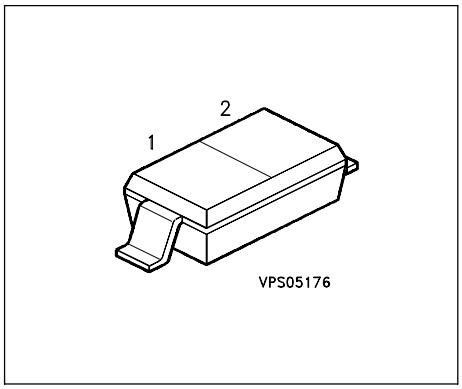
Silicon Variable Capacitance Diode

- 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	

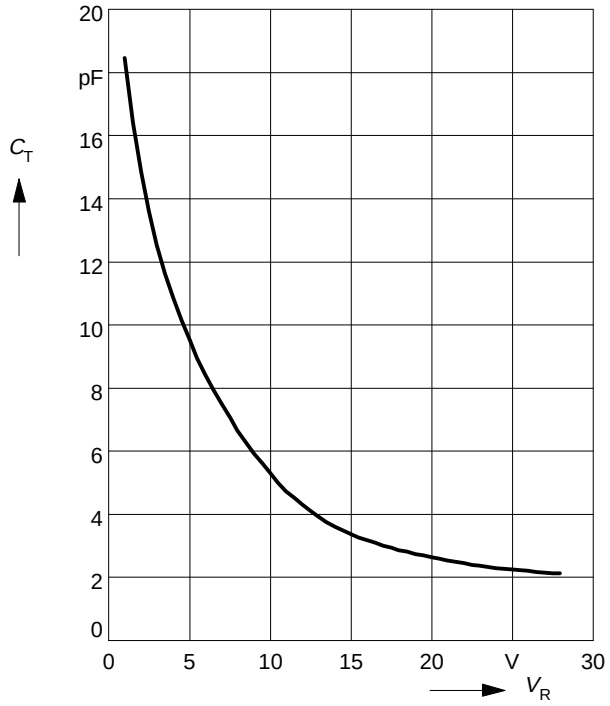
Thermal Resistance

Junction - ambient	R_{thJA}	≤ 450	K/W

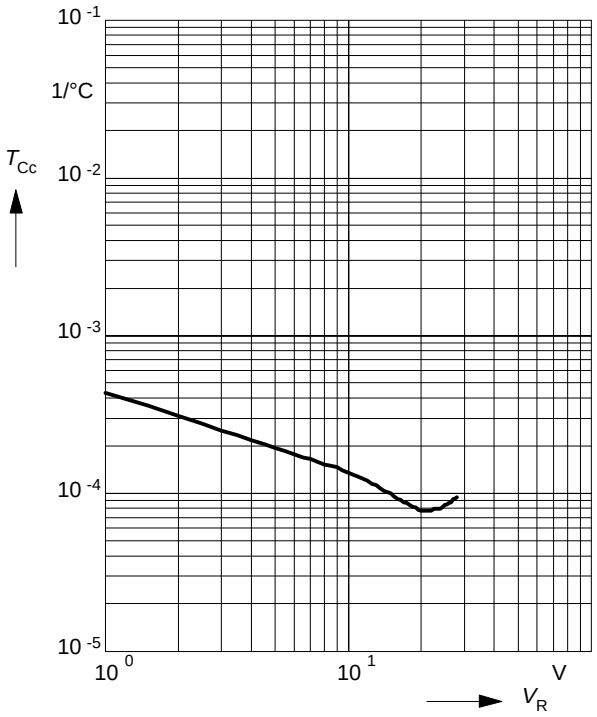
Electrical Characteristics at T_A=25°C, unless otherwise specified

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

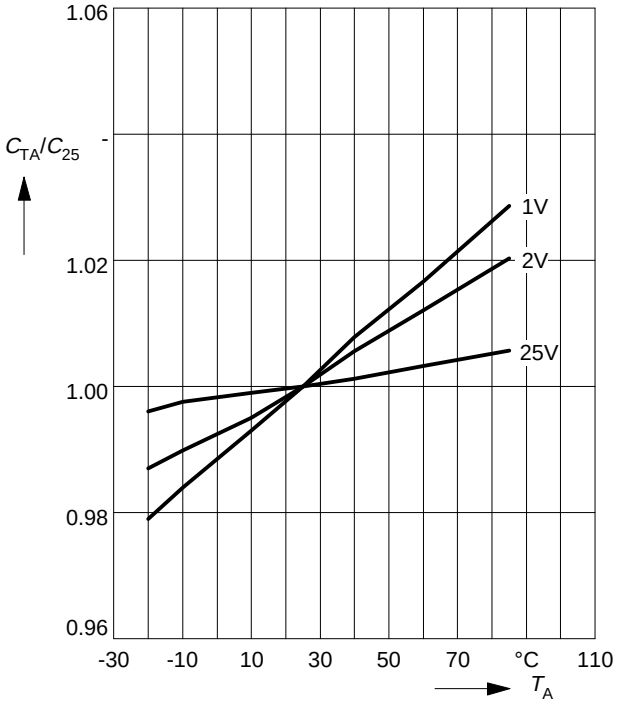
Diode capacitance $C_T = f(V_R)$
f = 1MHz



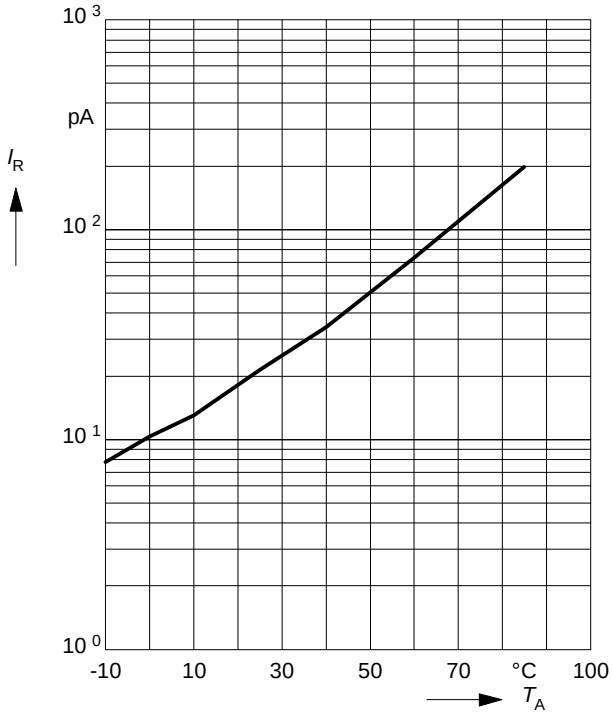
Temperature coefficient of the diode capacitance $T_{Cc} = f(V_R)$
f = 1MHz



Normalized diode capacitance
$C_{(TA)} / C_{(25°C)} = f(T_A)$
f = 1MHz, V_R = Parameter



Reverse current $I_R = f(T_A)$
V_R = 28V



Reverse current $I_R = f(V_R)$

T_A = Parameter