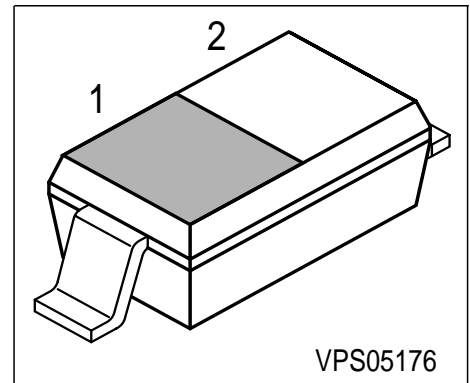


Silicon Variable Capacitance Diode

- For UHF and TV / TR tuners
- Large capacitance ratio, low series resistance



Type	Marking	Pin Configuration		Package
BB535	white S	1 = C	2 = A	SOD323

Maximum Ratings

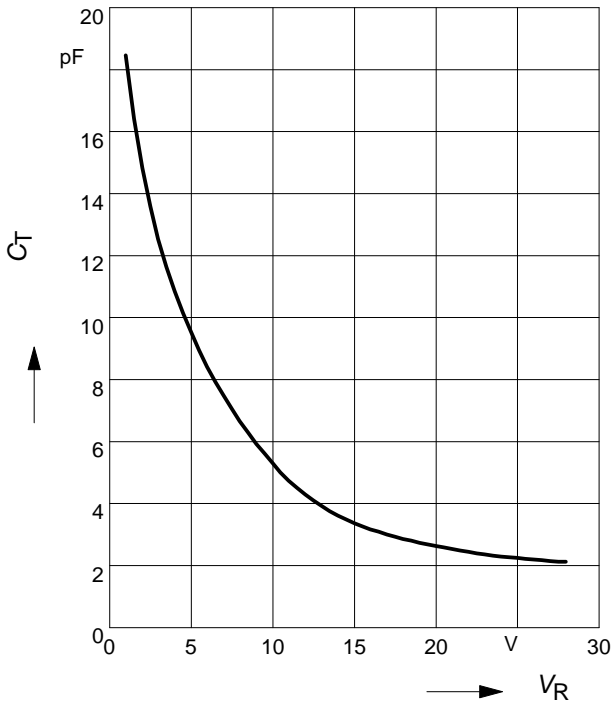
Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	30	V
Peak reverse voltage ($R \geq 5k\Omega$)	V_{RM}	35	
Forward current	I_F	20	mA
Operating temperature range	T_{op}	-55 ... 125	°C
Storage temperature	T_{stg}	-55 ... 150	

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC characteristics					
Reverse current $V_R = 30\text{ V}$	I_R	-	-	10	nA
Reverse current $V_R = 30\text{ V}, T_A = 85^\circ\text{C}$	I_R	-	-	200	
AC characteristics					
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	17.5 14.01 2.05 1.9	18.7 15 2.24 2.1	20 16.1 2.4 2.3	pF
Capacitance ratio $V_R = 2\text{ V}, V_R = 25\text{ V}, f = 1\text{ MHz}$	C_{T2}/C_{T25}	6	6.7	7.5	-
Capacitance ratio $V_R = 1\text{ V}, V_R = 28\text{ V}, f = 1\text{ MHz}$	C_{T1}/C_{T28}	8.2	8.9	9.8	
Capacitance matching $V_R = 1\text{ V}, V_R = 28\text{ V}, f = 1\text{ MHz}$	$\Delta C_T/C_T$	-	-	2.5	%
Series resistance $V_R = 3\text{ V}, f = 470\text{ MHz}$	r_s	-	0.55	0.65	Ω
Series inductance	L_s	-	1.8	-	nH

