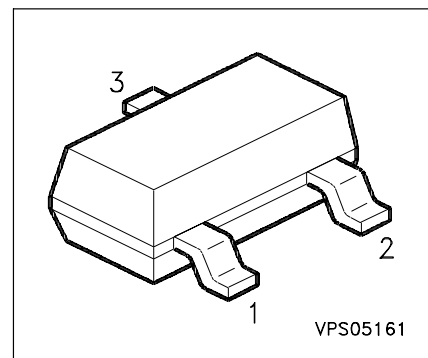


## Silicon Tuning Diode

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



Type	Marking	Ordering Code	Pin Configuration			Package
BBY 51	S3	Q62702-B631	1 = A	2 = A	3 = C1/C2	SOT-23

### Maximum Ratings

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

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC characteristics</b>					
Reverse current	$I_R$				nA
$V_R = 6\text{ V}, T_A = 25^\circ\text{C}$		-	-	10	
$V_R = 6\text{ V}, T_A = 65^\circ\text{C}$		-	-	200	
<b>AC Characteristics</b>					
Diode capacitance	$C_T$				pF
$V_R = 1\text{ V}, f = 1\text{ MHz}$		4.5	5.3	6.1	
$V_R = 2\text{ V}, f = 1\text{ MHz}$		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	$C_{T1}/C_{T4}$				-
$V_R = 1\text{ V}, V_R = 4\text{ V}, f = 1\text{ MHz}$		1.55	1.75	2.2	
Capacitance difference	$C_{1V}-C_{3V}$				pF
$V_R = 1\text{ V}, V_R = 3\text{ V}, f = 1\text{ MHz}$		1.4	1.78	2.2	
Capacitance difference	$C_{3V}-C_{4V}$				
$V_R = 3\text{ V}, V_R = 4\text{ V}, f = 1\text{ MHz}$		0.3	0.5	0.7	
Series resistance	$r_s$				$\Omega$
$V_R = 1\text{ V}, f = 1\text{ GHz}$		-	0.37	-	
Case capacitance	$C_C$				pF
$f = 1\text{ MHz}$		-	0.12	-	
Series inductance chip to ground	$L_s$				nH
		-	2	-	

Diode capacitance  $C_T = f(V_R)$

$f = 1\text{MHz}$

