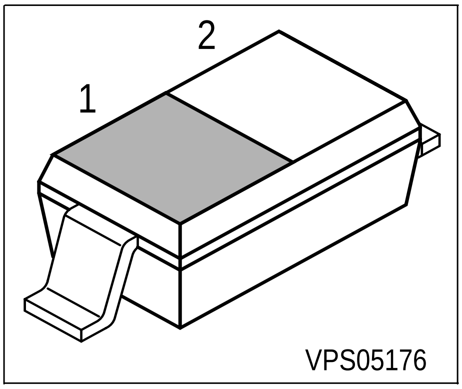
Silicon Tuning Diode

- For VHF 2-Band-hyperband-TV-tuners
- Very high capacitance ratio
- Low series resistance
- Extremely small plastic SMD package
- Excellent uniformity and matching due to "in-line" matching assembly procedure



Type	Marking	Pin Configuration		Package
BB669	1	1 = C	2 = A	SOD323

Maximum Ratings

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	30	V
Peak reverse voltage ($R \geq 5\text{k}\Omega$)	V_{RM}	35	
Forward current	I_F	20	mA
Operating temperature range	T_{op}	-55... 150	°C
Storage temperature	T_{stg}	-55... 150	

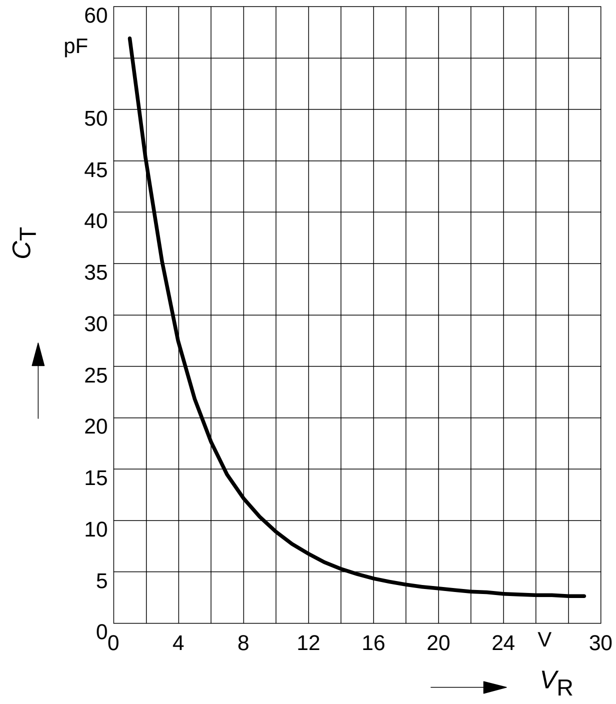
Electrical Characteristics at T_A = 25°C, unless otherwise specified.

Parameter	**Symbol**	**Values**			**Unit**
		min.	**typ.**	**max.**	
DC characteristics					
Reverse current V_R = 30 V	I_R	-	-	10	nA
Reverse current V_R = 30 V, T_A = 85 °C	I_R	-	-	200	
AC characteristics					
Diode capacitance	C_T				pF
V_R = 1 V, f = 1 MHz		51	56.5	61.5	
V_R = 2 V, f = 1 MHz		39.6	43.4	47.2	
V_R = 25 V, f = 1 MHz		2.6	2.8	3	
V_R = 28 V, f = 1 MHz		2.5	2.7	2.9	
Capacitance ratio V_R = 2 V, V_R = 25 V, f = 1 MHz	C_{T2}/C_{T25}	14.5	15.5	17	-
Capacitance ratio V_R = 1 V, V_R = 28 V, f = 1 MHz	C_{T1}/C_{T28}	18	20.9	23.3	
Capacitance ratio 1) V_R = 1 V, V_R = 28 V, f = 1 MHz	$\Delta C_T/C_T$	-	-	2	%
Series resistance V_R = 8 V, f = 470 MHz	r_S	-	0.85	-	Ω
Series inductance	L_S	-	1.8	-	nH

1) In-line matching. For details please refer to Application Note 047

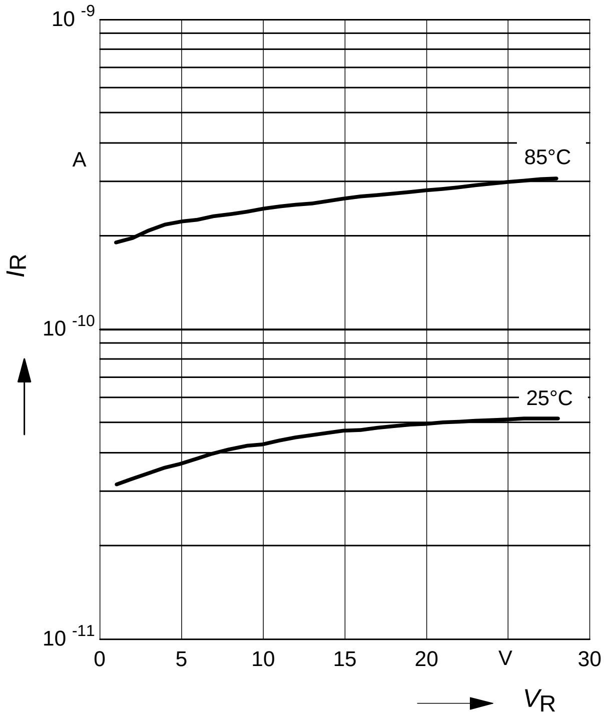
Diode capacitance $C_T = f(V_R)$

f = 1MHz



Reverse current $I_R = f(V_R)$

T_A = Parameter



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