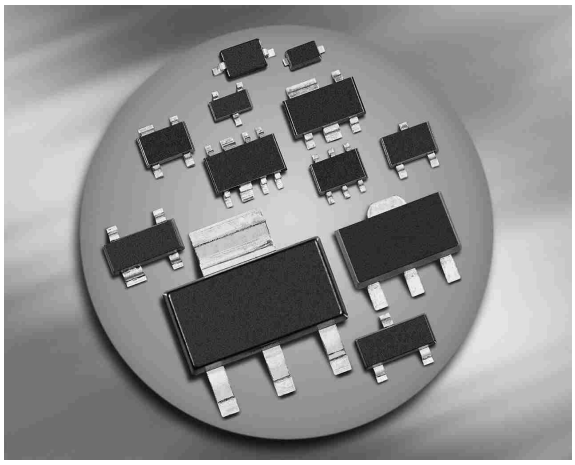
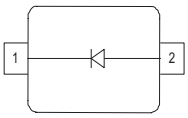
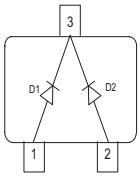
Silicon Tuning Diode

- High Q hyperabrupt tuning diode
- Designed for low tuning voltage operation
- For VCO's in mobile communications equipment
- Pb-free (RoHS compliant) package



BBY51-02L **BBY51**
BBY51-02V
BBY51-02W
BBY51-03W





Type	Package	Configuration	Marking
BBY51	SOT23	common cathode	S3s
BBY51-02L	TSLP-2-1	single, leadless	II
BBY51-02V	SC79	single	f
BBY51-02W*	SCD80	single	II
BBY51-03W	SOD323	single	white H

* Not for new design

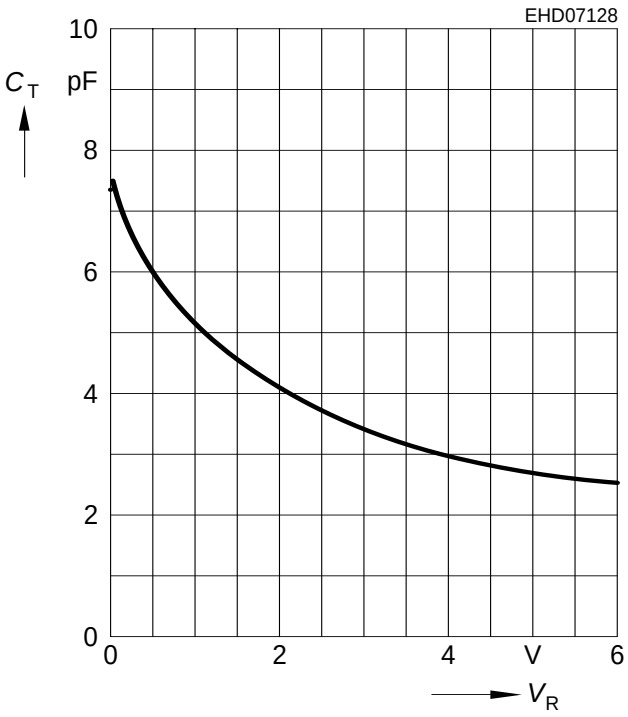
Maximum Ratings at T_A = 25 °C, unless otherwise specified

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	7	V
Forward current	I_F	20	mA
Operating temperature range	T_{op}	-55 ...125	°C
Storage temperature	T_{stg}	-55 ...150	

