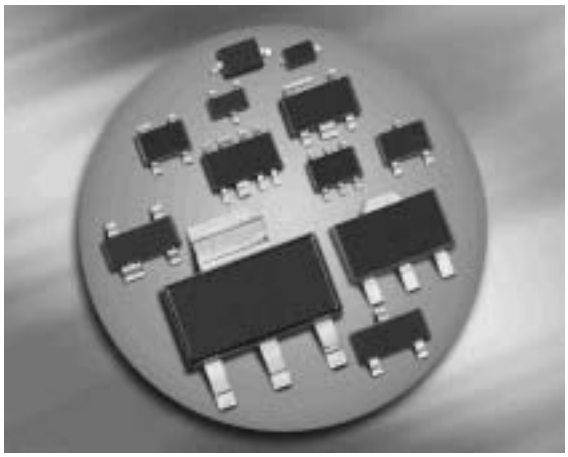
Silicon Tuning Diodes

- 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°C, unless otherwise specified

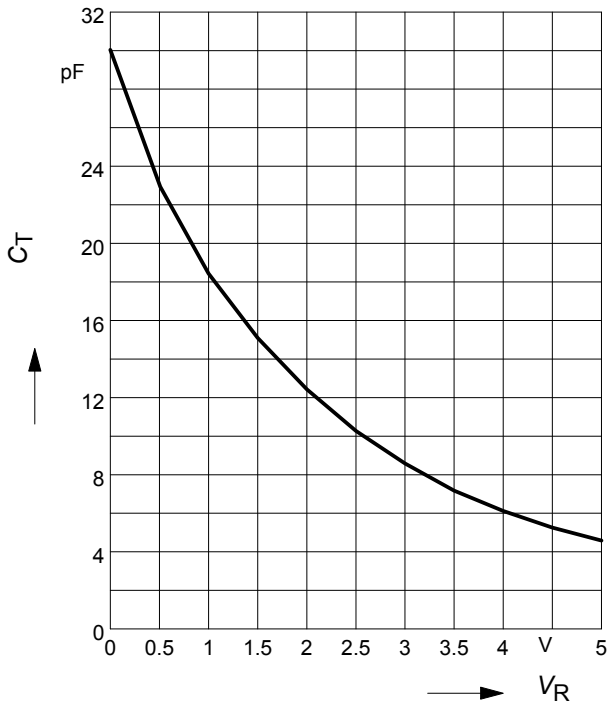
Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	10	V
Forward current	I_F	20	mA
Operating temperature range	T_{op}	-55 ... 150	°C
Storage temperature	T_{stg}	-55 ... 150	

Electrical Characteristics at T_A = 25°C, unless otherwise specified

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

Diode capacitance $C_T = f(V_R)$

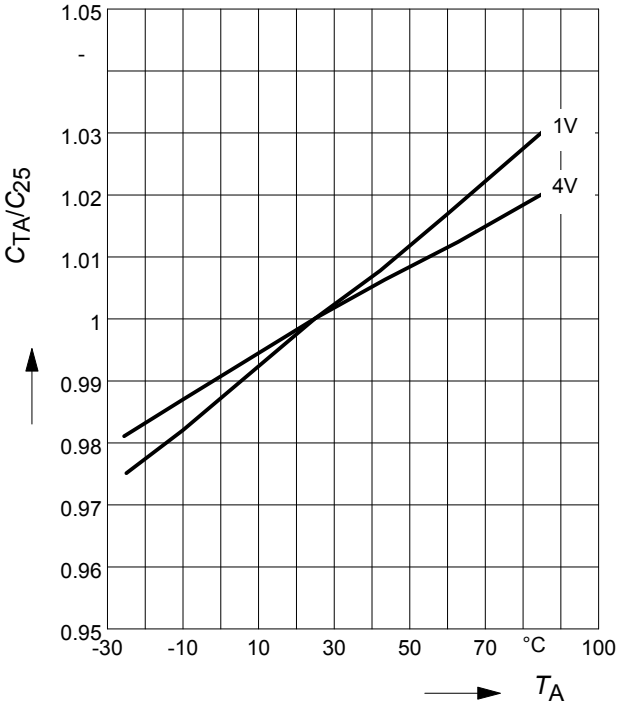
f = 1MHz



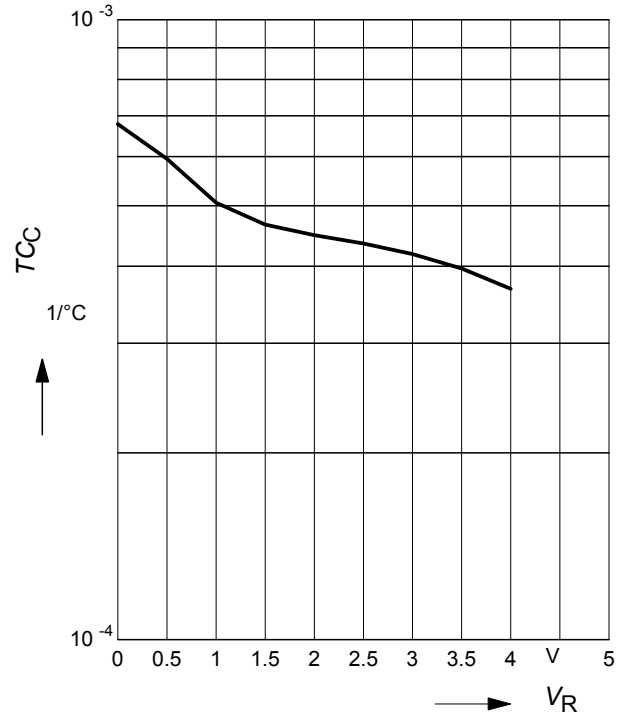
Normalized diode capacitance

$C_{(TA)}/C_{(25°C)} = f(T_A)$

f = 1MHz, V_R = Parameter



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



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