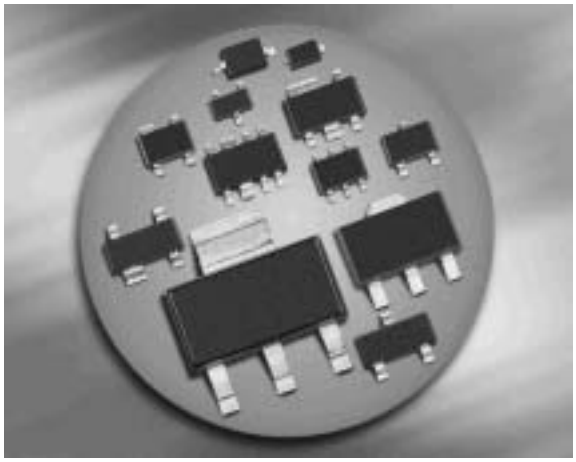
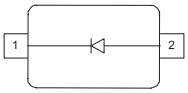
Silicon Tuning Diodes



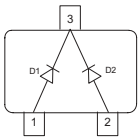
- High capacitance ratio
- High Q hyperabrupt tuning diode
- Low series resistance
- Designed for low tuning voltage operation for VCO's in mobile communications equipment
- Very low capacitance spread
- Pb-free (RoHS compliant) package[1)]
- Qualified according AEC Q101

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)

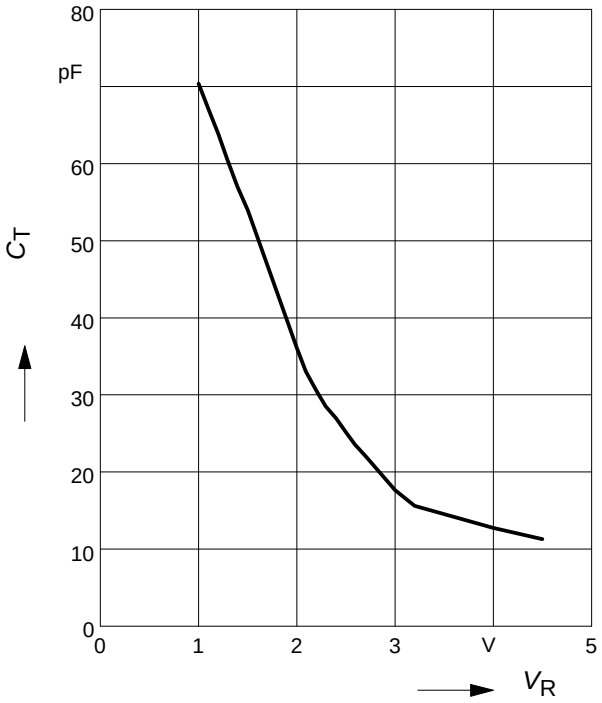
C_T/groups		01	02
C_{1V}	min	66pF	68.5pF
C_{1V}	max	69pF	71.5pF

