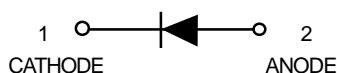


Silicon Variable Capacitance Diode

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

BB 535



MAXIMUM RATINGS

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

THERMAL RESISTANCE

Parameter	Symbol	Value	Unit
Junction - ambient	R_{thJA}	≤ 450	K/W

DC CHARACTERISTICS

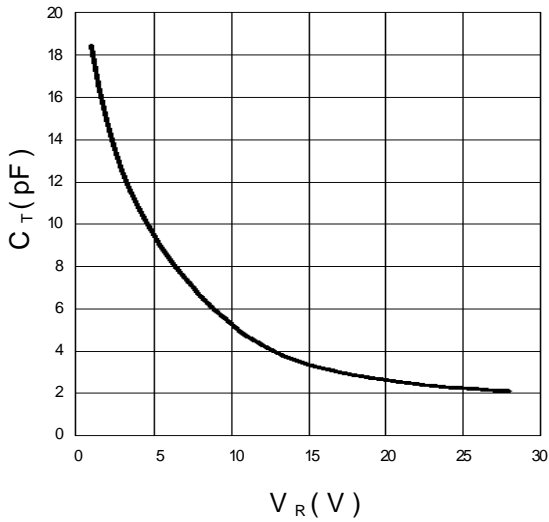
Characteristic	Symbol	Min	Typ	Max	Unit
Reverse current	I_R				nA
$V_R = 30$ V, $T_A = 25$ °C		–	–	10	
$V_R = 30$ V, $T_A = 85$ °C		–	–	200	

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	$\Delta C_T / C_T$				%
$V_R = 1 \dots 28$ 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				nH
		–	2	–	

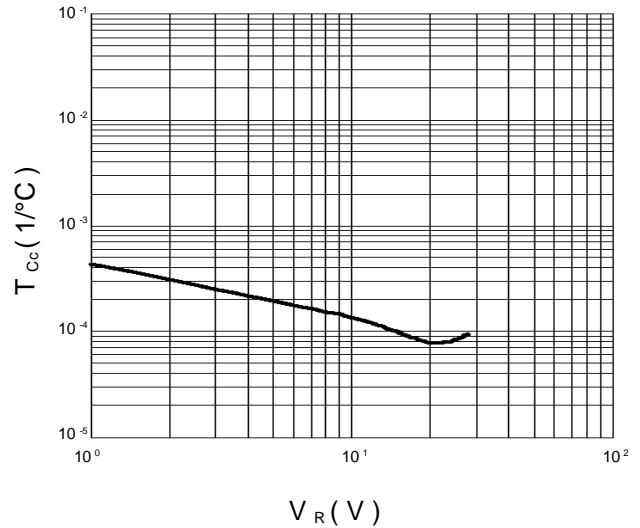
Diode capacitance

$C_T = f(V_R) f = 1\text{MHz}$



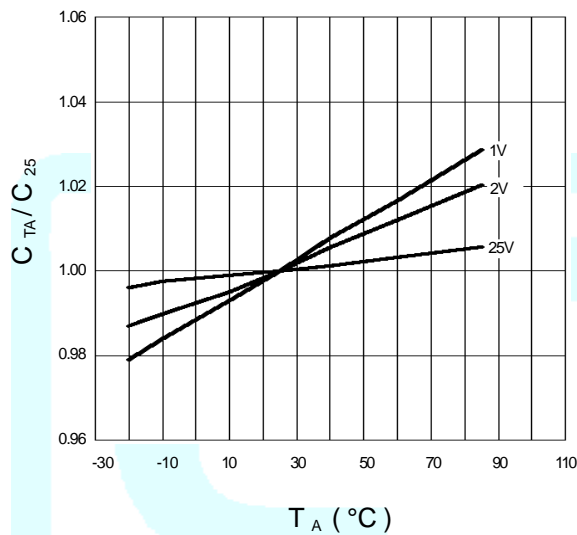
Temperature coefficient of the diode capacitance

$T_{Cc} = f(V_R) f = 1\text{MHz}$



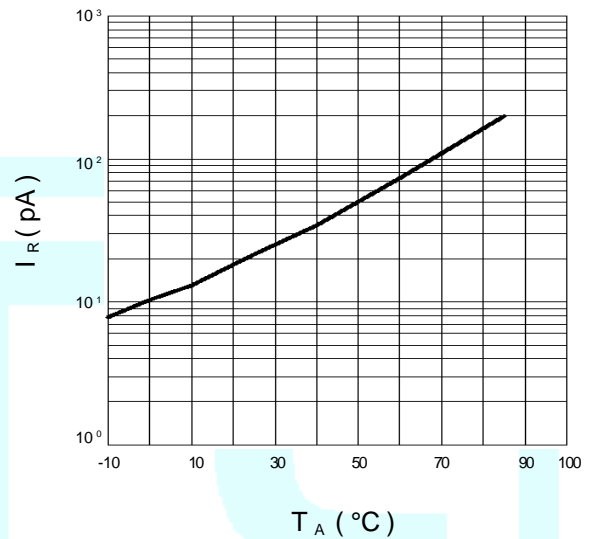
Normalized diode capacitance

$C(T_A) / C(25^\circ\text{C}) = f(T_A), f = 1\text{MHz}, V_R = \text{Parameter}$



Reverse current

$I_R = f(T_A), V_R = 28\text{V}$



Reverse current

$I_R = f(V_R), T_A = \text{Parameter}$