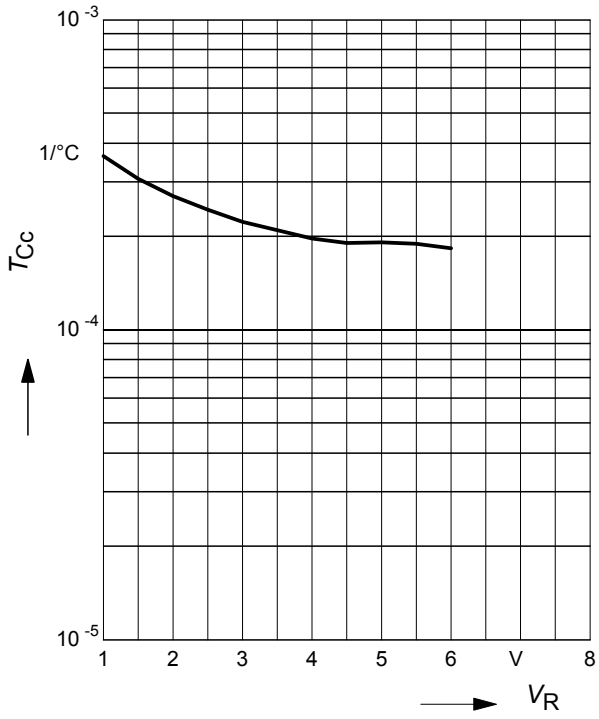
Electrical Characteristics at T_A = 25 °C, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Reverse current	I_R				nA
V_R = 6 V		-	-	10	
V_R = 6 V, T_A = 85 °C		-	-	200	
AC Characteristics					
Diode capacitance	C_T				pF
V_R = 1 V, f = 1 MHz		5.05	5.4	5.75	
V_R = 2 V, f = 1 MHz		3.4	4.2	5.2	
V_R = 3 V, f = 1 MHz		2.7	3.5	4.6	
V_R = 4 V, f = 1 MHz		2.5	3.1	3.7	
Capacitance ratio	C_{T1}/C_{T4}	1.55	1.75	2.2	
V_R = 1 V, V_R = 4 V, f = 1 MHz					
Capacitance difference	C_{1V}-C_{3V}	1.4	1.78	2.2	pF
V_R = 1 V, V_R = 3 V, f = 1 MHZ					
Capacitance difference	C_{3V}-C_{4V}	0.3	0.5	0.7	
V_R = 3 V, V_R = 4 V, f = 1 MHZ					
Series resistance	r_S	-	0.37	-	Ω
V_R = 1 V, f = 1 GHz					

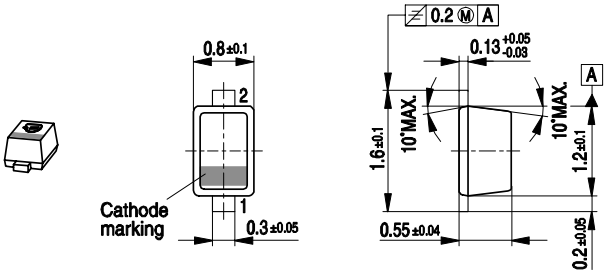
Diode capacitance $C_T = f(V_R)$
f = 1MHz



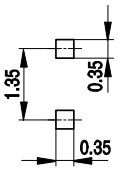
Temperature coefficient of the diode capacitance $T_{Cc} = f(V_R)$



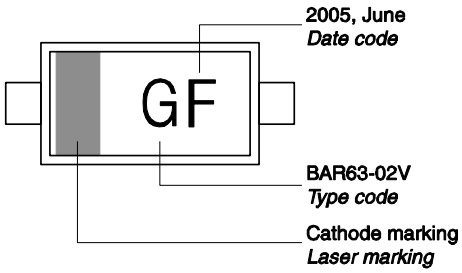
Package Outline



Foot Print

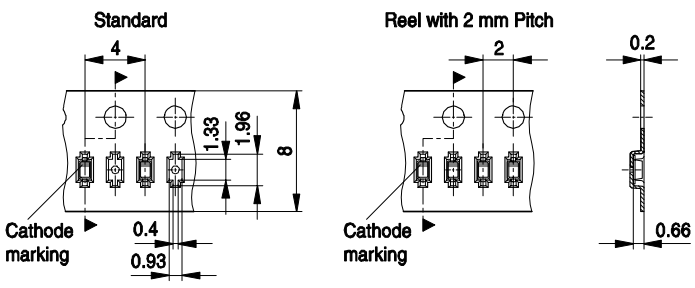


Marking Layout (Example)

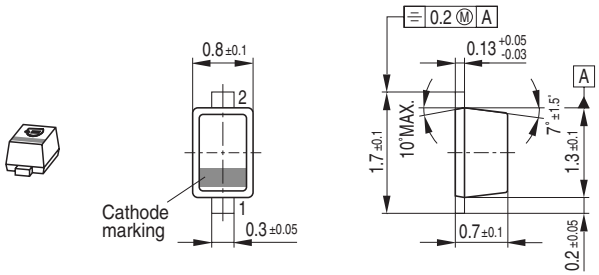


Standard Packing

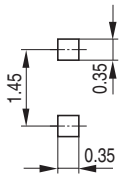
Reel ø180 mm = 3.000 Pieces/Reel
Reel ø180 mm = 8.000 Pieces/Reel (2 mm Pitch)
Reel ø330 mm = 10.000 Pieces/Reel



