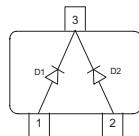
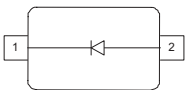


### Silicon Tuning Diodes

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

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

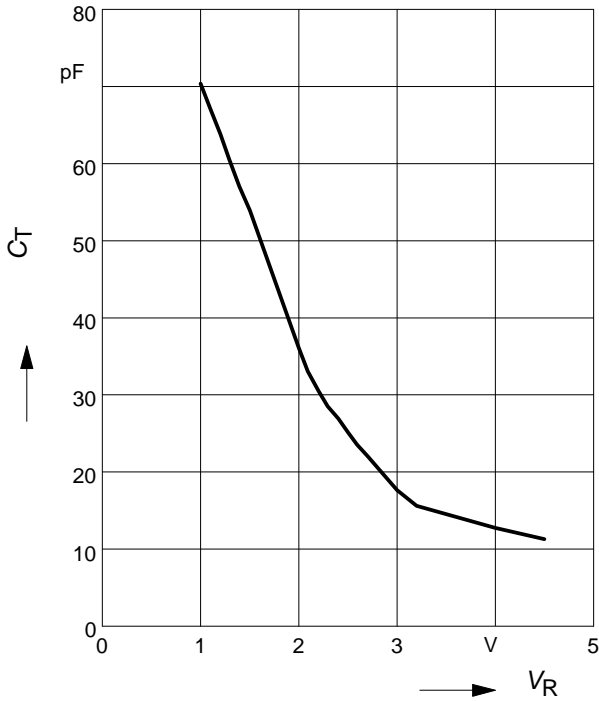
$C_T$ /groups	01	02
$C_{1V}$ min	66pF	68.5pF
$C_{1V}$ max	69pF	71.5pF

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

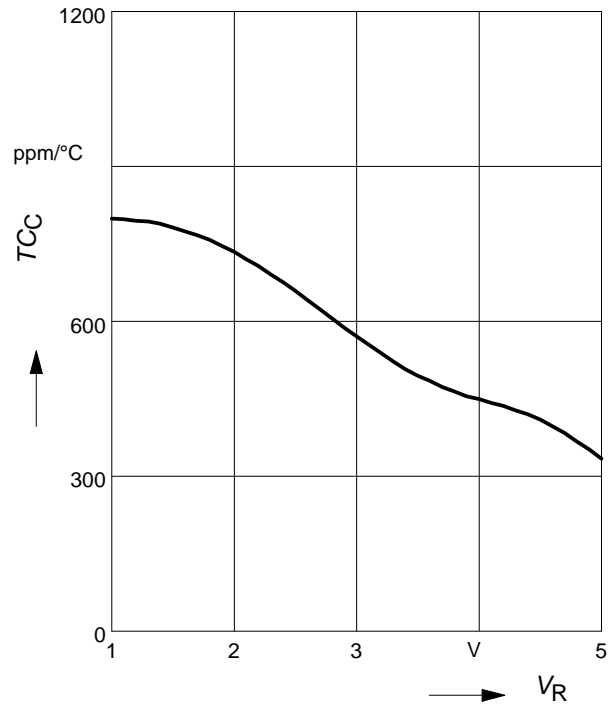
No direct order of  $C_T$  groups possible

