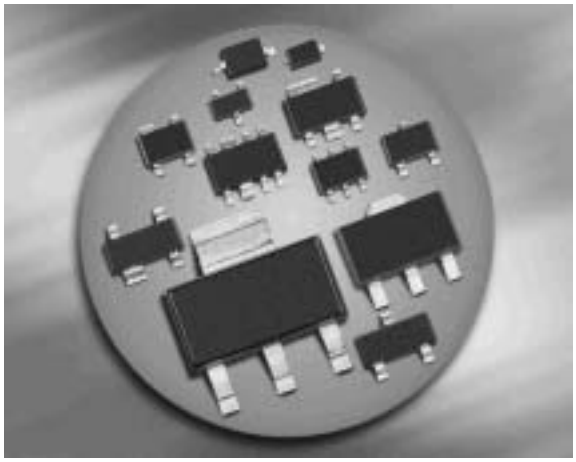
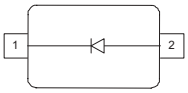
Silicon Tuning Diodes



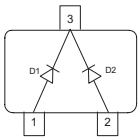
- High capacitance ratio
- High Q hyperabrupt tuning diode
- Low series resistance
- Designed for low tuning voltage operation for VCO's in mobile communications equipment
- Very low capacitance spread
- Pb-free (RoHS compliant) package[1)]
- Qualified according AEC Q101

AEC Qualified RoHS

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°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	

[1]Pb-containing package may be available upon special request

Electrical Characteristics at T_A = 25°C, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Reverse current	I_R				nA
V_R = 10 V		-	-	20	
V_R = 10 V, T_A = 65 °C		-	-	200	
AC Characteristics					
Diode capacitance[1)]	C_T				pF
V_R = 1 V, f = 1 MHz		66	68.7	71.5	
V_R = 2 V, f = 1 MHz		33	35.4	38	
V_R = 3 V, f = 1 MHz		19.7	20.95	22.2	
V_R = 4.5 V, f = 1 MHz		12	12.7	13.5	
Capacitance ratio	$C_{T1}/C_{T4.5}$	5	5.41	-	
V_R = 1 V, V_R = 4.5 V					
Series resistance	r_S	-	0.25	0.4	Ω
V_R = 1 V, f = 470 MHz					

[1]Capacitance groups at 1V, coded 01; 02 (only BBY66-05)

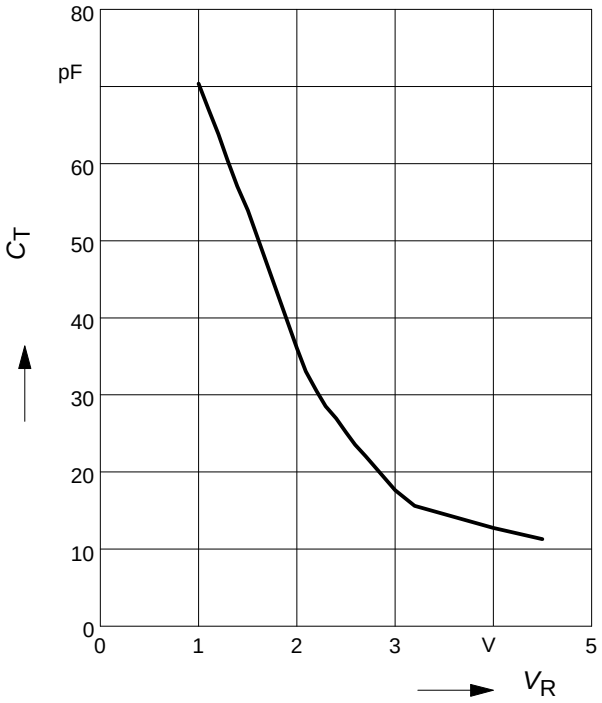
C_T/groups		01	02
C_{1V}	min	66pF	68.5pF
C_{1V}	max	69pF	71.5pF

