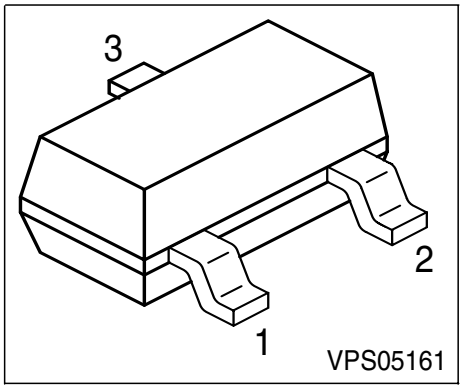
Silicon Tuning Diode



- High capacitance ratio
- High Q hyperabrupt tuning diode
- Designed for low tuning voltage operation
  for VCO' s in mobile communications equipment
- Very low capacitance spread

Type	Marking	Pin Configuration			Package
BBY66-05	OBs	1=A1	2=A2	3=C1/C2	SOT-23

Maximum Ratings

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	12	V
Forward current	I_F	50	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					
Reverse current	I_R				nA
V_R = 10 V		-	-	10	
V_R = 10 V, T_A = 65 °C		-	-	100	
AC Characteristics					
Diode capacitance[1)]	C_T				pF
V_R = 1 V, f = 1 MHz		66	68.7	71.5	
V_R = 2 V, f = 1 MHz		33	35.4	38	
V_R = 3 V, f = 1 MHz		19.7	20.95	22.2	
V_R = 4.5 V, f = 1 MHz		12	12.7	13.5	
Capacitance ratio	$C_{T1}/C_{T4.5}$	5	5.41	-	
V_R = 1 V, V_R = 4.5 V					
Series resistance	r_S	-	0.25	0.4	Ω
V_R = 1 V, f = 470 MHz					
Case capacitance	C_C	-	0.09	-	pF
f = 1 MHz					
Series inductance	L_S	-	0.7	-	nH

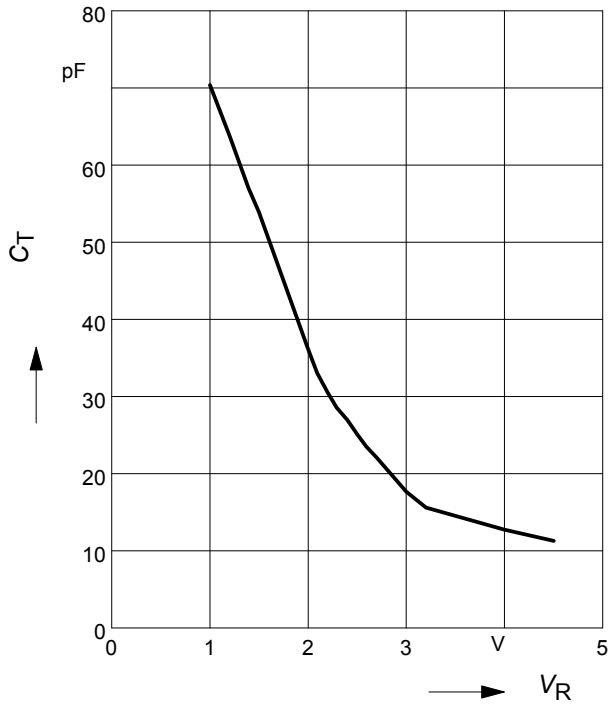
[1]Capacitance groups at 1V, coded 01; 02