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

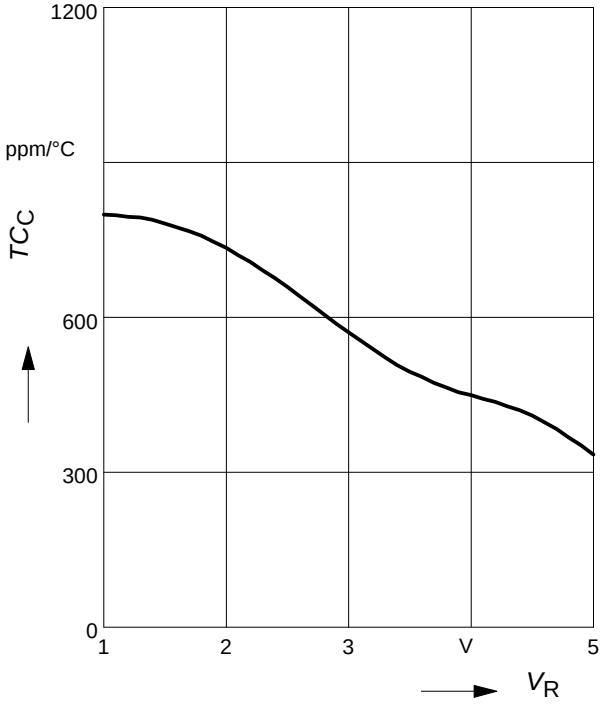
No direct order of C_T groups possible

Diode capacitance $C_T = f(V_R)$

f = 1MHz

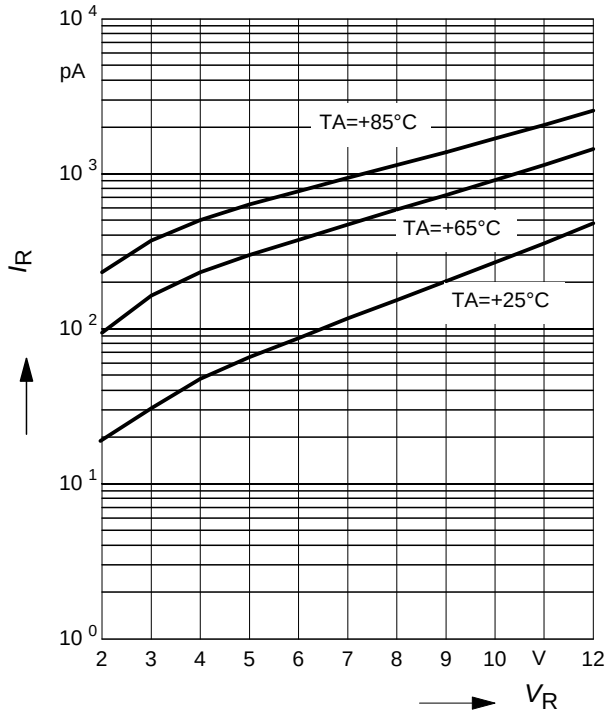


Temperature coefficient of the diode capacitance $T_{Cc} = f(V_R)$

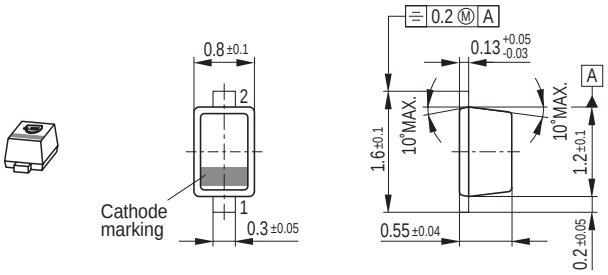


Reverse current $I_R = f(V_R)$

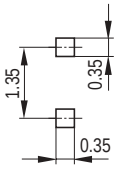
T_A = Parameter



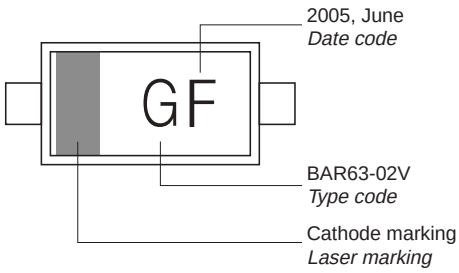
Package Outline



Foot Print

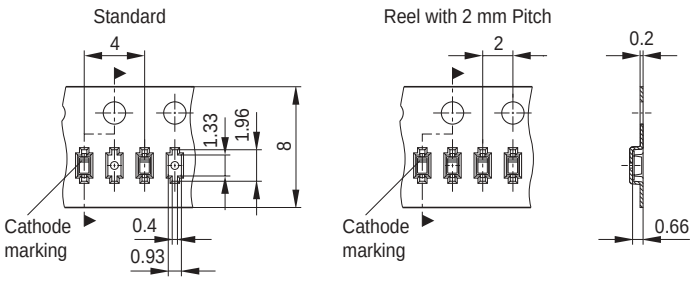


Marking Layout (Example)



