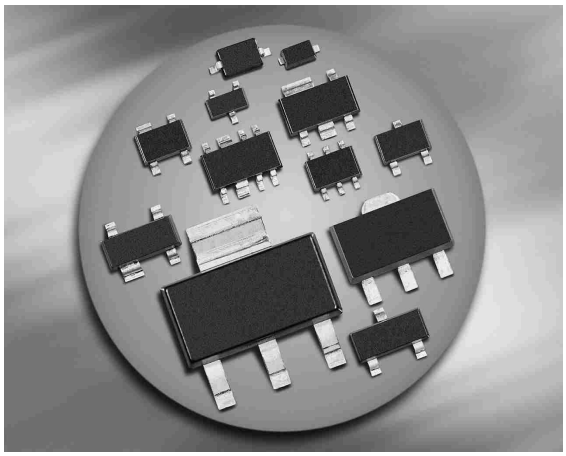
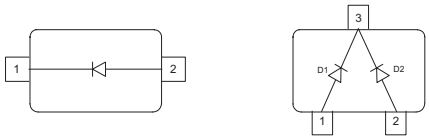
Silicon Tuning Diode

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



BBY57-02L **BBY57-05W**
BBY57-02V
BBY57-02W



Type	Package	Configuration	L_S(nH)	Marking
BBY57-02L*	TSLP-2	single	0.4	55
BBY57-02V	SC79	single	0.6	5
BBY57-02W	SCD80	single	0.6	55
BBY57-05W	SOT323	common cathode	1.4	D5s

* Preliminary

Maximum Ratings at T_A = 25°C, unless otherwise specified

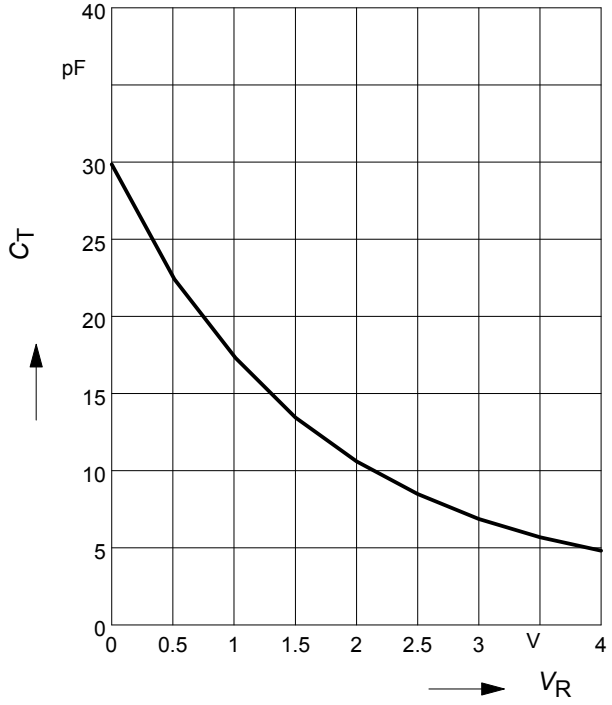
Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	10	V
Forward current	I_F	20	mA
Operating temperature range	T_{op}	-55 ... 125	°C
Storage temperature	T_{stg}	-55 ... 150	

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		16.5	17.5	18.6	
V_R = 2.5 V, f = 1 MHz		-	9.35	-	
V_R = 3 V, f = 1 MHz		-	7	-	
V_R = 4 V, f = 1 MHz		3.5	4.7	5.5	
Capacitance ratio	C_{T1}/C_{T3}	-	2.45	-	
V_R = 1 V, V_R = 3 V, f = 1 MHz					
Capacitance ratio	C_{T1}/C_{T4}	3	3.7	4.5	
V_R = 1 V, V_R = 4 V, f = 1 MHz					
Series resistance	r_S				Ω
V_R = 1 V, f = 470 MHz, BBY57-02L		-	0.35	-	
V_R = 1 V, f = 470 MHz, all others		-	0.3	-	

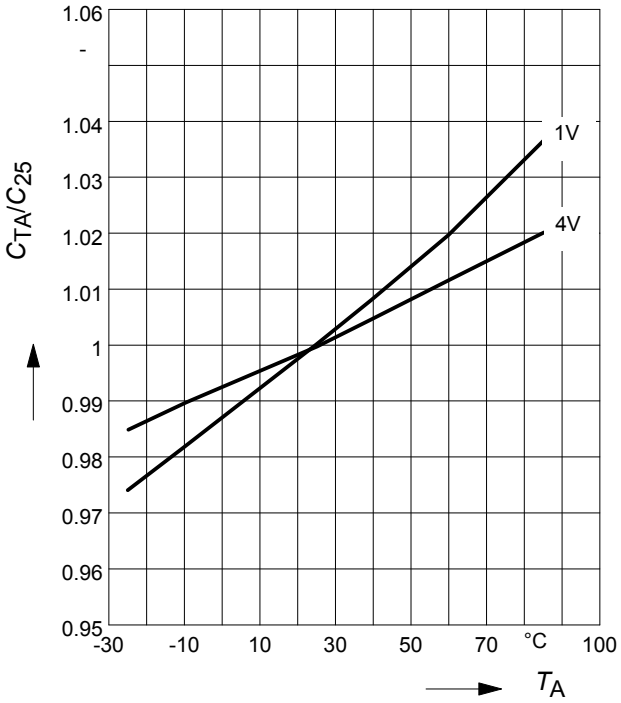
Diode capacitance $C_T = f(V_R)$

f = 1MHz

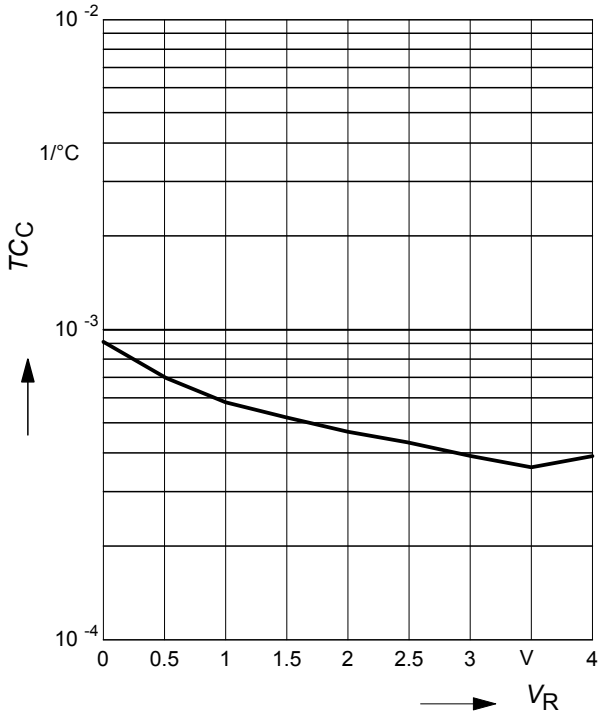


Normalized diode capacitance

$C_{(TA)}/C_{(25°C)} = f(T_A)$; f = 1MHz



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



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