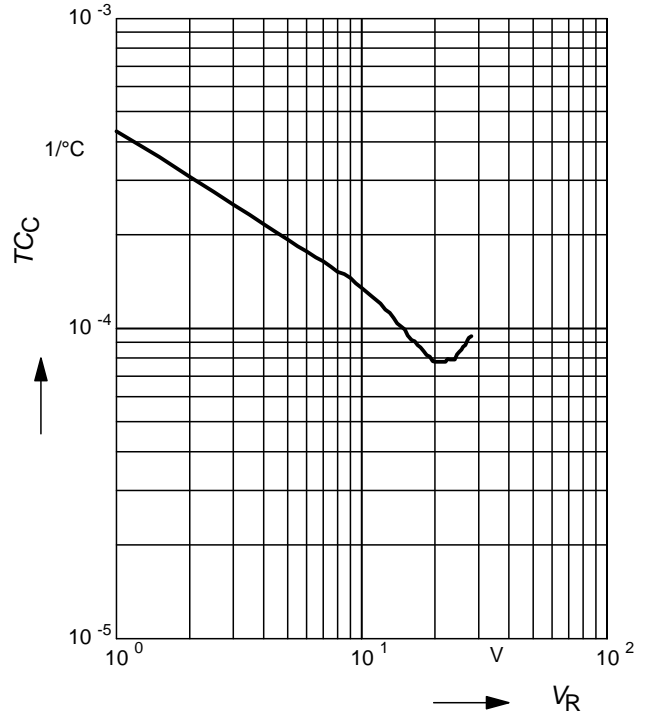
Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$



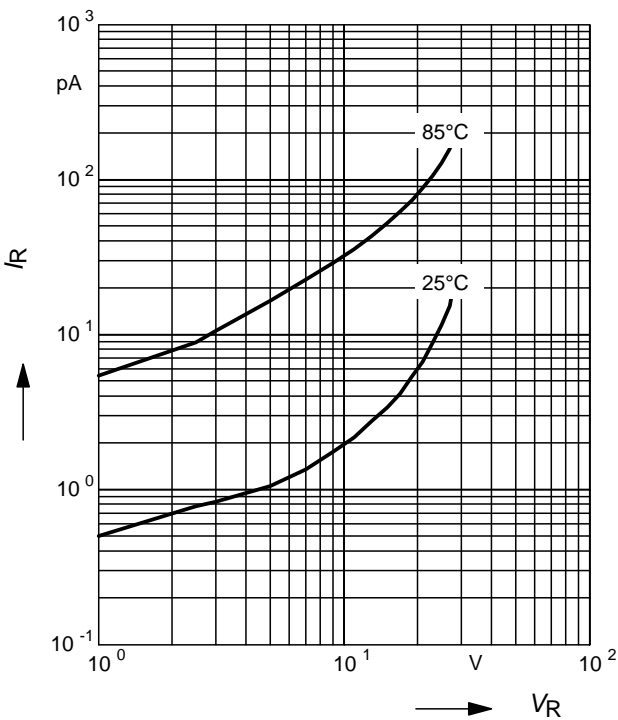
Temperature coefficient of the diode capacitance $T_{CC} = f(V_R)$

$T_{CC} = f(V_R)$



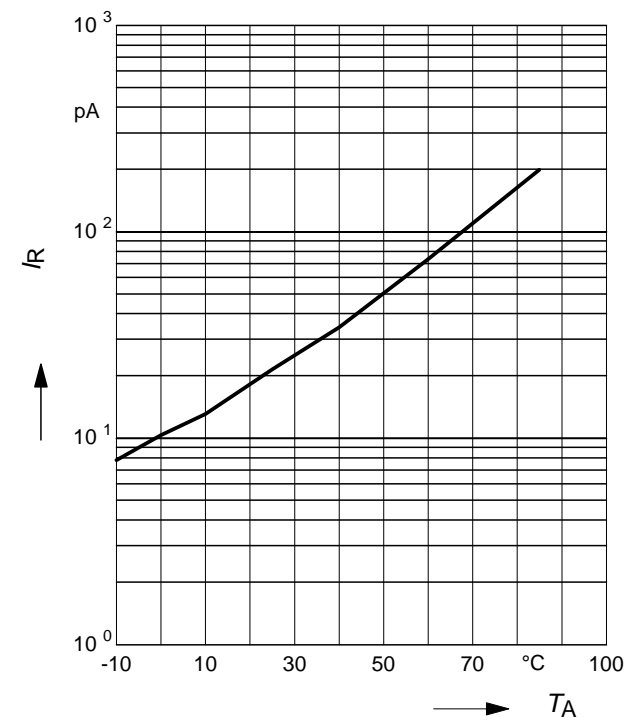
Reverse current $I_R = f(V_R)$

$T_A = \text{Parameter}$



Reverse current $I_R = f(T_A)$

$V_R = 28\text{V}$



Normalized diode capacitance

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

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

