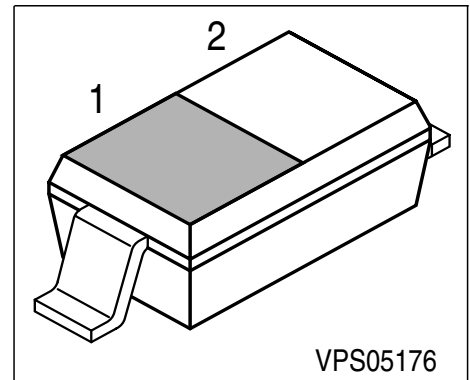


Silicon Tuning Diode

- 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
BBY 57-03W	5 cathd.red	1 = C	2 = A	SOD-323

Maximum Ratings

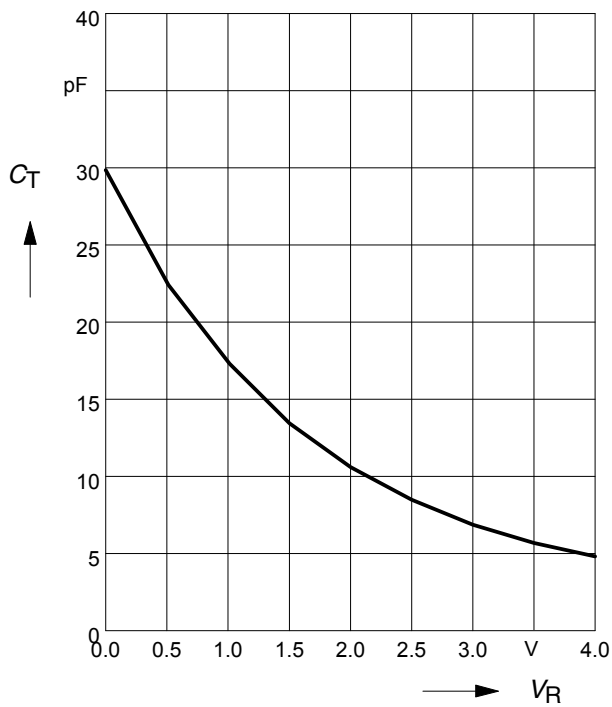
Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	10	V
Forward current	I_F	20	mA
Operating temperature range	T_{op}	-55 ... 150	°C
Storage temperature	T_{stg}	-55 ... 150	

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

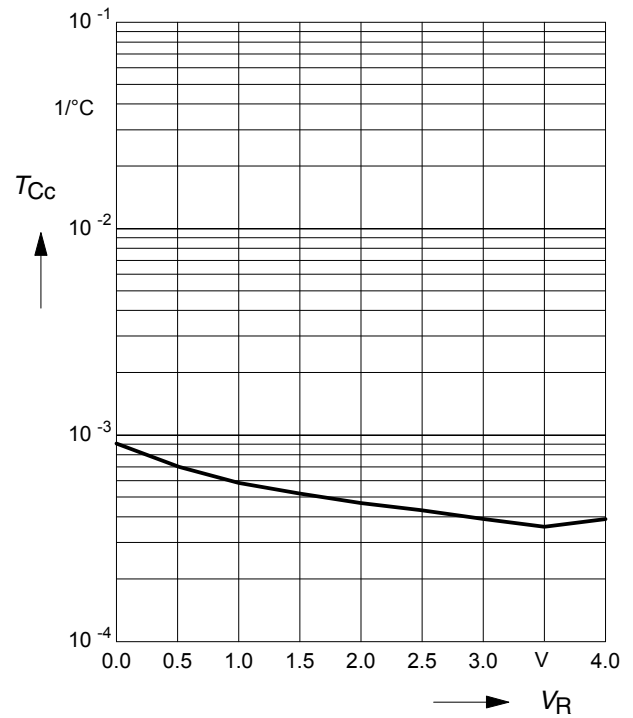
Parameter	Symbol	Values			Unit	
		min.	typ.	max.		
DC characteristics						
Reverse current $V_R = 8\text{ V}$	I_R	-	-	1	nA	
Reverse current $V_R = 8\text{ V}, T_A = 65\text{ }^{\circ}\text{C}$	I_R	-	-	100		
AC characteristics						
Diode capacitance $V_R = 1\text{ V}, f = 1\text{ MHz}$ $V_R = 2.5\text{ V}, f = 1\text{ MHz}$ $V_R = 3\text{ V}, f = 1\text{ MHz}$ $V_R = 4\text{ V}, f = 1\text{ MHz}$	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	-	1.8	-	nH	

Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$



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



Normalized diode capacitance

$$C_{(T_A)} / C_{(25^\circ\text{C})} = f(T_A)$$

$f = 1\text{MHz}$, $V_R = \text{Parameter}$

