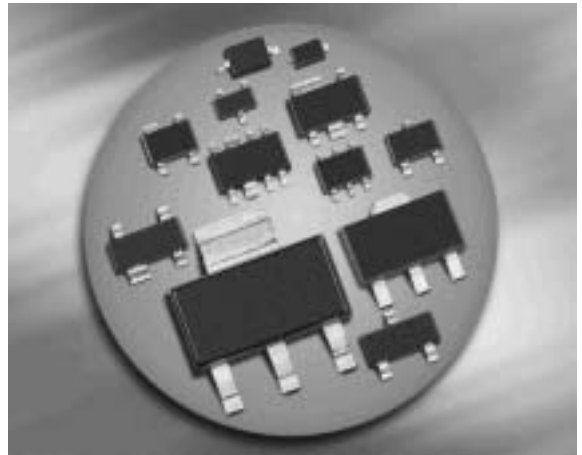
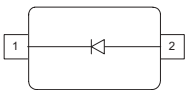


### Silicon Tuning Diode

- High Q hyperabrupt tuning diode
- Designed for low tuning voltage operation for VCO's in mobile communications equipment
- For control elements as TCXOS and VCXOS
- High capacitance ratio and good C-V linearity
- Pb-free (RoHS compliant) package<sup>1)</sup>
- Qualified according AEC Q101



### BBY59-02V



Type	Package	Configuration	$L_S$ (nH)	Marking
BBY59-02V	SC79	single	0.6	RR

**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	°C
Storage temperature	$T_{stg}$	-55 ... 150	

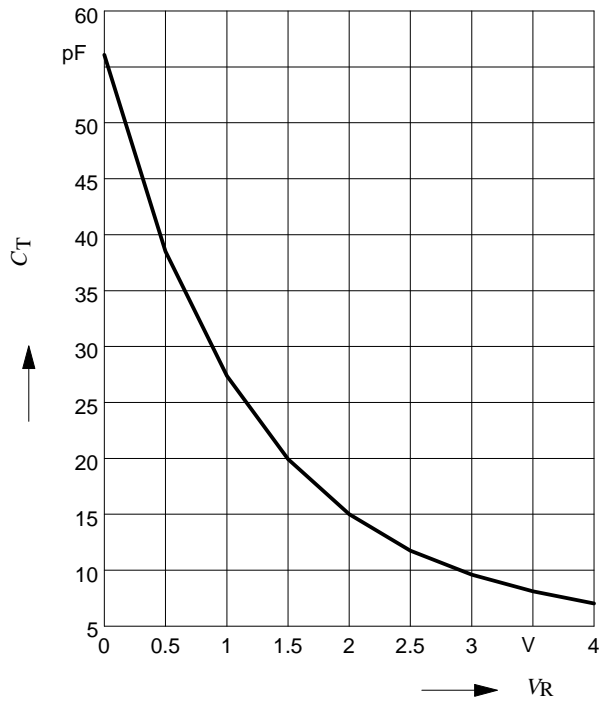
<sup>1)</sup>Pb-containing package may be available upon special request

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

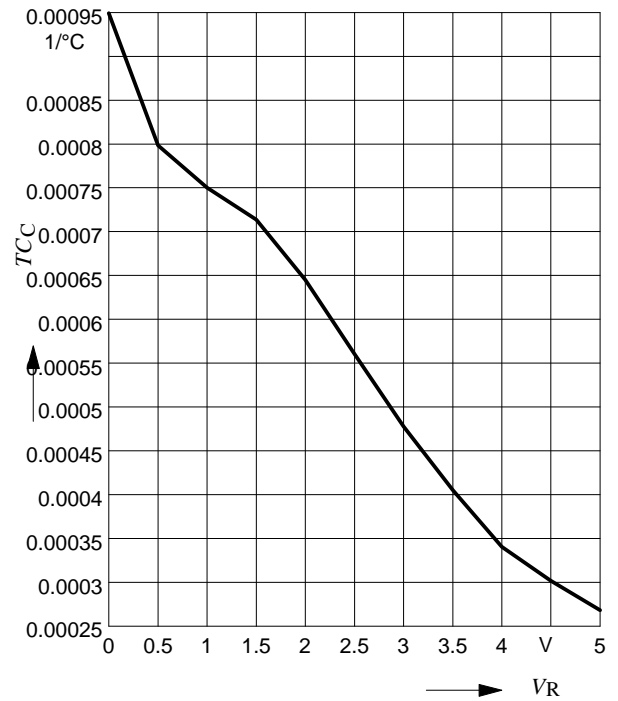
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC Characteristics</b>					
Reverse current	$I_R$				nA
$V_R = 10\text{ V}$		-	-	20	
$V_R = 10\text{ V}, T_A = 85^\circ\text{C}$		-	-	100	
<b>AC Characteristics</b>					
Diode capacitance	$C_T$				pF
$V_R = 1\text{ V}, f = 1\text{ MHz}$		26,6	27.8	29	
$V_R = 2\text{ V}, f = 1\text{ MHz}$		13.6	15.3	17	
$V_R = 3\text{ V}, f = 1\text{ MHz}$		8,4	9.5	10.9	
$V_R = 4\text{ V}, f = 1\text{ MHz}$		6,1	6,95	7,8	
Capacitance ratio	$C_{T1}/C_{T4}$	3,4	4	4,6	
$V_R = 1\text{ V}, V_R = 4\text{ V}$					
Series resistance	$r_S$	-	0.45	0.7	$\Omega$
$V_R = 1\text{ V}, f = 470\text{ MHz}$					

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

$f = 1\text{MHz}$



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



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.

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