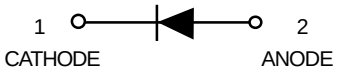
Silicon Variable Capacitance Diode

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

BB 535

CASE 477– 02, STYLE 1
SOD– 323



MAXIMUM RATINGS

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

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 ... 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

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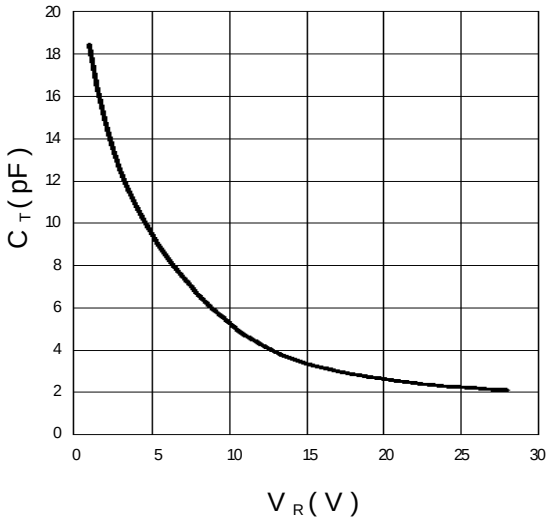
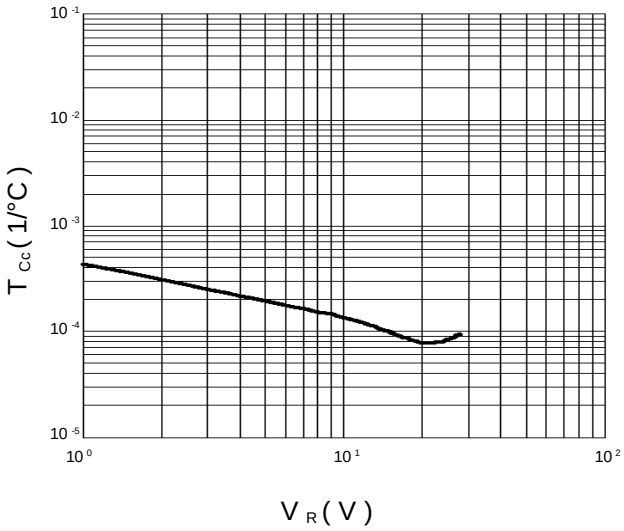
Diode capacitance

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



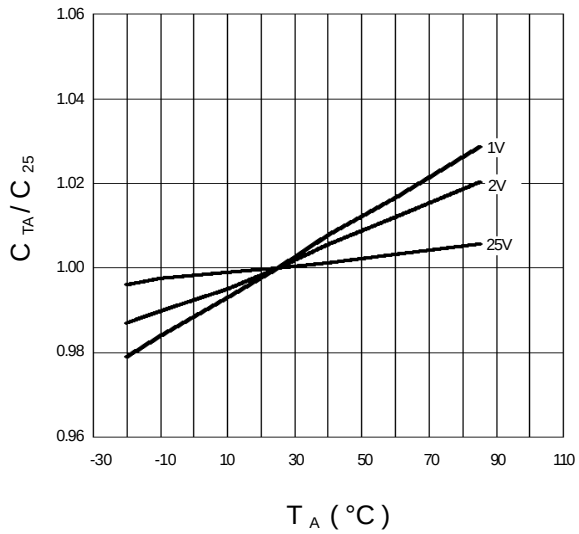
Temperature coefficient of the diodecapacitance

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



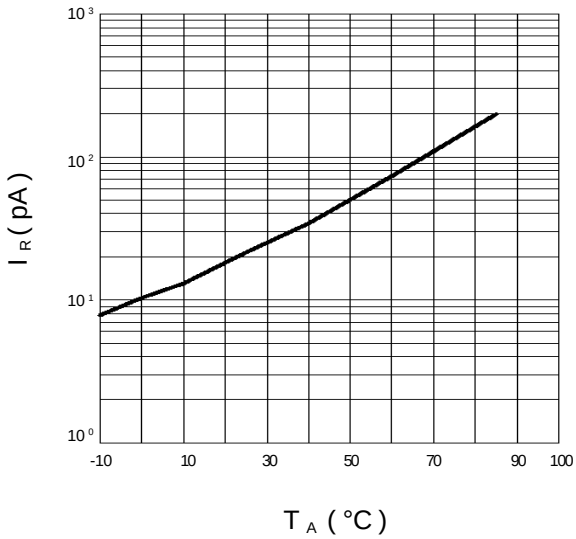
Normalized diode capacitance

$C(T_A) / C(25°C) = f(T_A)$, f = 1MHz, V_R = Parameter



Reverse current

$I_R = f(T_A)$, V_R = 28V



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Reverse current

$I_R = f(V_R)$, T_A = Parameter