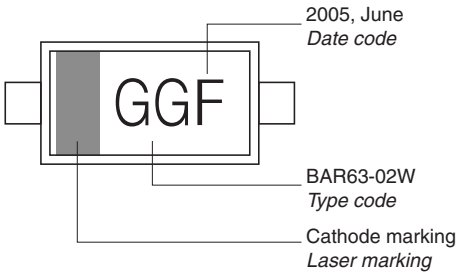
Package Outline



Foot Print

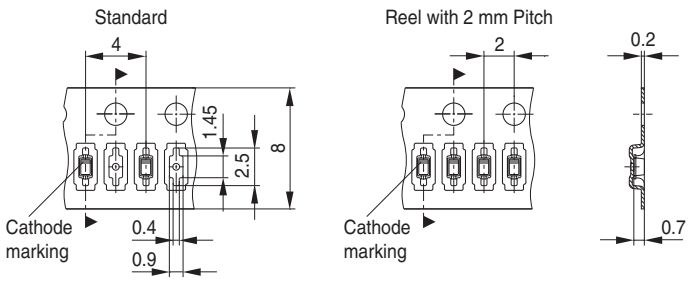


Marking Layout (Example)



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[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.

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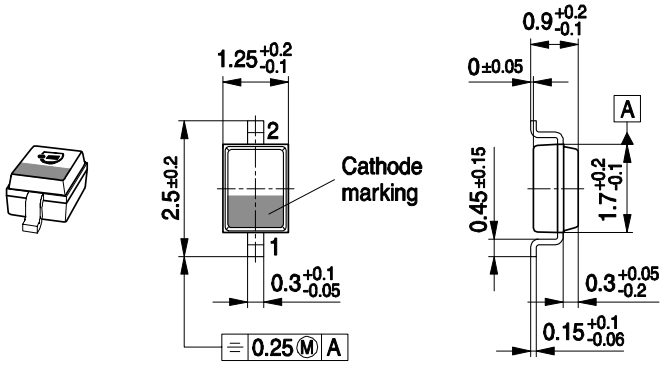
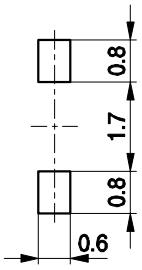
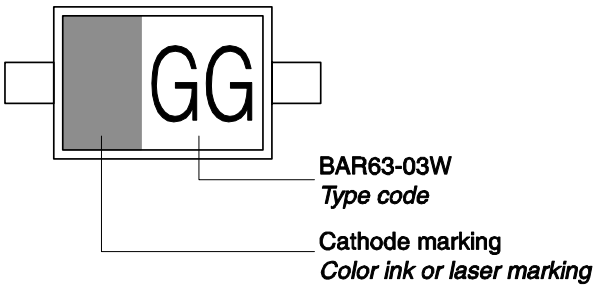
Package Outline



Foot Print

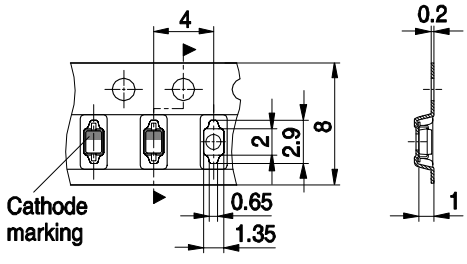


Marking Layout (Example)