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

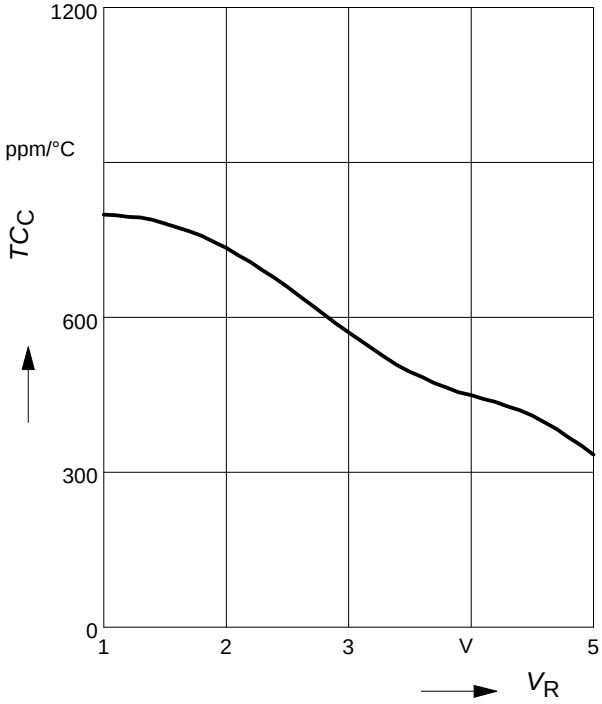
No direct order of C_T groups possible

Diode capacitance $C_T = f(V_R)$

f = 1MHz

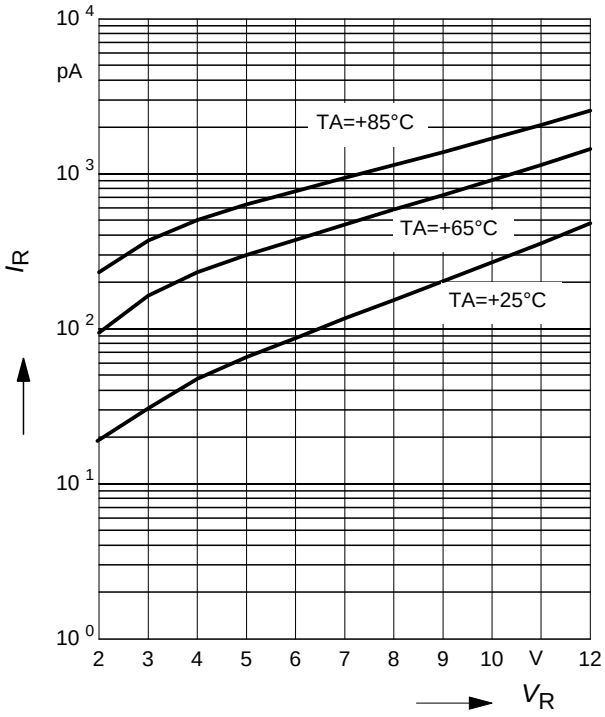


Temperature coefficient of the diode capacitance $T_{Cc} = f(V_R)$

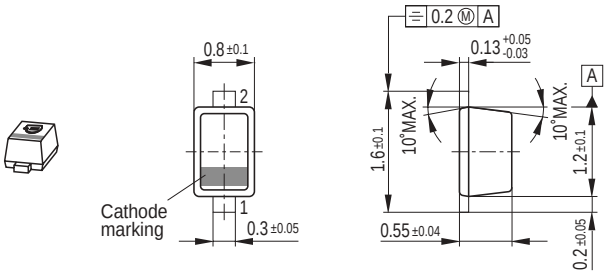


Reverse current $I_R = f(V_R)$

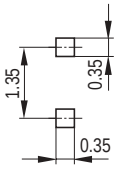
T_A = Parameter



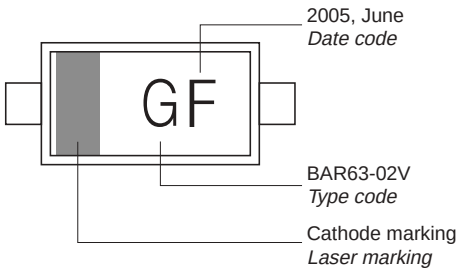
Package Outline



Foot Print

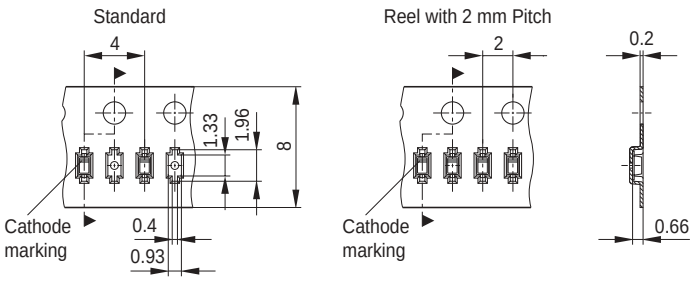


Marking Layout (Example)



