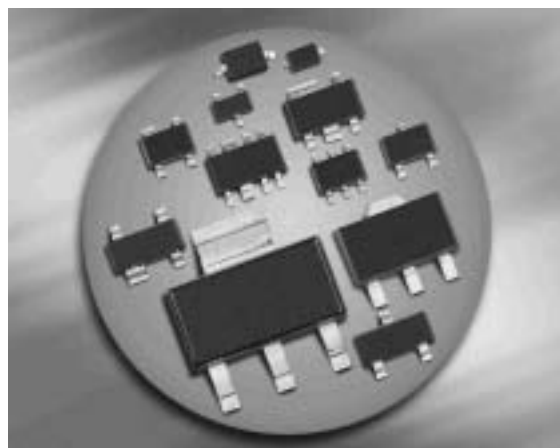
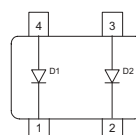
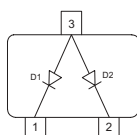
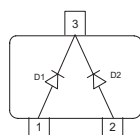
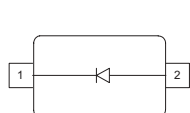


Silicon Tuning Diodes

- 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
BBY58-05W
BBY58-06W
BBY58-07L4
BBY58-02W
BBY58-03W


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

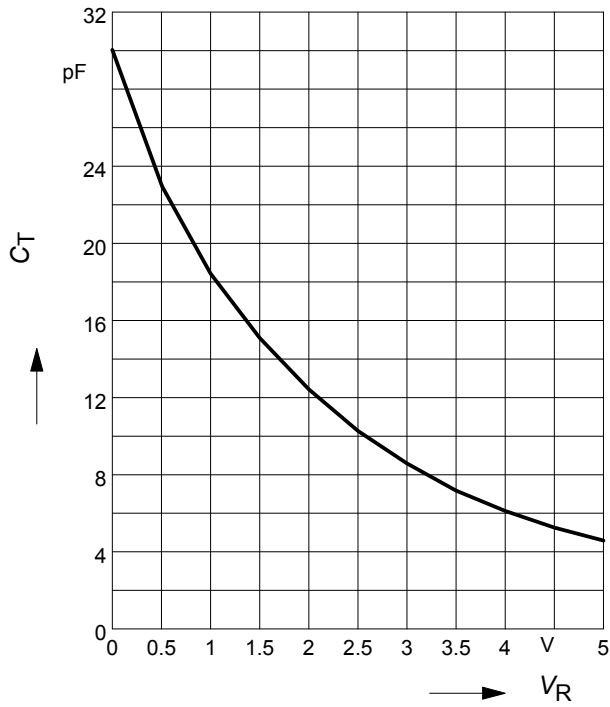
Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	10	V
Forward current	I_F	20	mA
Operating temperature range	T_{op}	-55 ... 150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 ... 150	

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Reverse current	I_R				nA
$V_R = 8\text{ V}$		-	-	10	
$V_R = 8\text{ V}, T_A = 85\text{ }^{\circ}\text{C}$		-	-	100	
AC Characteristics					
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				Ω
$V_R = 1\text{ V}, f = 470\text{ MHz}, \text{BBY58-02L, -07L4}$		-	0.3	-	
$V_R = 1\text{ V}, f = 470\text{ MHz}, \text{all other}$		-	0.25	-	

Diode capacitance $C_T = f(V_R)$

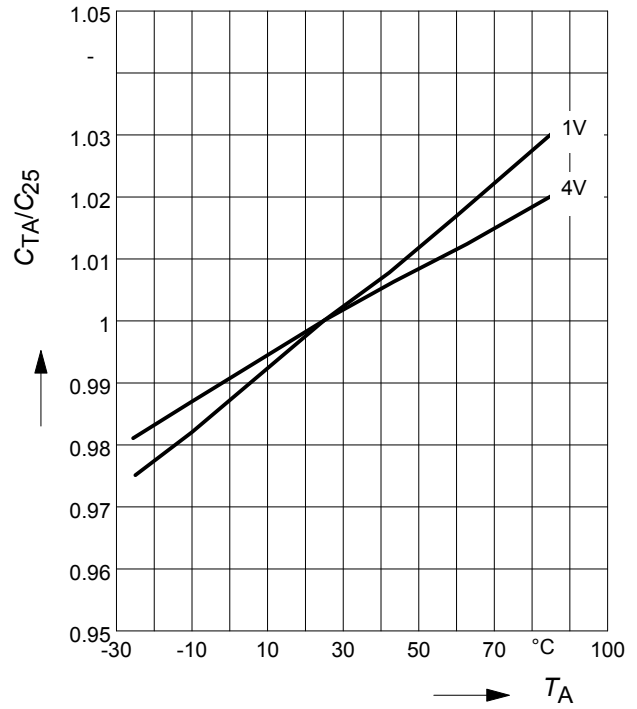
$f = 1\text{MHz}$



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 $T_{Cc} = f(V_R)$

