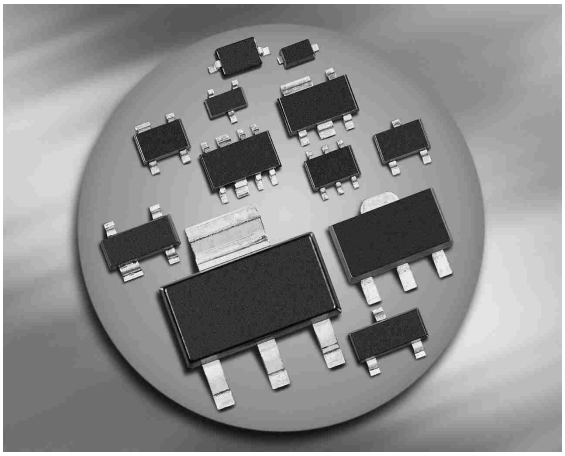
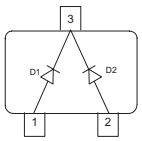
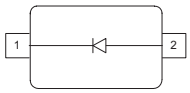
Silicon Tuning Diode

- High Q hyperabrupt tuning diode
- Designed for low tuning voltage operation
- For VCO's in mobile communications equipment



BBY51 **BBY51-02L**
BBY51-02W
BBY51-03W





Type	Package	Configuration	L_S(nH)	Marking
BBY51	SOT23	common cathode	2	S3s
BBY51-02L*	TSLP-2-1	single, leadless	0.4	II
BBY51-02W	SCD80	single	0.6	II
BBY51-03W	SOD323	single	1.8	H

* Preliminary

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

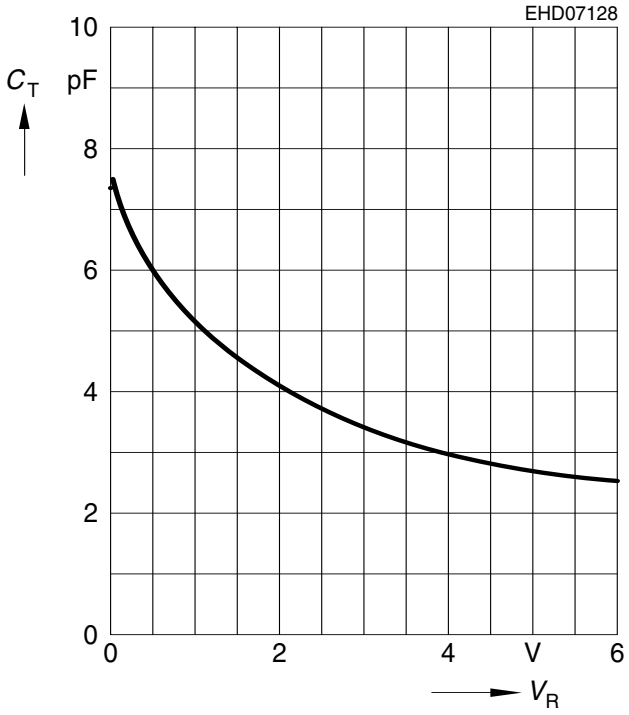
Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	7	V
Forward current	I_F	20	mA
Operating temperature range	T_{op}	-55 ... 125	°C
Storage temperature	T_{stg}	-55 ... 150	

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 = 6 V		-	-	10	
V_R = 6 V, T_A = 85 °C		-	-	200	
AC Characteristics					
Diode capacitance	C_T				pF
V_R = 1 V, f = 1 MHz		5.05	5.4	5.75	
V_R = 2 V, f = 1 MHz		3.4	4.2	5.2	
V_R = 3 V, f = 1 MHz		2.7	3.5	4.6	
V_R = 4 V, f = 1 MHz		2.5	3.1	3.7	
Capacitance ratio	C_{T1}/C_{T4}	1.55	1.75	2.2	
V_R = 1 V, V_R = 4 V, f = 1 MHz					
Capacitance difference	C_{1V}-C_{3V}	1.4	1.78	2.2	pF
V_R = 1 V, f = 1 MHz, V_R = 4 V					
Capacitance difference	C_{3V}-C_{4V}	0.3	0.5	0.7	
V_R = 3 V, f = 1 MHz, V_R = 4 V					
Series resistance	r_S	-	0.37	-	Ω
V_R = 1 V, f = 1 GHz					

Diode capacitance $C_T = f(V_R)$

f = 1MHz



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

