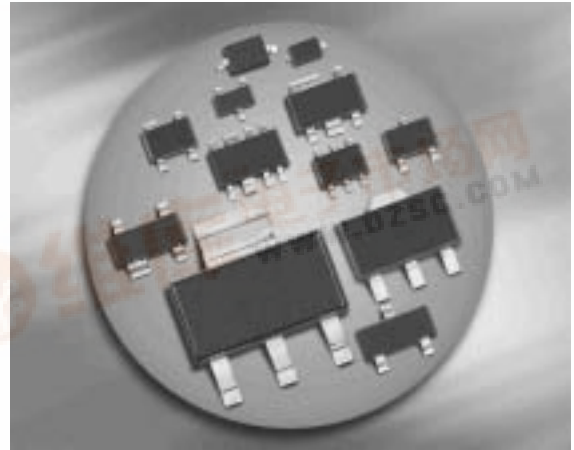




### Silicon Tuning Diodes

- Excellent linearity
- High Q hyperabrupt tuning diode
- Low series resistance
- Designed for low tuning voltage operation for VCO's in mobile communications equipment
- For low frequency control elements such as TCXOs and VCXOs
- Very low capacitance spread

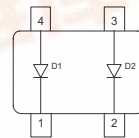
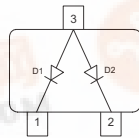
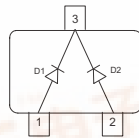
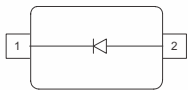


**BBY58-02L/V**  
**BBY58-02W**  
**BBY58-03W**

**BBY58-05W**

**BBY58-06W**

**BBY58-07L4**



Type	Package	Configuration	$L_S$ (nH)	Marking
BBY58-02L*	TSLP-2-1	single, leadless	0.4	88
BBY58-02V	SC79	single	0.6	8
BBY58-02W	SCD80	single	0.6	88
BBY58-03W	SOD323	single	0.6	8 yel.
BBY58-05W	SOT323	common cathode	1.4	B5s
BBY58-06W	SOT323	common anode	1.4	B6s
BBY58-07L4*	TSLP-4-4	parallel pair, leadless	0.4	B8

\*Preliminary

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

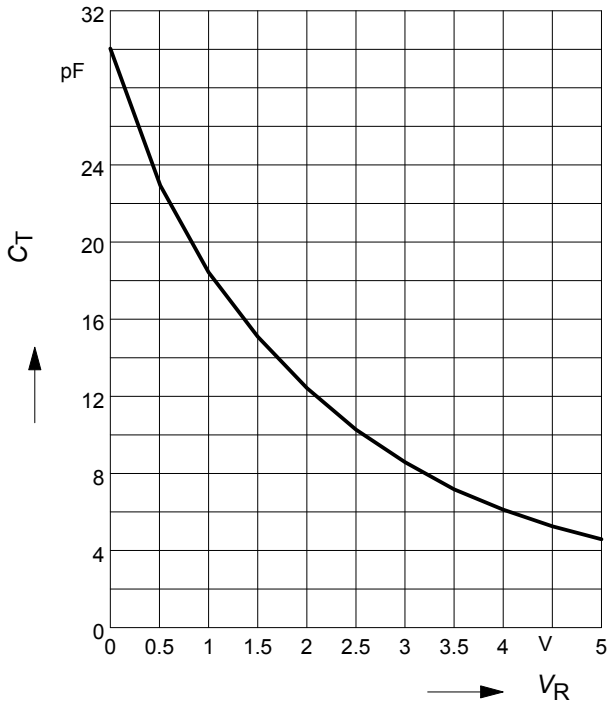
Parameter	Symbol	Value	Unit
Diode reverse voltage	$V_R$	10	V
Forward current	$I_F$	20	mA
Operating temperature range	$T_{op}$	-55 ... 150	°C
Storage temperature	$T_{stg}$	-55 ... 150	

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC Characteristics</b>					
Reverse current	$I_R$				nA
$V_R = 8\text{ V}$		-	-	10	
$V_R = 8\text{ V}, T_A = 85^\circ\text{C}$		-	-	100	
<b>AC Characteristics</b>					
Diode capacitance	$C_T$				pF
$V_R = 1\text{ V}, f = 1\text{ MHz}$		17.5	18.3	19.3	
$V_R = 2\text{ V}, f = 1\text{ MHz}$		11.4	12.35	13.3	
$V_R = 3\text{ V}, f = 1\text{ MHz}$		7.8	8.6	9.3	
$V_R = 4\text{ V}, f = 1\text{ MHz}$		5.5	6	6.6	
$V_R = 6\text{ V}, f = 1\text{ MHz}$		3.8	4.7	5.5	
Capacitance ratio	$C_{T1}/C_{T3}$	1.9	2.15	2.4	-
$V_R = 1\text{ V}, V_R = 3\text{ V}, f = 1\text{ MHz}$					
Capacitance ratio	$C_{T1}/C_{T4}$	2.7	3.05	3.5	
$V_R = 1\text{ V}, V_R = 4\text{ V}, f = 1\text{ MHz}$					
Capacitance ratio	$C_{T4}/C_{T6}$	1.15	1.3	1.45	
$V_R = 4\text{ V}, V_R = 6\text{ V}, f = 1\text{ MHz}$					
Series resistance	$r_S$				$\Omega$
$V_R = 1\text{ V}, f = 470\text{ MHz}, \text{BBY58-02L}, -07\text{L4}$		-	0.3	-	
$V_R = 1\text{ V}, f = 470\text{ MHz}, \text{all other}$		-	0.25	-	

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

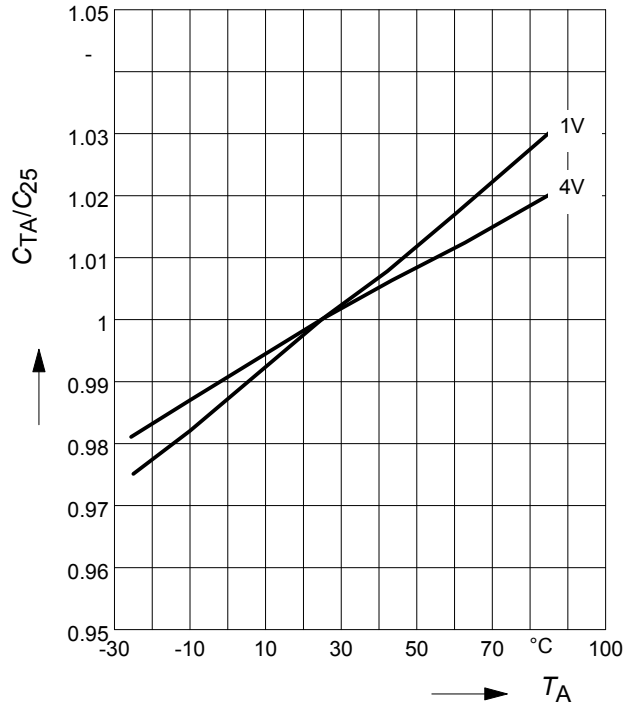
$f = 1\text{MHz}$



**Normalized diode capacitance**

$C_{(T_A)}/C_{(25^\circ\text{C})} = f(T_A)$

$f = 1\text{MHz}, V_R = \text{Parameter}$



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

$T_{CC} = f(V_R)$

