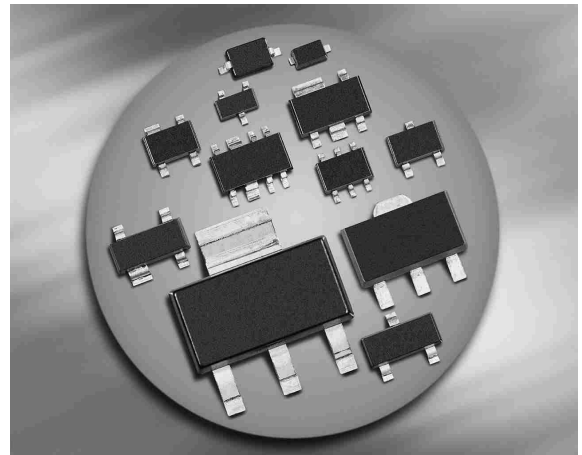


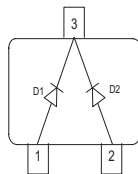
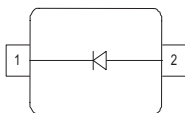
Silicon Tuning Diode

- 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
BBY51-02V
BBY51-02W
BBY51-03W

BBY51



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

* Not for new design

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

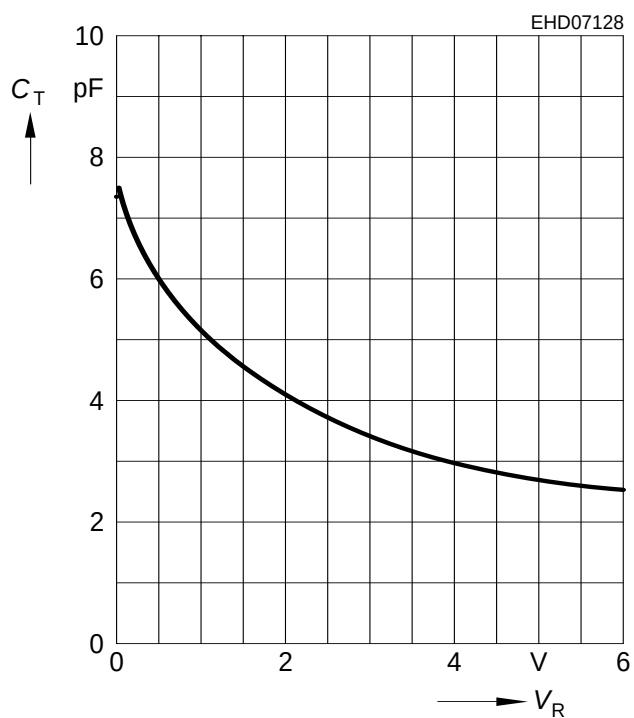
Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	7	V
Forward current	I_F	20	mA
Operating temperature range	T_{op}	-55 ... 125	$^{\circ}\text{C}$
Storage temperature	T_{stg}	-55 ... 150	

Electrical Characteristics at $T_A = 25\text{ °C}$, unless otherwise specified

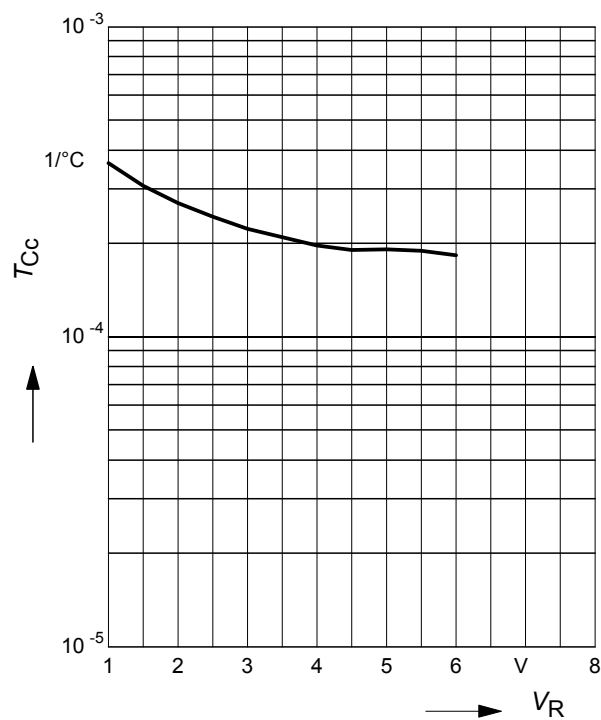
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Reverse current	I_R				nA
$V_R = 6\text{ V}$		-	-	10	
$V_R = 6\text{ V}, T_A = 85\text{ }^{\circ}\text{C}$		-	-	200	
AC Characteristics					
Diode capacitance	C_T				pF
$V_R = 1\text{ V}, f = 1\text{ MHz}$		5.05	5.4	5.75	
$V_R =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

Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$



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



[illegible]

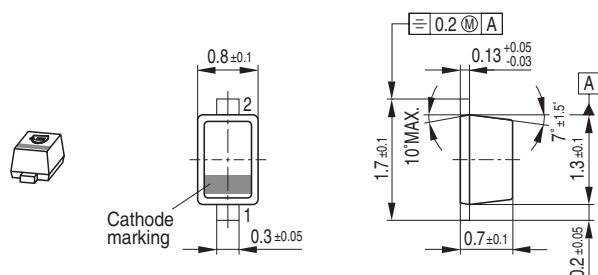
2005, June
Date code

GF

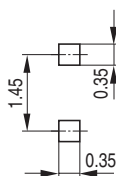
BAR63-02V
Type code

Cathode marking
Laser marking

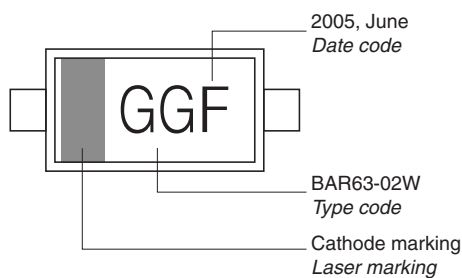
Package Outline



Foot Print

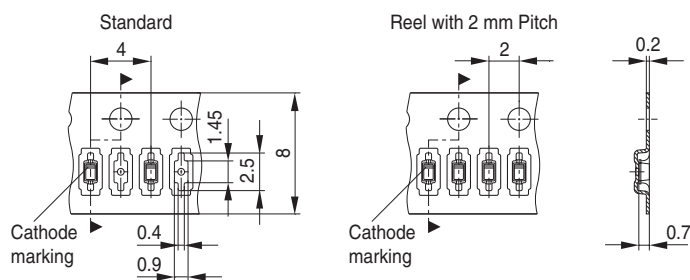


Marking Layout (Example)



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, SC75¹⁾) 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.

Technical drawing of the 025A tube pin, showing dimensions in millimeters (mm) and tolerances.

Top View Dimensions:

- Overall width: 2.5 ± 0.2
- Central pin diameter: 0.3 ± 0.05
- Cathode marking area width: $1.25^{+0.2}_{-0.1}$
- Pin diameter: $0.9^{+0.2}_{-0.1}$

Side View Dimensions:

- Base height: 0.45 ± 0.15
- Pin height: $1.7^{+0.2}_{-0.1}$
- Base width: 0.3 ± 0.05
- Pin diameter at base: $0.15^{+0.1}_{-0.06}$

Labels:

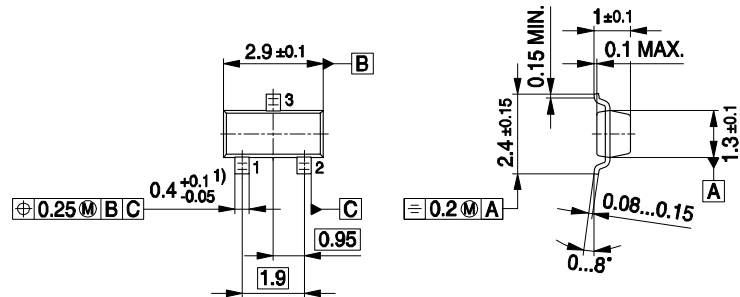
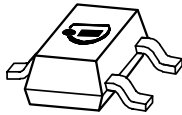
- Cathode marking
- 0.25 A

BAR63-03W
Type code

Cathode marking
Color ink or laser marking

Technical drawing of a cathode marking. The drawing shows a side view and a cross-section. The side view has a total width of 4, a total height of 8, and a central hole with a diameter of 2.9. There are two smaller holes on either side, each with a diameter of 2. The distance between the centers of the two side holes is 1.35. The distance from the center of the central hole to the right edge is 0.65. The cross-section shows a thickness of 0.2 and a height of 1.

