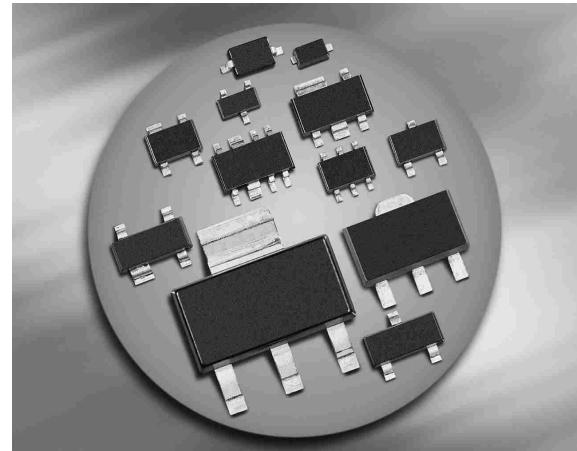
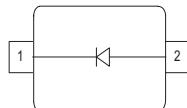


Silicon Tuning Diode

- High Q hyperabrupt tuning diode
- Very low capacitance spread
- Designed for low tuning voltage operation for VCO's in mobile communications equipment
- For low frequency control elements such as TCXOS and VCXOS
- High capacitance ratio and good C-V linearity
- Pb-free (RoHS compliant) package



BBY65-02V



Type	Package	Configuration	L_S (nH)	Marking
BBY65-02V	SC79	single	0.6	F

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

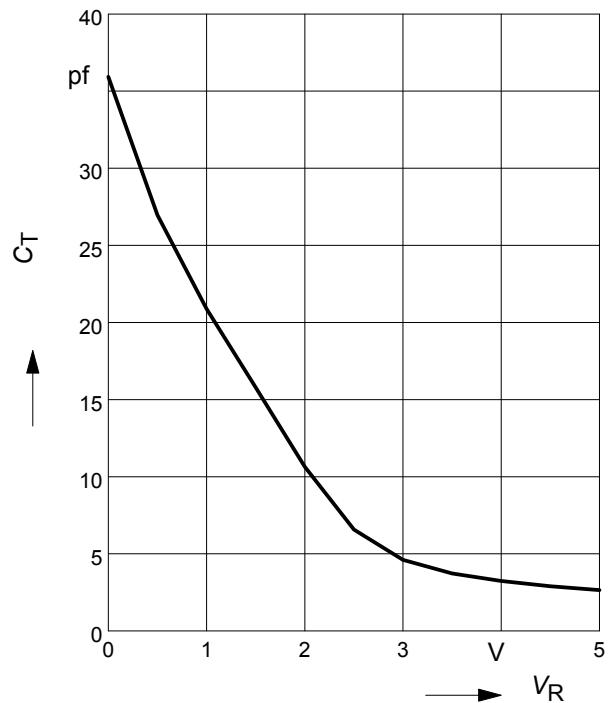
Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	15	V
Forward current	I_F	50	mA
Operating temperature range	T_{op}	-55 ... 150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 ... 150	

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

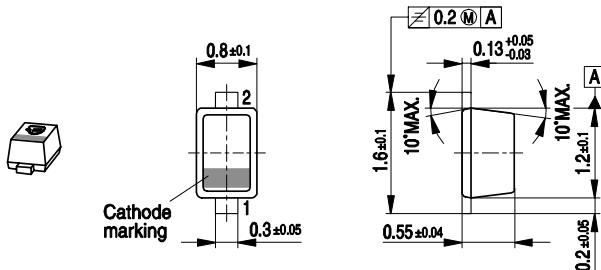
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Reverse current $V_R = 10 \text{ V}$	I_R	-	-	10	nA
$V_R = 10 \text{ V}, T_A = 85^\circ\text{C}$		-	-	100	
AC Characteristics					
Diode capacitance $V_R = 0.3 \text{ V}, f = 1 \text{ MHz}$	C_T	28.2	29.5	30.8	pF
$V_R = 1 \text{ V}, f = 1 \text{ MHz}$		-	20.25	-	
$V_R = 2 \text{ V}, f = 1 \text{ MHz}$		-	9.8	-	
$V_R = 3 \text{ V}, f = 1 \text{ MHz}$		-	4.45	-	
$V_R = 4.7 \text{ V}, f = 1 \text{ MHz}$		2.6	2.7	2.8	
Capacitance ratio $V_R = 0.3 \text{ V}, V_R = 4.7 \text{ V}$	$C_{T0.3}/C_{T4.7}$	10	10.9	-	pF
Capacitance ratio $V_R = 1 \text{ V}, V_R = 3 \text{ V}$	C_{T1}/C_{T3}	-	4.55	-	pF
Series resistance $V_R = 1 \text{ V}, f = 470 \text{ MHz}$	r_S	-	0.6	0.9	Ω

Diode capacitance $C_T = f (V_R)$

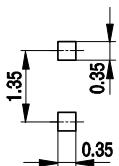
$f = 1\text{MHz}$



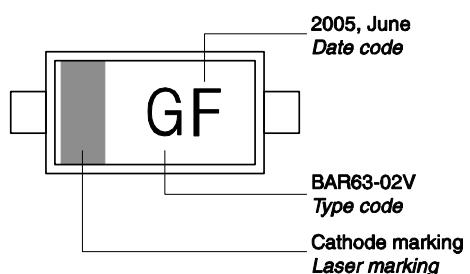
Package Outline



Foot Print

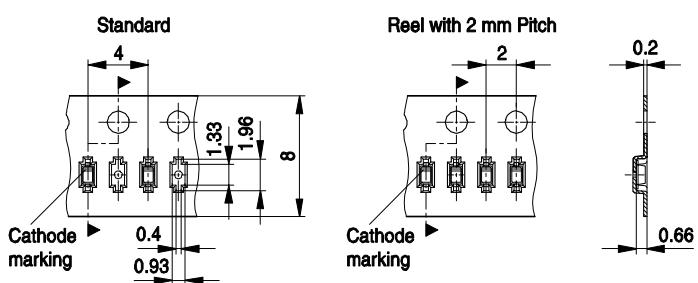


Marking Layout (Example)



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.

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