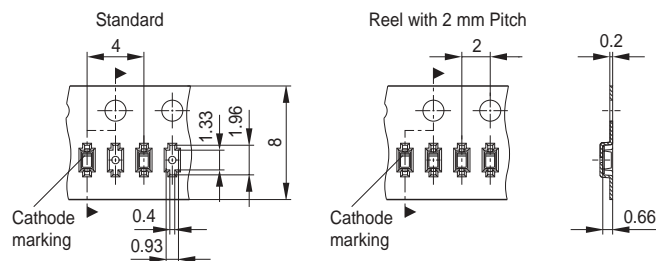


Marking Layout (Example)



Standard Packing

Reel  $\varnothing$ 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

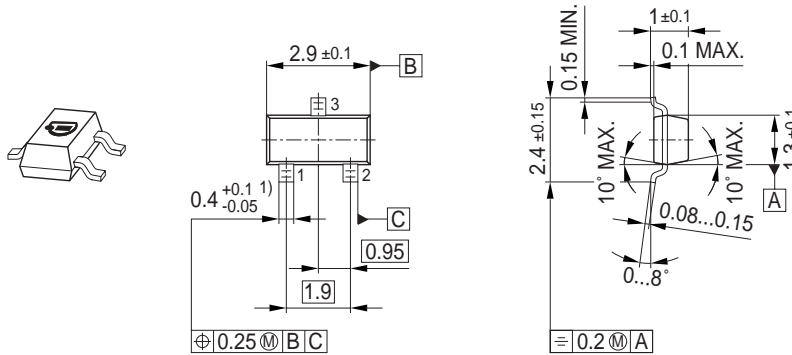


Date Code marking for discrete packages with one digit (SCD80, SC79, SC75<sup>1)</sup>) CES-Code

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

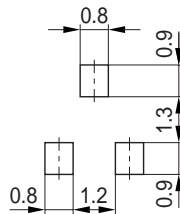
1) New Marking Layout for SC75, implemented at October 2005.

Package Outline

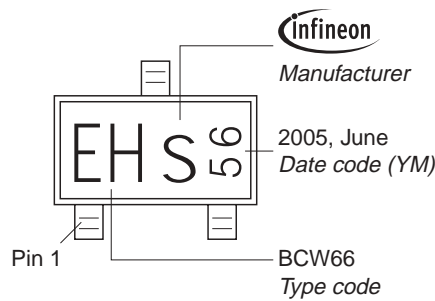


1) Lead width can be 0.6 max. in dambar area

Foot Print

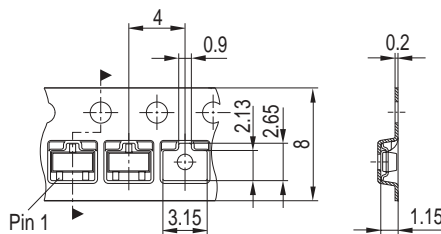


Marking Layout (Example)

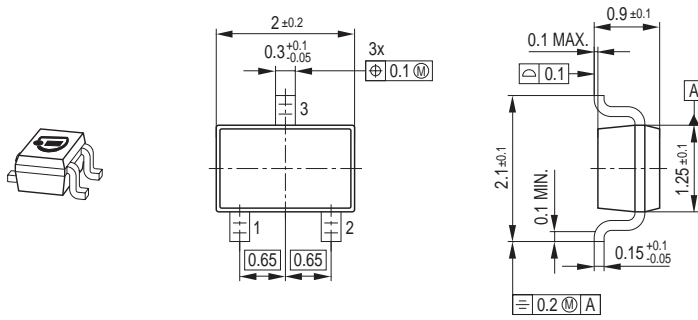


Standard Packing

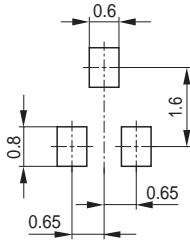
Reel ø180 mm = 3.000 Pieces/Reel  
 Reel ø330 mm = 10.000 Pieces/Reel



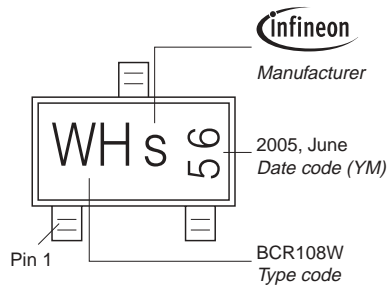
Package Outline



Foot Print

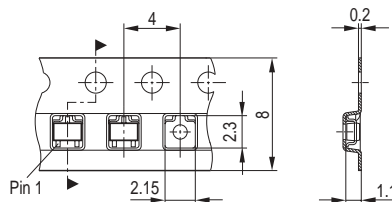


Marking Layout (Example)



Standard Packing

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



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