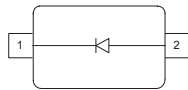
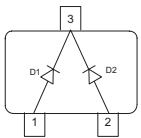


**Silicon Tuning Diode**

- 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

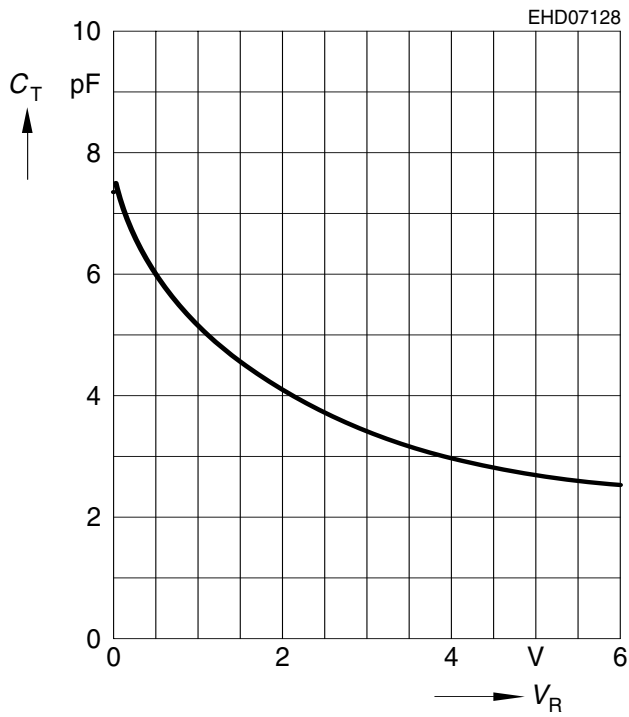
Parameter	Symbol	Value	Unit
Diode reverse voltage	$V_R$	7	V
Forward current	$I_F$	20	mA
Operating temperature range	$T_{op}$	-55 ... 125	°C
Storage temperature	$T_{stg}$	-55 ... 150	

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC Characteristics</b>					
Reverse current	$I_R$				nA
$V_R = 6\text{ V}$		-	-	10	
$V_R = 6\text{ V}, T_A = 85^\circ\text{C}$		-	-	200	
<b>AC Characteristics</b>					
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	-	$\Omega$
$V_R = 1\text{ V}, f = 1\text{ GHz}$					

Diode capacitance  $C_T = f(V_R)$

$f = 1\text{MHz}$



Temperature coefficient of the diode

capacitance  $T_{Cc} = f(V_R)$