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

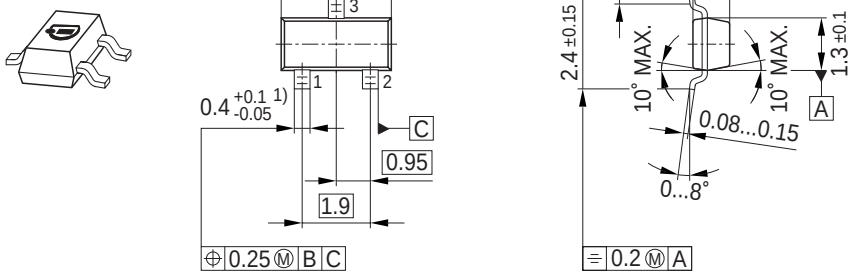


Date Code marking for discrete packages with one digit (SCD80, SC79, SC75[1)]) CES-Code

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

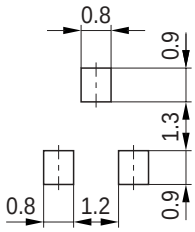
1) New Marking Layout for SC75, implemented at October 2005.

Package Outline

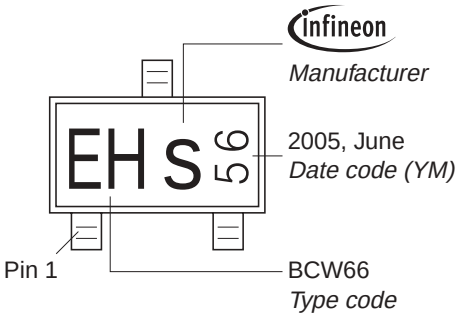


1) Lead width can be 0.6 max. in dambar area

Foot Print



Marking Layout (Example)



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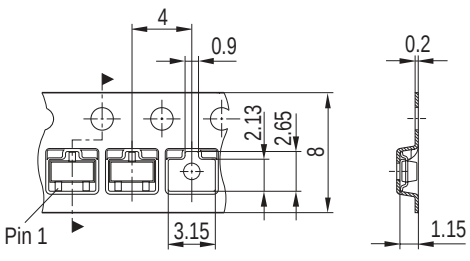
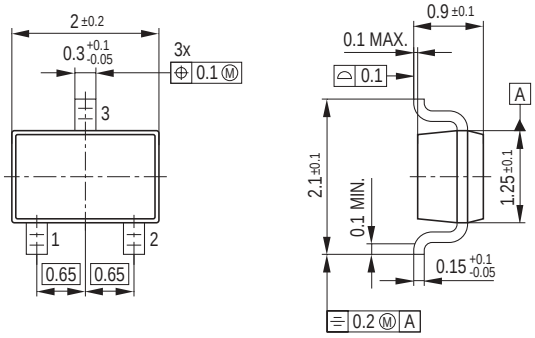


Package Outline



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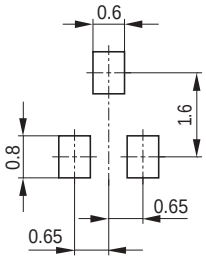
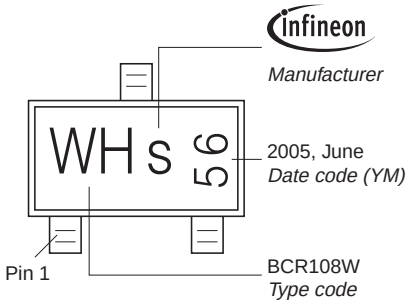


Marking Layout (Example)



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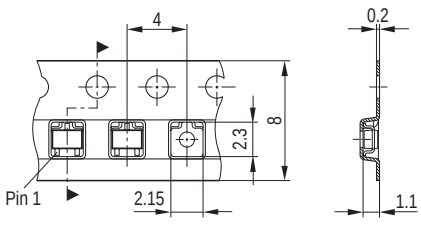

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