



**THE DATASHEET OF  
BBY56-03W**

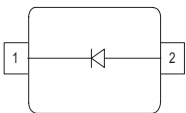
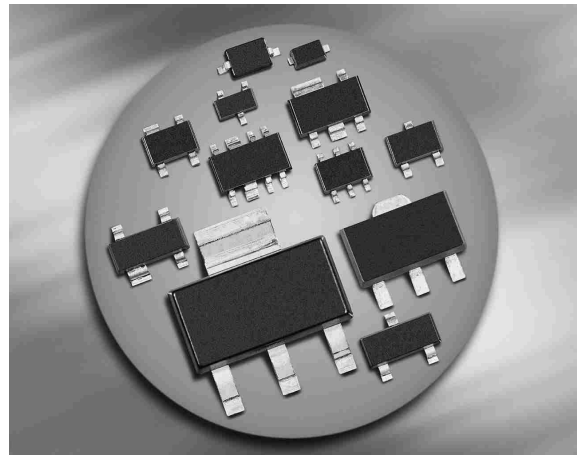


**Silicon Tuning Diode**

- Excellent linearity
- 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



**BBY56-02V**  
**BBY56-02W**  
**BBY56-03W**



Type	Package	Configuration	Marking
BBY56-02V	SC79	single	9
BBY56-02W*	SCD80	single	66
BBY56-03W	SOD323	single	red 6

\* Not for new design

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

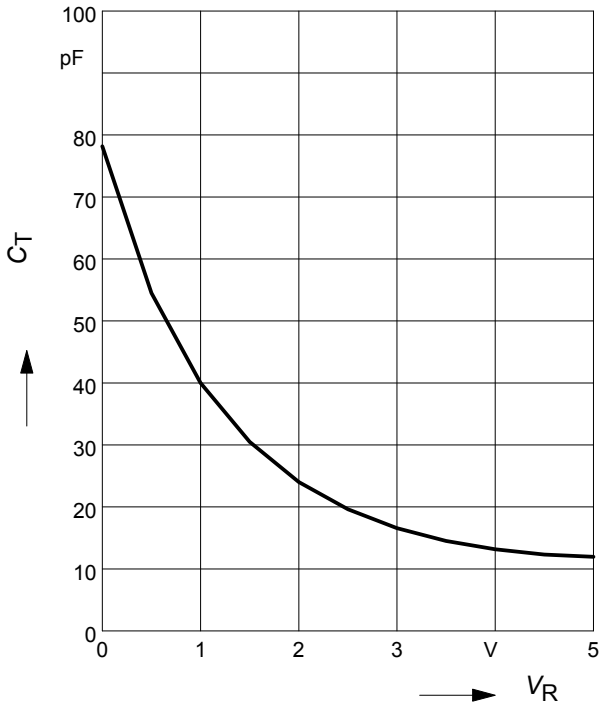
Parameter	Symbol	Value	Unit
Diode reverse voltage	$V_R$	10	V
Forward current	$I_F$	20	mA
Operating temperature range	$T_{op}$	-55 ... 150	°C
Storage temperature	$T_{Stg}$	-55 ... 150	

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC Characteristics</b>					
Reverse current	$I_R$				nA
$V_R = 6\text{ V}$		-	-	5	
$V_R = 6\text{ V}, T_A = 85\text{ }^\circ\text{C}$		-	-	100	
<b>AC Characteristics</b>					
Diode capacitance	$C_T$				pF
$V_R = 1\text{ V}, f = 1\text{ MHz}$		37	40	43	
$V_R = 2\text{ V}, f = 1\text{ MHz}$		22	-	25	
$V_R = 3\text{ V}, f = 1\text{ MHz}$		14.8	15.8	16.8	
$V_R = 4\text{ V}, f = 1\text{ MHz}$		-	12.1	-	
Capacitance ratio	$C_{T1}/C_{T3}$				
$V_R = 1\text{ V}, V_R = 3\text{ V}, f = 1\text{ MHz}$		2.15	2.53	-	
$V_R = 1\text{ V}, V_R = 4\text{ V}, f = 1\text{ MHz}$		-	3.3	-	
Series resistance	$r_S$				$\Omega$
$V_R = 1\text{ V}, f = 470\text{ MHz}$		-	0.25	-	