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

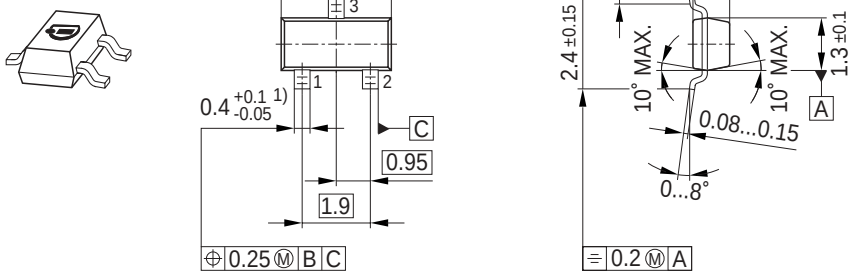


Date Code marking for discrete packages with one digit (SCD80, SC79, SC75[1)]) CES-Code

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

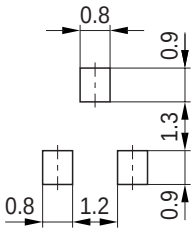
1) New Marking Layout for SC75, implemented at October 2005.

Package Outline

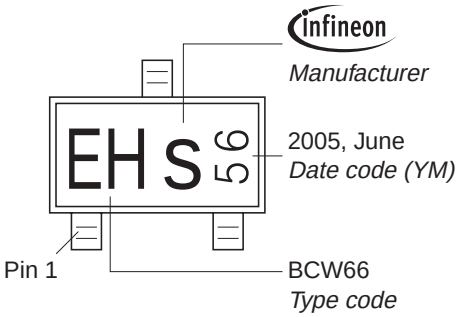


1) Lead width can be 0.6 max. in dambar area

Foot Print

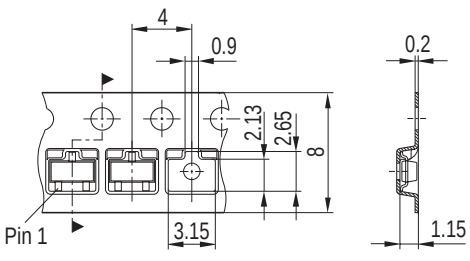


Marking Layout (Example)

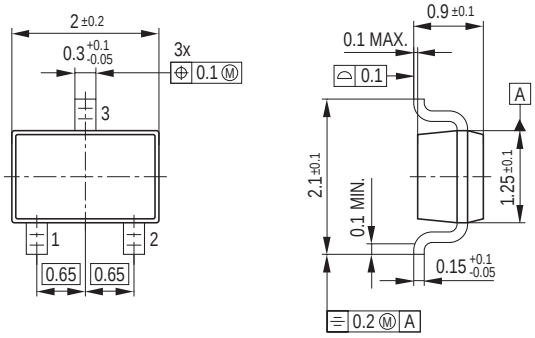


Standard Packing

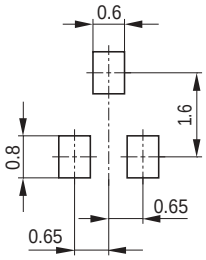
Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



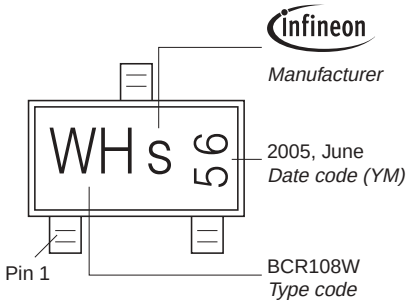
Package Outline



Foot Print



Marking Layout (Example)



Standard Packing

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