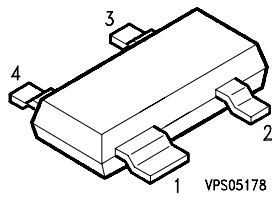
Silicon Tuning Diode

- 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 51-07	HHs	Q62702-	1 = C1	2 = C2	3 = A2	4 = A1	SOT-143

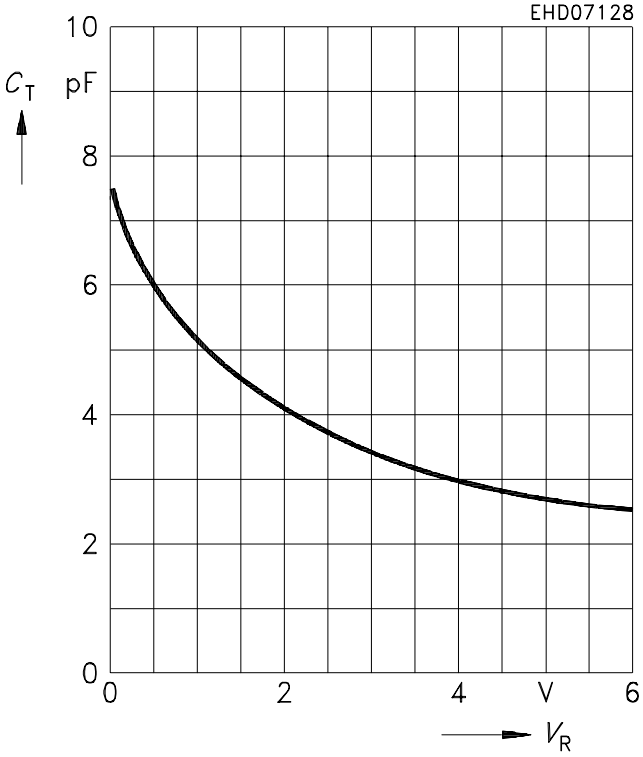
Maximum Ratings per diode

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°C, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC characteristics per diode					
Reverse current	I_R				nA
V_R = 6 V, T_A = 25 °C		-	-	10	
V_R = 6 V, T_A = 65 °C		-	-	200	
AC characteristics per diode					
Diode capacitance	C_T				pF
V_R = 1 V, f = 1 MHz		4.8	5.3	6	
V_R = 2 V, f = 1 MHz		3.6	4.2	5	
V_R = 3 V, f = 1 MHz		2.9	3.5	4.2	
V_R = 4 V, f = 1 MHz		2.6	3.1	3.5	
Capacitance ratio	C_{T1}/C_{T4}				-
V_R = 1 V, V_R = 4 V, f = 1 MHz		1.55	1.75	2.15	
Capacitance difference	C_{1V}-C_{3V}				pF
V_R = 1 V, V_R = 3 V, f = 1 MHz		1.4	1.78	2.2	
Capacitance difference	C_{3V}-C_{4V}				
V_R = 3 V, V_R = 4 V, f = 1 MHz		0.3	0.5	0.7	
Series resistance	r_s				Ω
V_R = 1 V, f = 1 GHz		-	0.37	-	
Case capacitance	C_C				pF
f = 1 MHz		-	0.12	-	
Series inductance chip to ground	L_s	-	2	-	nH

Diode capacitance $C_T = f(V_R)$
f = 1MHz



Temperature coefficient of the diode capacitance $T_{Cc} = f(V_R)$
f = 1MHz