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

$f = 1\text{MHz}$



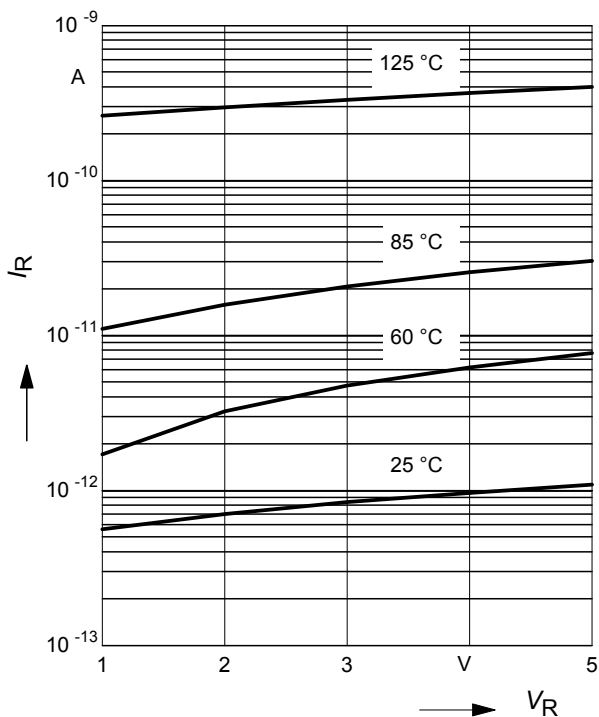
**Temperature coefficient of the diode capacitance  $T_{Cc} = f(V_R)$**

$f = 1\text{ MHz}$



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

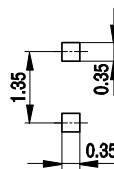
$T_A = \text{Parameter}$



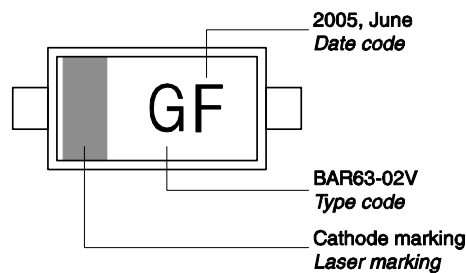
### Package Outline



### Foot Print

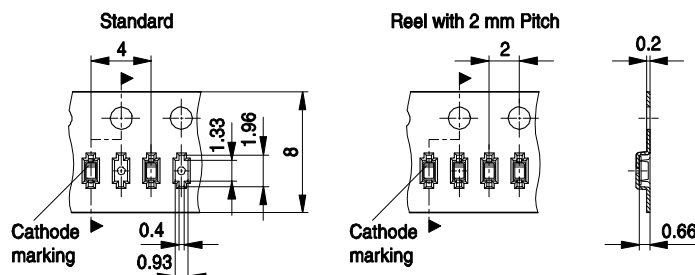


### Marking Layout (Example)



### 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



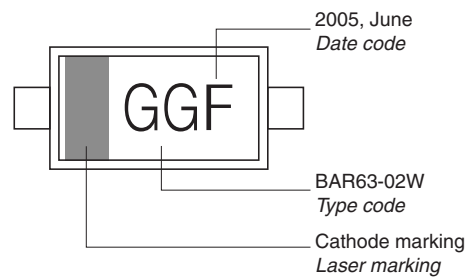
Package Outline



Foot Print



Marking Layout (Example)



Standard Packing

Reel  $\varnothing$ 180 mm = 3.000 Pieces/Reel  
 Reel  $\varnothing$ 180 mm = 8.000 Pieces/Reel (2 mm Pitch)  
 Reel  $\varnothing$ 330 mm = 10.000 Pieces/Reel

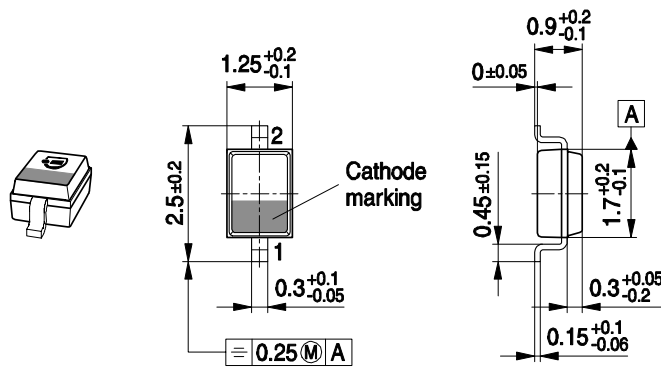


Date Code marking for discrete packages with one digit (SCD80, SC79, SC75<sup>1)</sup>) CES-Code

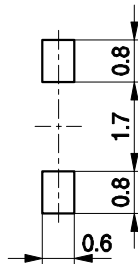
Month	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
01	a	p	A	P	a	p	A	P	a	p	A	P
02	b	q	B	Q	b	q	B	Q	b	q	B	Q
03	c	r	C	R	c	r	C	R	c	r	C	R
04	d	s	D	S	d	s	D	S	d	s	D	S
05	e	t	E	T	e	t	E	T	e	t	E	T
06	f	u	F	U	f	u	F	U	f	u	F	U
07	g	v	G	V	g	v	G	V	g	v	G	V
08	h	x	H	X	h	x	H	X	h	x	H	X
09	j	y	J	Y	j	y	J	Y	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



### Foot Print



### Marking Layout (Example)



### Standard Packing

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



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