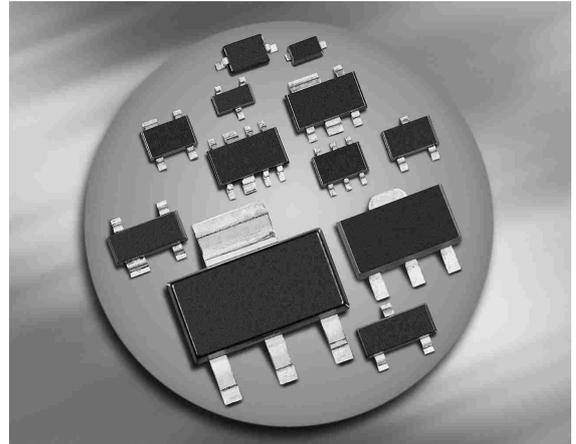
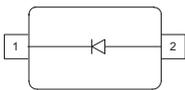


**Silicon Tuning Diode**

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



**BB669**  
**BB689**  
**BB689-02V**



Type	Package	Configuration	$L_S$ (nH)	Marking
BB669	SOD323	single	1.8	1
BB689	SCD80	single	0.6	EE
BB689-02V	SC79	Single	0.6	E

**Maximum Ratings** at  $T_A = 25^\circ\text{C}$ , unless otherwise specified

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

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC Characteristics</b>					
Reverse current $V_R = 30\text{ V}$ $V_R = 30\text{ V}, T_A = 85^\circ\text{C}$	$I_R$	- -	- -	10 200	nA

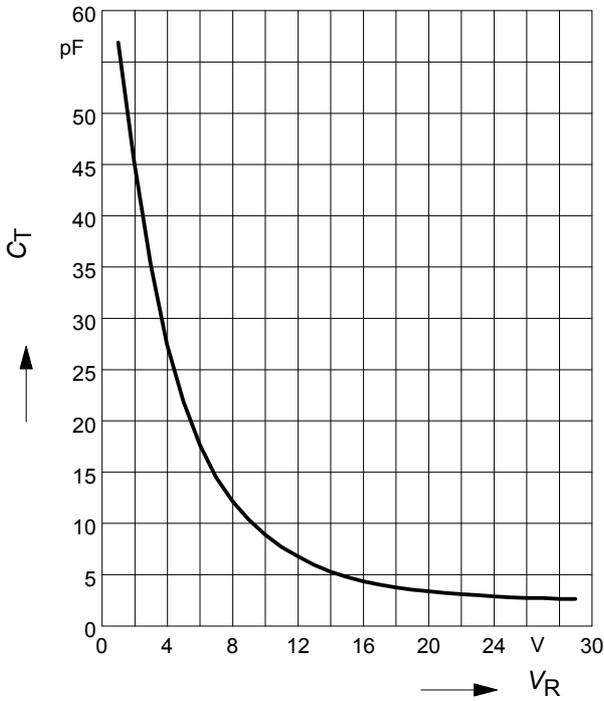
**Electrical Characteristics at  $T_A = 25^\circ\text{C}$ , unless otherwise specified**

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<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 $V_R = 1\text{ V}, V_R = 28\text{ V}, f = 1\text{ MHz}$	$C_{T1}/C_{T28}$	18	20.9	23.2	-
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 matching <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	-	$\Omega$

<sup>1</sup>For details please refer to Application Note 047

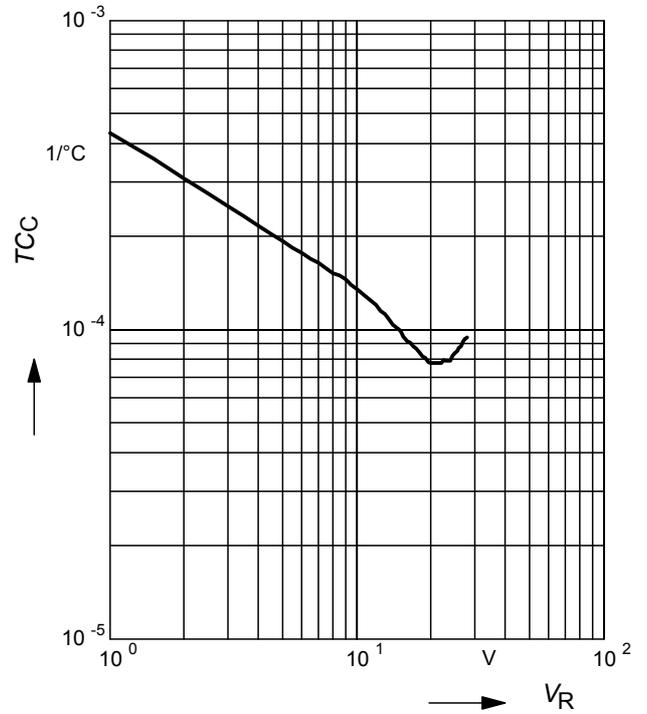
**Diode capacitance  $C_T = f(V_R)$**

$f = 1\text{MHz}$



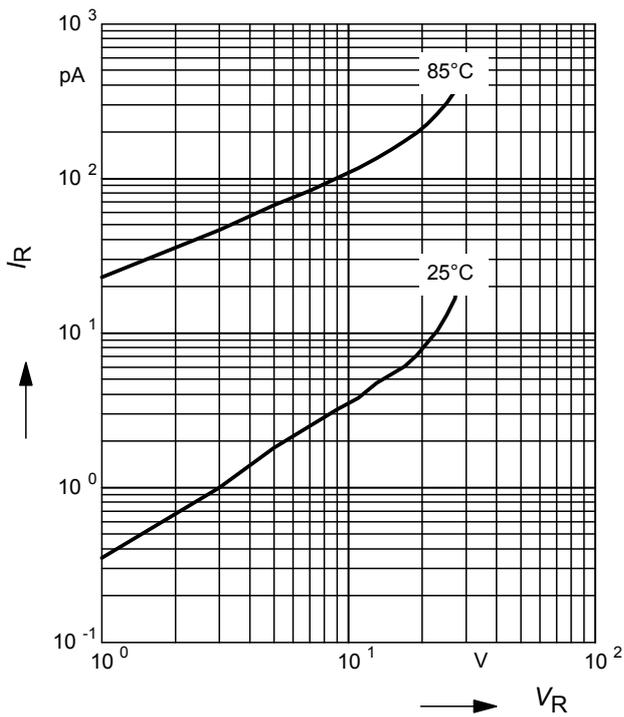
**Temperature coefficient of the diode capacitance  $T_{CC} = f(V_R)$**

$T_{CC} = f(V_R)$



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

$T_A = \text{Parameter}$



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