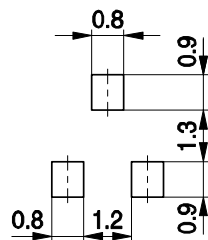
Package Outline



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

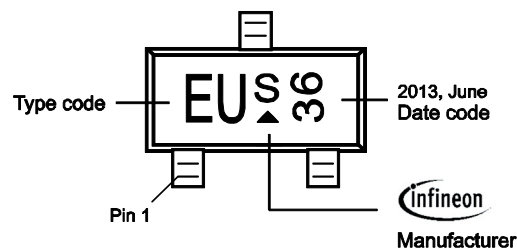
SOT23-PO V08

Foot Print



SOT23-FPR V08

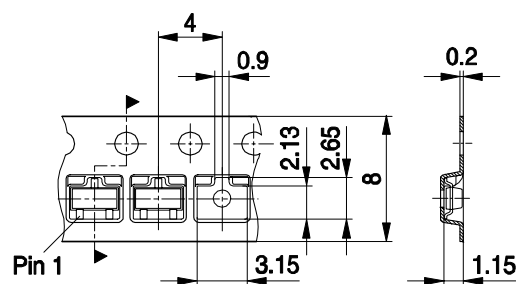
Marking Layout



Standard Packing

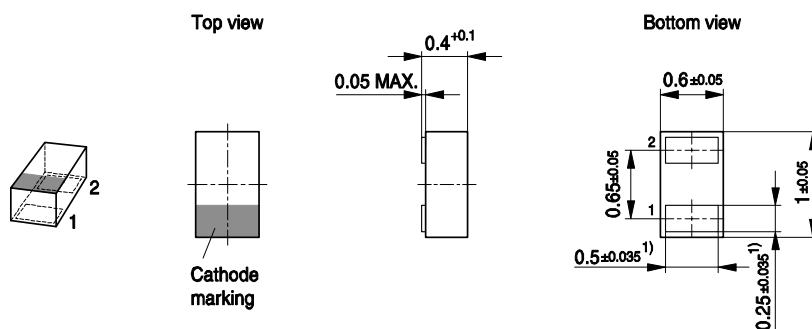
Reel o 180 mm: 3.000 Pieces / Reel

Reel o 330 mm = 10.000 Pieces / Reel



SOT23-TP V02

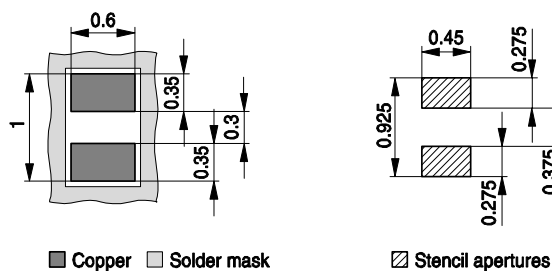
Package Outline



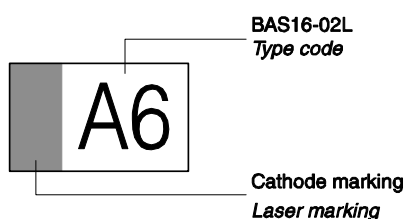
1) Dimension applies to plated terminal

Foot Print

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



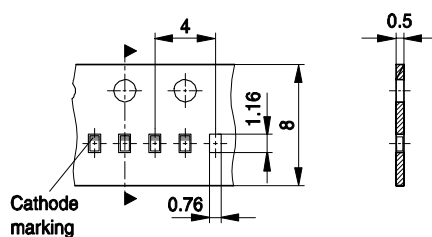
Marking Layout (Example)



Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel

Reel ø330 mm = 50.000 Pieces/Reel (optional)



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