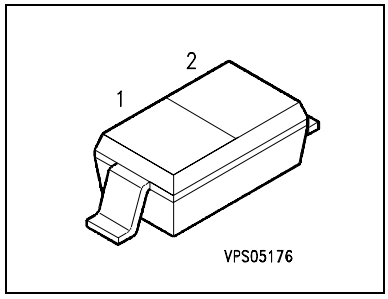
Silicon Tuning Diode

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



Type	Marking	Ordering Code (tape and reel)	Pin Configuration 1		2	Package 1)
BBY 51-03W	H	Q62702-B663	C1		A2	SOD-323

Maximum Ratings

Parameter	Symbol	BBY 51-03W	Unit
Reverse voltage	V_R	7	V
Forward current	I_F	20	mA
Operating temperature range	T_{op}	-55 +150°C	°C
Storage temperature range	T_{stg}	-55...+150°C	°C

1) Package mounted on alumina 15mm x 16.7mm x 0.7mm

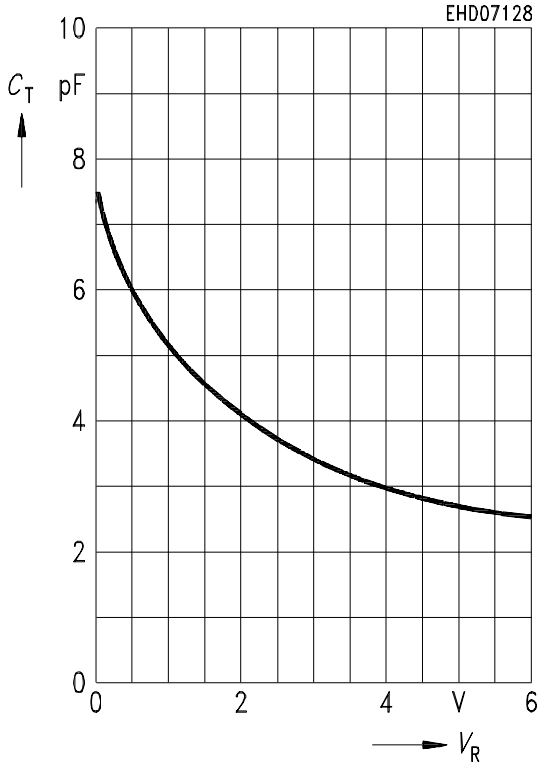
Electrical Characteristics

at T_A = 25 °C, unless otherwise specified.

Parameter	Symbol	Value			Unit
		min.	typ.	max.	
DC Characteristics					
Reverse current	I_R				nA
V_R = 6 V		-	-	10	
V_R = 6 V, T_A = 65 °C		-	-	200	
Diode capacitance	C_T				pF
V_R = 1 V, f = 1 MHz		4.5	5.3	6.1	
V_R = 2 V, f = 1 MHz		3.4	4.2	5.2	
V_R = 3 V, f = 1 MHz		2.7	3.5	4.6	
V_R = 4 V, f = 1 MHz		2.5	3.1	3.7	
Capacitance ratio	C_{T1V}/C_{T4V}				-
V_R = 1 V, 4 V, f = 1 MHz		1.55	1.75	2.2	
Capacitance difference					pF
V_R = 1 V, 3 V, f = 1MHz	C_{1V}-C_{3V}	1.4	1.78	2.2	
V_R = 3 V, 4 V, f = 1MHz	C_{3V}-C_{4V}	0.30	0.50	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	-	
Serien inductance	L_s	-	2	-	nH

1) Without 100 % test, correlation limits

Dioden capacitance $C_T = f(V_R^*)$
$f = 1$ MHz



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