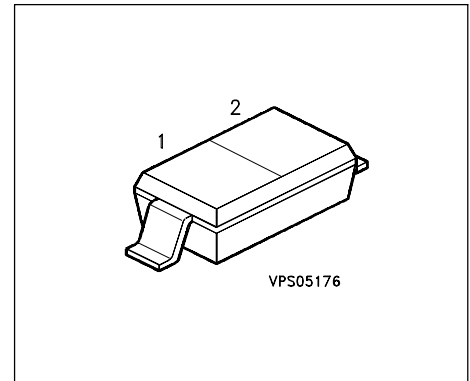


## Silicon Variable Capacitance Diode

- 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

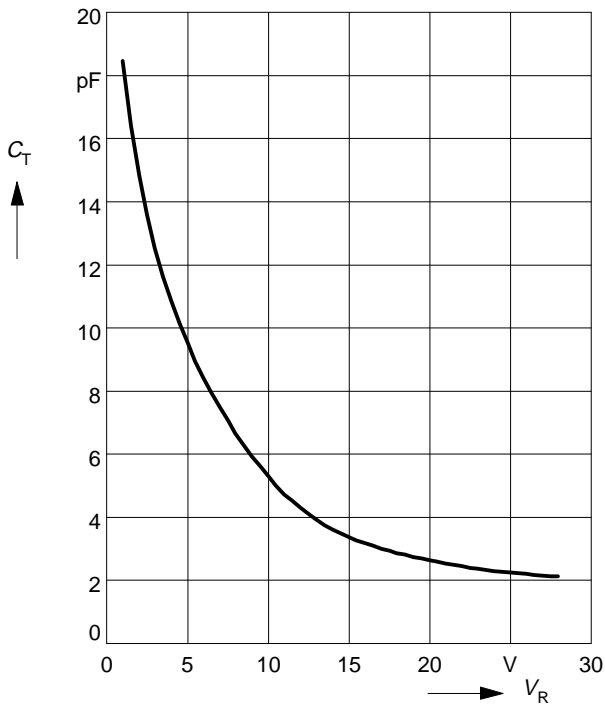
Junction - ambient	$R_{thJA}$	$\leq 450$	K/W
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**Electrical Characteristics at  $T_A=25^\circ\text{C}$ , unless otherwise specified**

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC characteristics</b>					
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	
<b>AC characteristics</b>					
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	$r_s$				$\Omega$
$V_R = 3\text{ V}, f = 470\text{ MHz}$		-	0.55	0.65	
Series inductance	$L_s$				nH
		-	2	-	

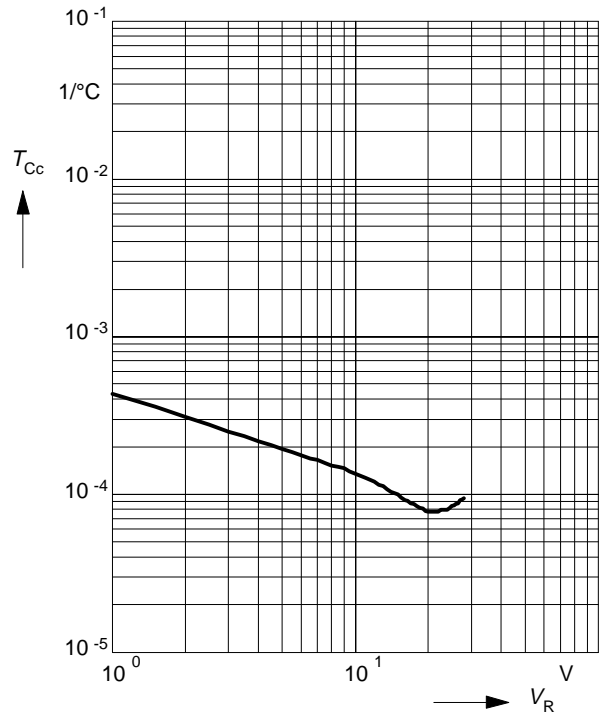
### Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$



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

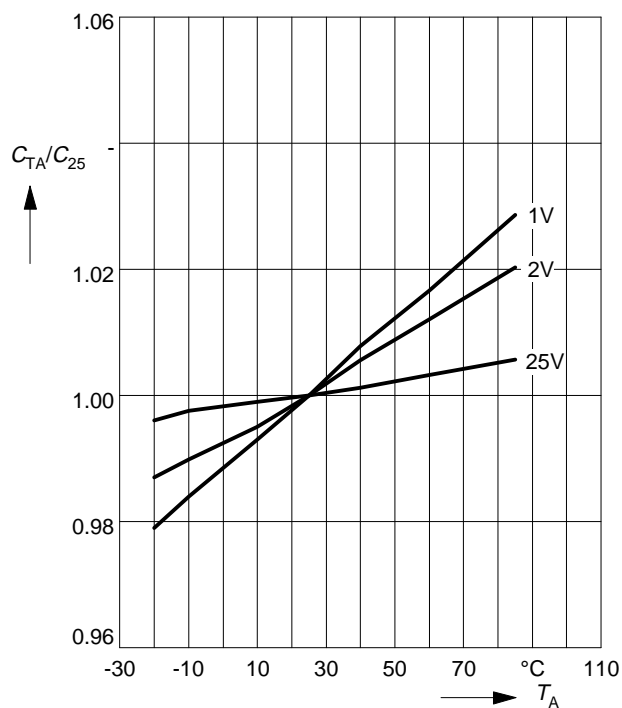
$f = 1\text{MHz}$



### Normalized diode capacitance

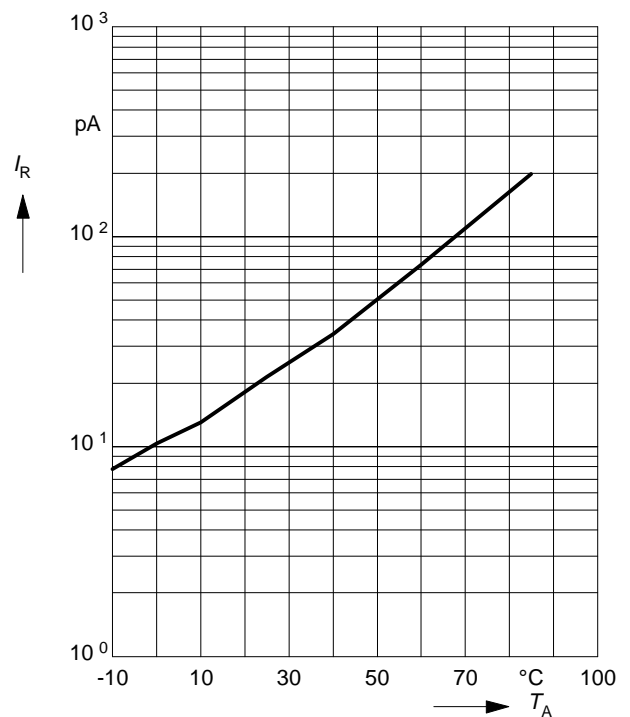
$$C_{(T_A)} / C_{(25^\circ\text{C})} = f(T_A)$$

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



### Reverse current $I_R = f(T_A)$

$V_R = 28\text{V}$



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

$T_A =$  Parameter

