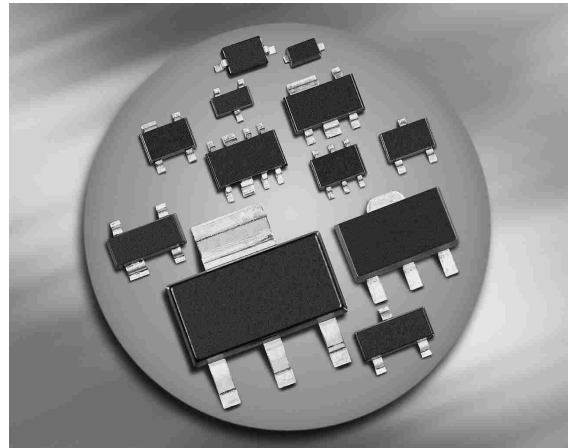


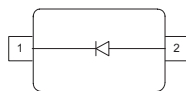
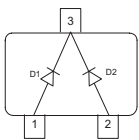
Silicon Tuning Diode

- 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 $T_A = 25^\circ\text{C}$, unless otherwise specified

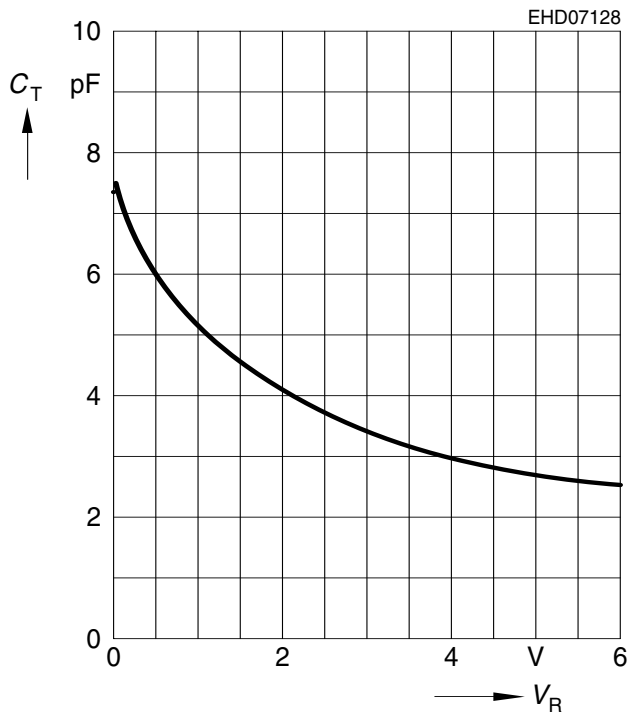
Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	7	V
Forward current	I_F	20	mA
Operating temperature range	T_{op}	-55 ... 125	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 ... 150	

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

Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$



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

