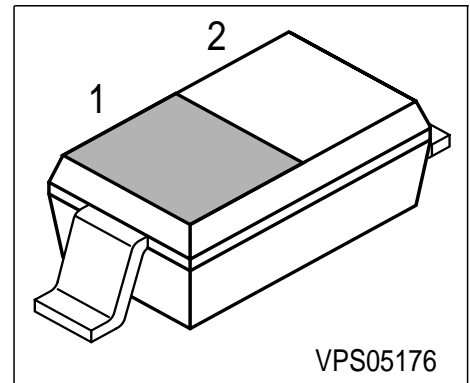


**Silicon Tuning Diode**

- 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 ( $R \geq 5k\Omega$ )	$V_{RM}$	35	
Forward current	$I_F$	20	mA
Operating temperature range	$T_{op}$	-55... 150	°C
Storage temperature	$T_{stg}$	-55... 150	

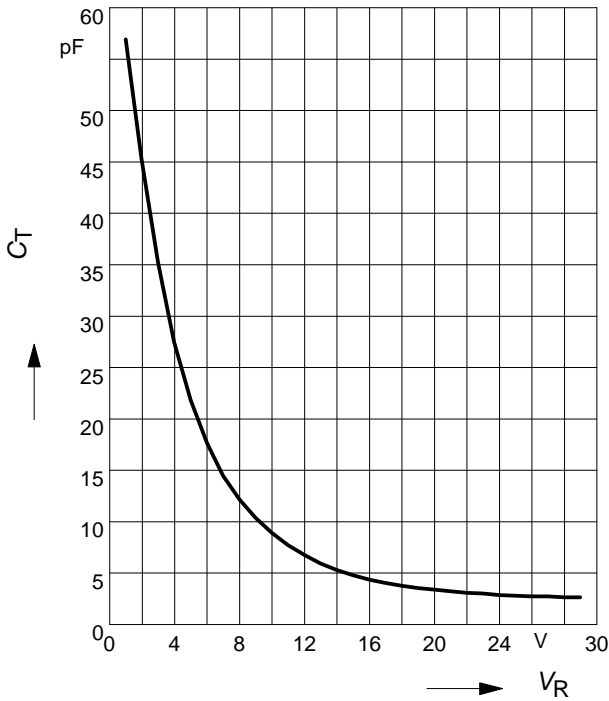
**Electrical Characteristics** at  $T_A = 25^\circ\text{C}$ , unless otherwise specified.

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

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

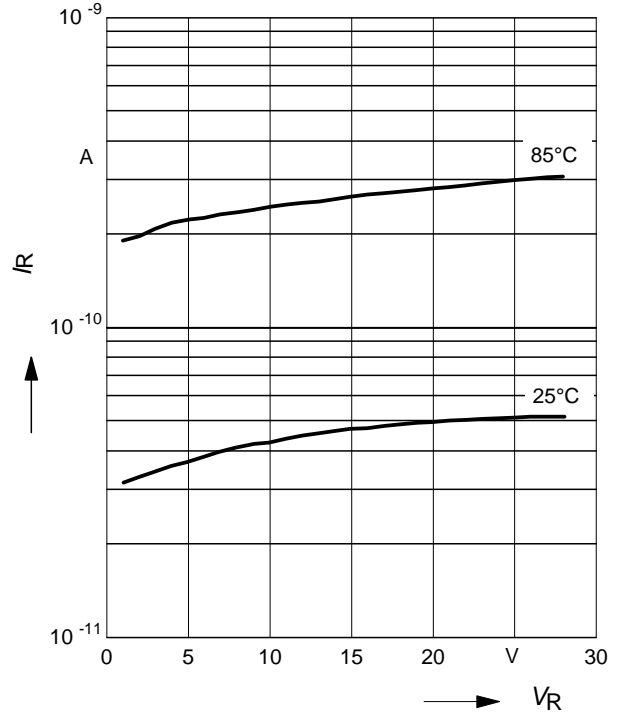
**Diode capacitance  $C_T = f(V_R)$**

$f = 1\text{MHz}$



**Reverse current  $I_R = f(V_R)$**

$T_A = \text{Parameter}$



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