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

$f = 1\text{MHz}$

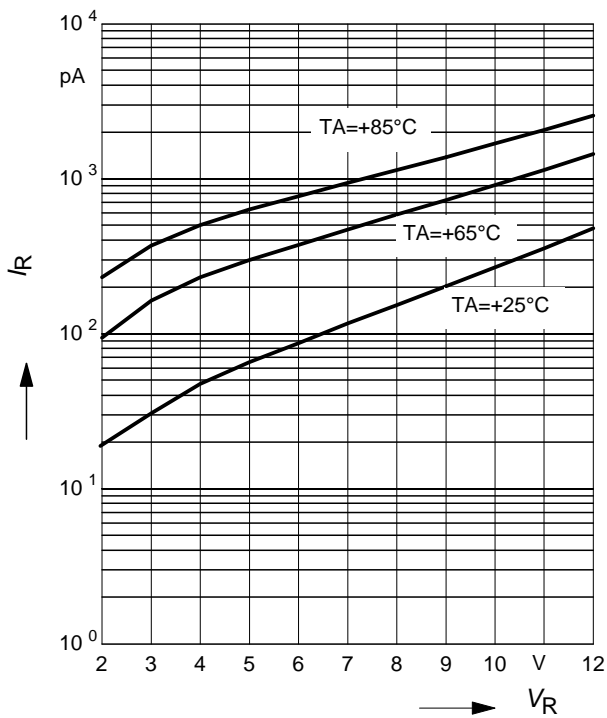


**Temperature coefficient of the diode capacitance  $T_{CC} = f(V_R)$**

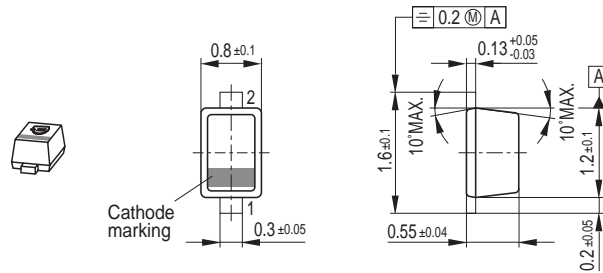


**Reverse current  $I_R = f(V_R)$**

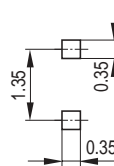
$T_A = \text{Parameter}$



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



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

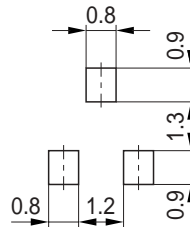
1) New Marking Layout for SC75, implemented at October 2005.

Package Outline

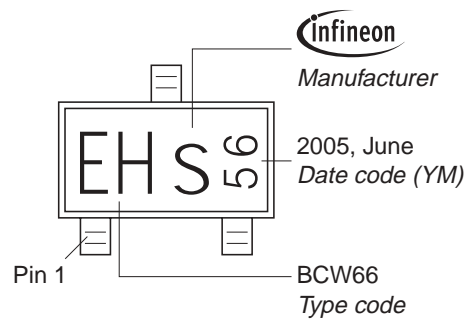


1) Lead width can be 0.6 max. in dambar area

Foot Print

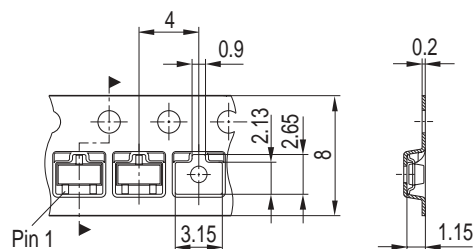


Marking Layout (Example)

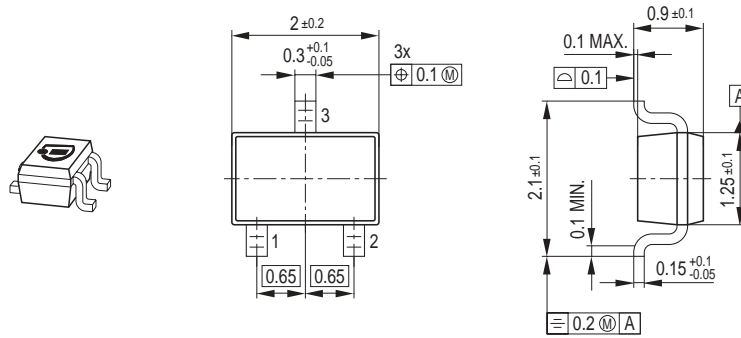


Standard Packing

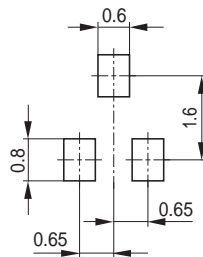
Reel  $\varnothing$ 180 mm = 3.000 Pieces/Reel  
 Reel  $\varnothing$ 330 mm = 10.000 Pieces/Reel



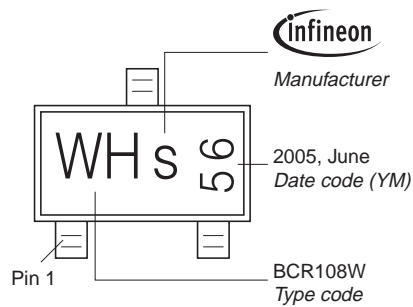
Package Outline



Foot Print

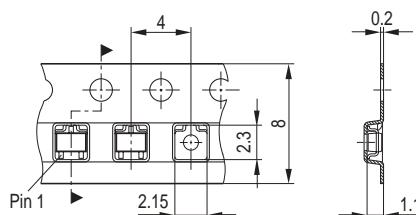


Marking Layout (Example)



Standard Packing

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



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