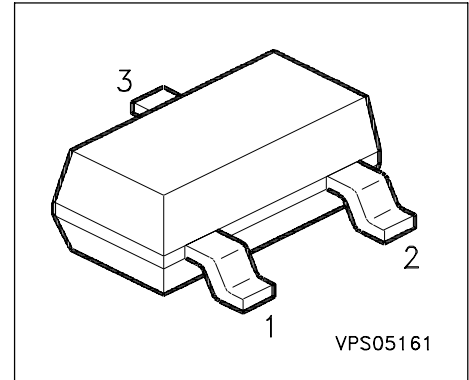


Silicon Tuning Diode

Preliminary data

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



Type	Marking	Ordering Code	Pin Configuration			Package
BBY 53	S7s	Q62702-B824	1 = A1	2 = A2	3 = C1/C2	SOT-23

Maximum Ratings

Parameter	Symbol	Values	Unit
Diode reverse voltage	V_R	6	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.	
DC characteristics					
Reverse current	I_R				nA
$V_R = 4 \text{ V}, T_A = 25^\circ\text{C}$		-	-	10	
$V_R = 4 \text{ V}, T_A = 65^\circ\text{C}$		-	-	200	
AC characteristics					
Diode capacitance	C_T				pF
$V_R = 1 \text{ V}, f = 1 \text{ MHz}$		4.8	5.3	5.8	
$V_R = 3 \text{ V}, f = 1 \text{ MHz}$		1.85	2.4	3.1	
Capacitance ratio	C_{T1}/C_{T3}				-
$V_R = 1 \text{ V}, V_R = 3 \text{ V}, f = 1 \text{ MHz}$		1.8	2.2	2.6	
Series resistance	r_s				Ω
$V_R = 1 \text{ V}, f = 1 \text{ GHz}$		-	0.37	-	
Case capacitance	C_C				pF
$f = 1 \text{ MHz}$		-	0.12	-	
Series inductance chip to ground	L_s				nH
		-	2	-	

Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$

