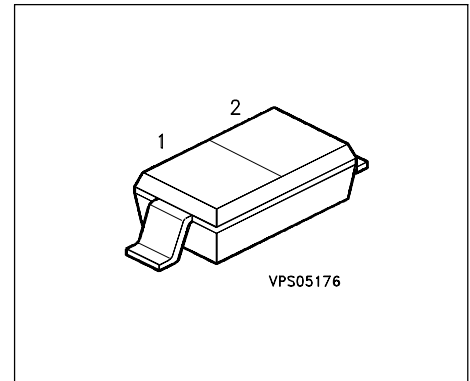


Silicon Variable Capacitance Diode

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



Type	Marking	Ordering Code	Pin Configuration		Package
BB 535	white S	Q62702-B580	1 = C	2 = A	SOD-323

Maximum Ratings

Parameter	Symbol	Values	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	

Thermal Resistance

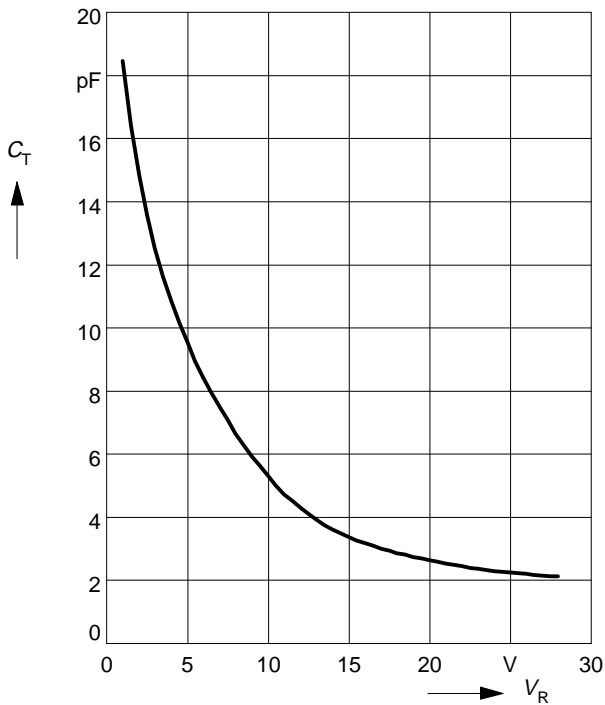
Junction - ambient	R_{thJA}	≤ 450	K/W
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Electrical Characteristics at $T_A=25^\circ\text{C}$, unless otherwise specified

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

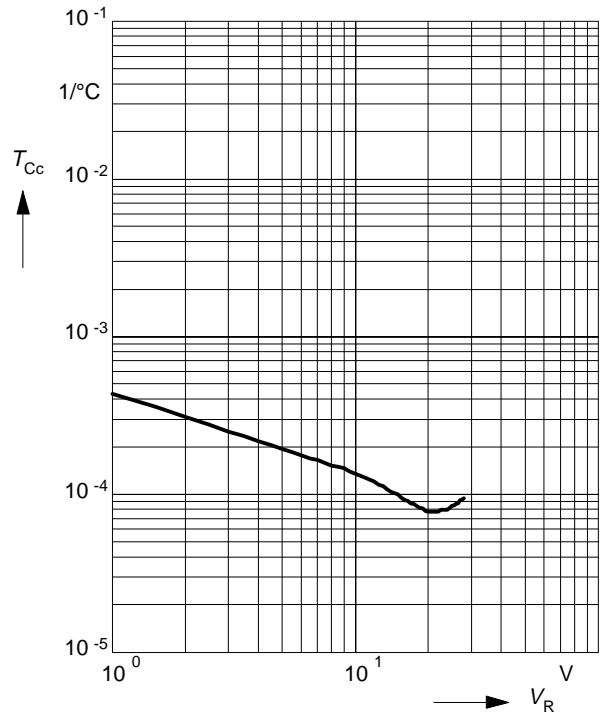
Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$



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

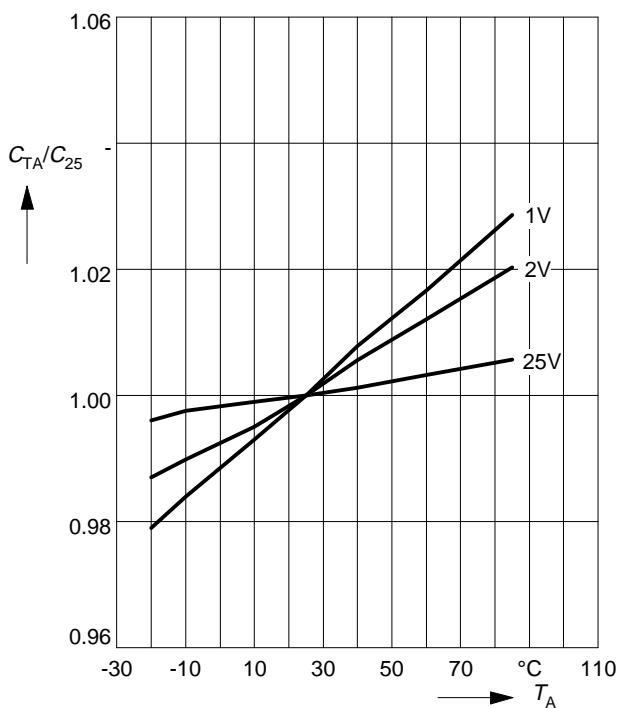
$f = 1\text{MHz}$



Normalized diode capacitance

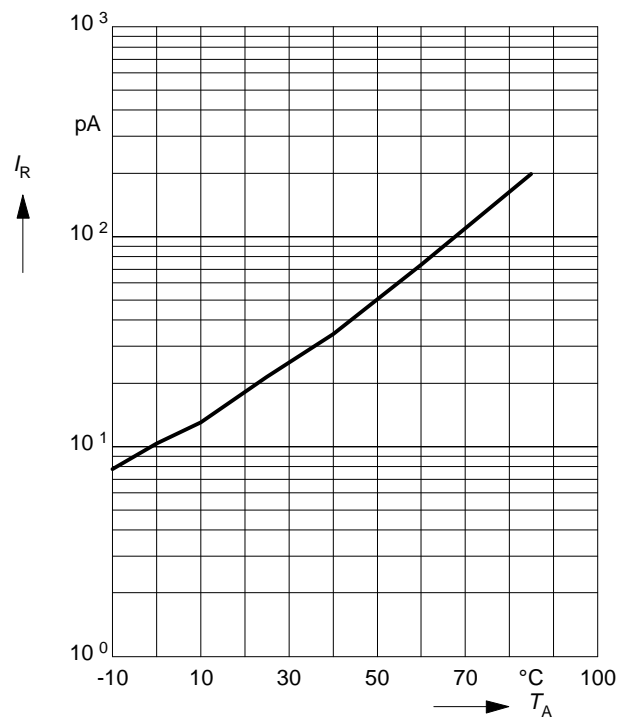
$$C_{(T_A)} / C_{(25^\circ\text{C})} = f(T_A)$$

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



Reverse current $I_R = f(T_A)$

$V_R = 28\text{V}$



Reverse current $I_R = f(V_R)$

$T_A =$ Parameter

