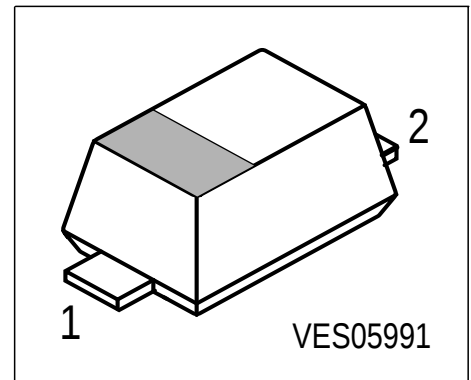


Silicon Tuning Diode

- Excellent linearity
- High Q hyperabrupt tuning diode
- Low series inductance
- High capacitance ratio
- Designed for low tuning voltage operation
for VCO's in mobile communications equipment
- For control elements such as TCXOs and VCXOs



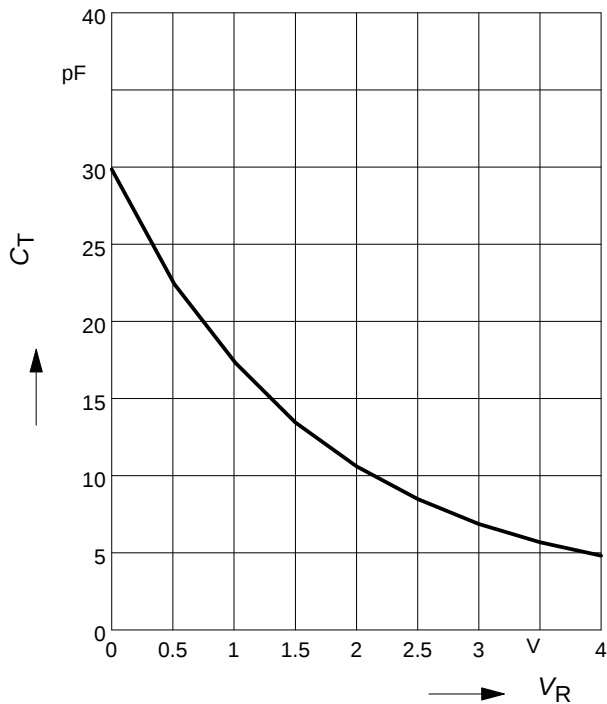
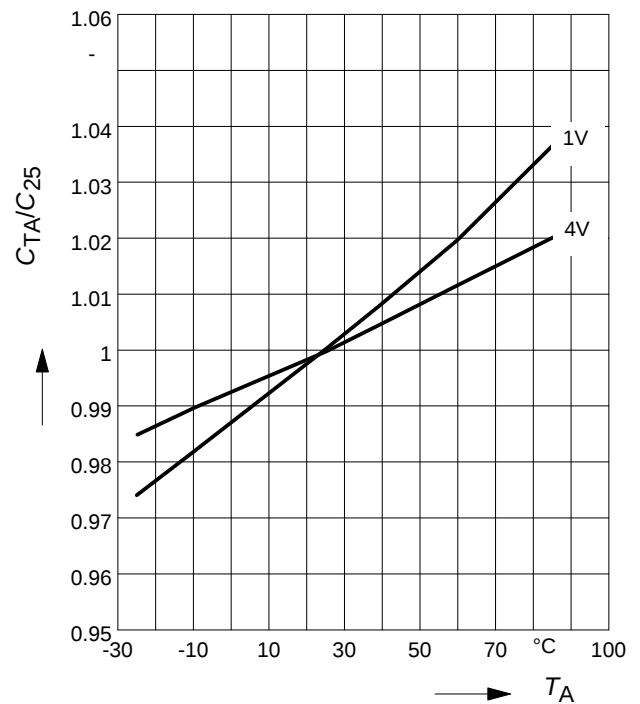
Type	Marking	Pin Configuration			Package
BBY57-02W	5	1 = C	2 = A	-	SCD80

Maximum Ratings

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	10	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 $V_R = 8\text{ V}$ $V_R = 8\text{ V}, T_A = 85\text{ }^{\circ}\text{C}$	I_R	- -	- -	10 100	nA
AC Characteristics					
Diode capacitance- $V_R = 1\text{ V}, f = 1\text{ MHz}$ $V_R = 2.5\text{ V}, f = 1\text{ MHz}$ $V_R = 3\text{ V}, f = 1\text{ MHz}$ $V_R = 4\text{ V}, f = 1\text{ MHz}$	C_T	16.5 - - 4	17.5 8.7 7.1 4.73	18.6 - - 5.5	pF
Capacitance ratio $V_R = 1\text{ V}, V_R = 3\text{ V}, f = 1\text{ MHz}$	C_{T1}/C_{T3}	-	2.45	-	
Capacitance ratio $V_R = 1\text{ V}, V_R = 4\text{ V}, f = 1\text{ MHz}$	C_{T1}/C_{T4}	3	3.7	4.5	
Series resistance $V_R = 1\text{ V}, f = 470\text{ MHz}$	r_S	-	0.3	-	Ω
Case capacitance $f = 1\text{ MHz}$	C_C	-	0.09	-	pF
Series inductance	L_S	-	0.6	-	nH

Diode capacitance $C_T = f(V_R)$
 $f = 1\text{MHz}$

Normalized diode capacitance
 $C_{(T_A)}/C_{(25^\circ\text{C})} = f(T_A)$
 $f = 1\text{MHz}, V_R = \text{Parameter}$

Temperature coefficient of the diode capacitance $TC_C = f(V_R)$