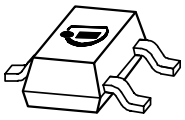


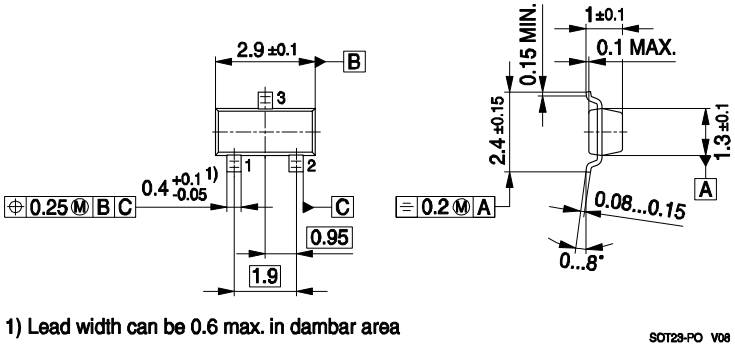
Standard Packing

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



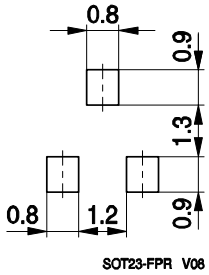
Package Outline



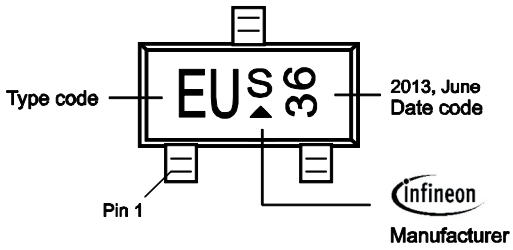


1) Lead width can be 0.6 max. in dambar area

Foot Print

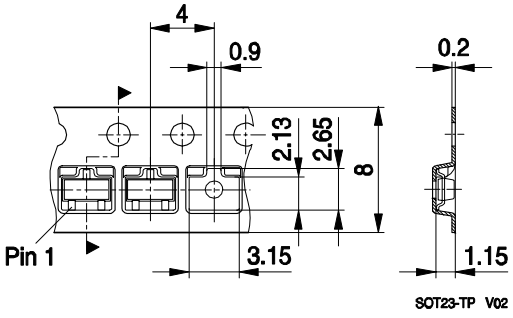


Marking Layout

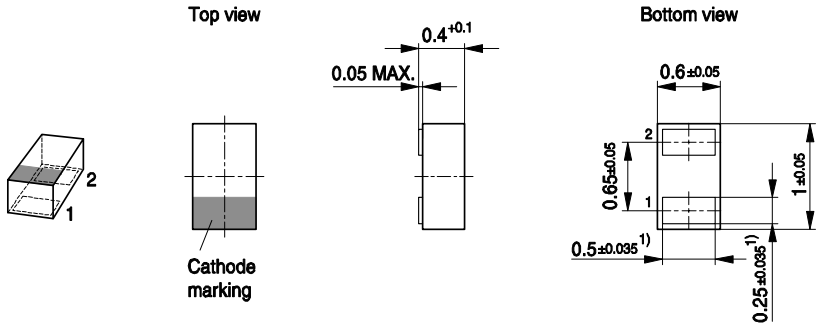


Standard Packing

Reel o 180 mm: 3.000 Pieces / Reel
Reel o 330 mm = 10.000 Pieces / Reel



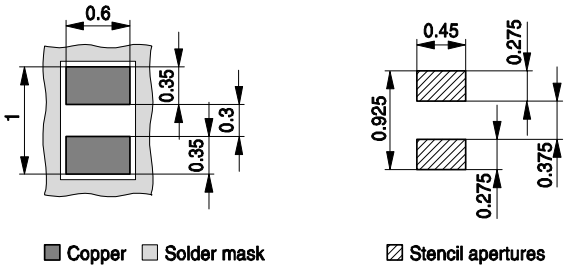
Package Outline



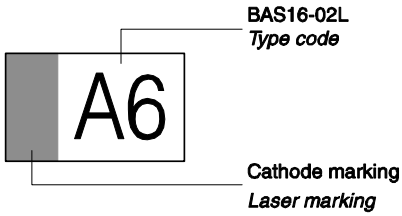
1) Dimension applies to plated terminal

Foot Print

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

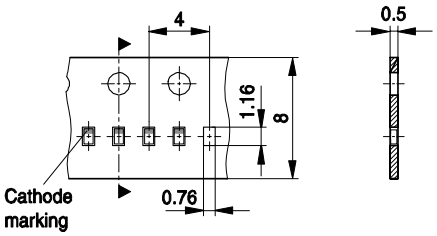


Marking Layout (Example)



Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel
Reel ø330 mm = 50.000 Pieces/Reel (optional)



Edition 2009-11-16

Published by
Infineon Technologies AG
81726 Munich, Germany

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