C_T/groups		01	02
C_{1V}	min	66pF	68,5pF
C_{1V}	max	69pF	71,5pF

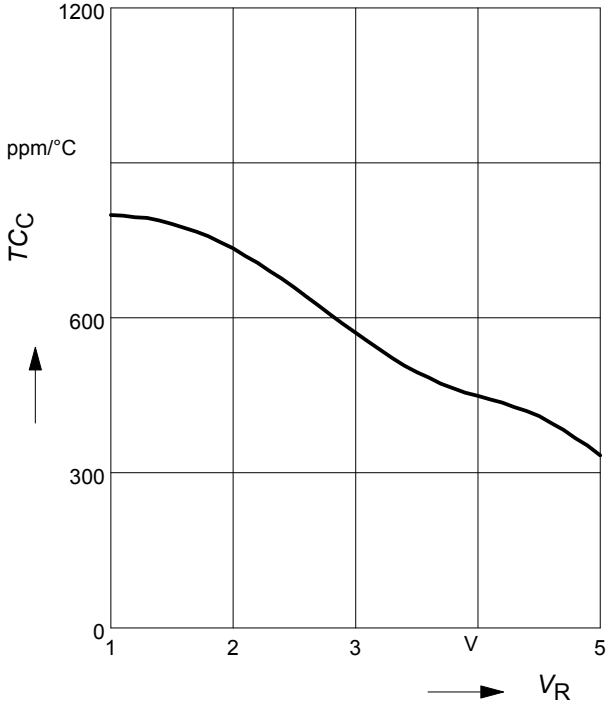
Deliveries contain either C_T group 01 or group 02 (marked on reel).

No direct order of C_T groups possible

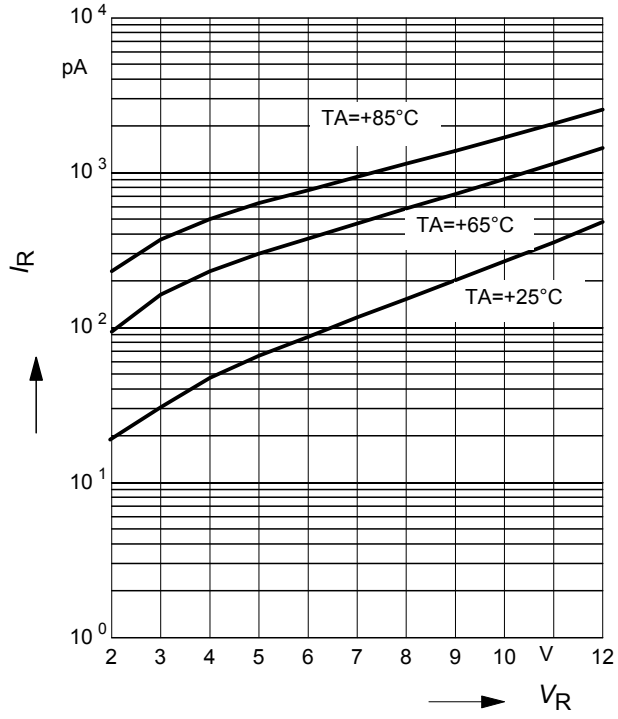
Diode capacitance $C_T = f(V_R)$
f = 1MHz



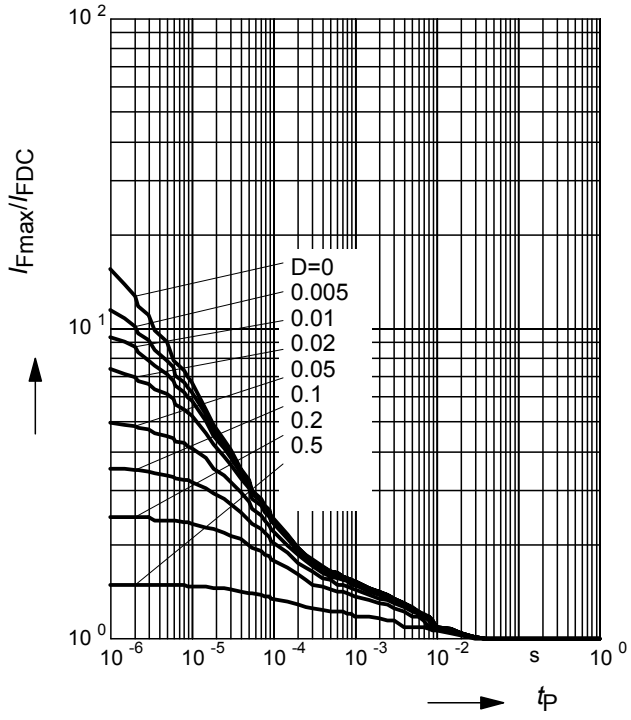
Temperature coefficient of the diode capacitance $TC_C = f(V_R)$



Reverse current $I_R = f(V_R)$
T_A = Parameter



Permissible Pulse Load
$I_{Fmax}/I_{FDC} = f(t_p)$



Permissible Puls Load $R_{thJS} = f(t_p)$