Silicon Tuning Diode

* Extended frequency range up to 2.5 GHz;
  special design for use in TV-sat indoor units

* High capacitance ratio

VPS05176
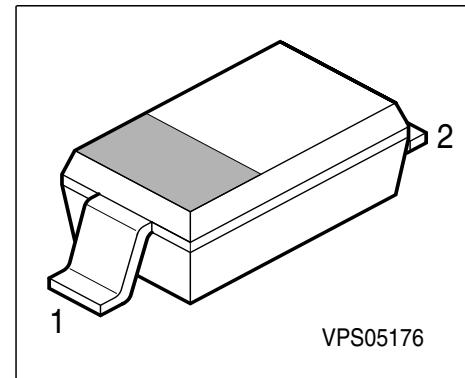
Type	Marking	Pin Configuration		Package
BB 833	white X	1 = C	2 = A	SOD-323

Maximum Ratings

Parameter	Symbol	Value	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 ... 150	°C
Storage temperature	T_{stg}	-55 ... 150	

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC characteristics					
Reverse current V_R = 30 V	I_R	-	-	20	nA
Reverse current V_R = 30 V, T_A = 85 °C	I_R	-	-	500	
AC characteristics					
Diode capacitance V_R = 1 V, f = 1 MHz V_R = 28 V, f = 1 MHz	C_T	8.5 0.6	9.3 0.75	10 0.9	pF
Capacitance ratio V_R = 1 V, V_R = 28 V, f = 1 MHz	C_{T1}/C_{T28}	11	12.4	-	-
Capacitance matching V_R = 1 V, V_R = 28 V, f = 1 MHz	$\Delta C_T/C_T$	-	-	3	%
Series resistance V_R = 1 V, f = 100 MHz	r_S	-	1.8	-	Ω
Series inductance	L_S	-	1.8	-	nH

1) In-line matching. For details please refer to Application Note 047

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Diode capacitance $C_T = f(V_R)$

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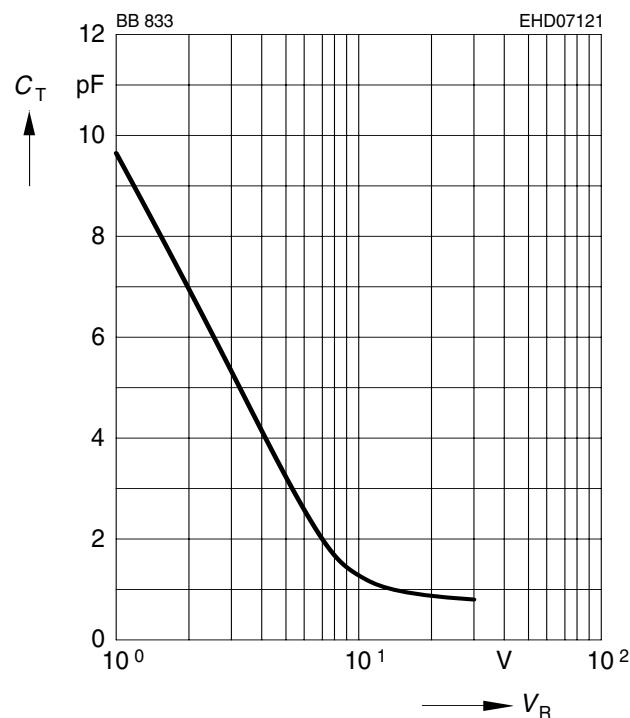
Temperature coefficient of the diode capacitance $T_{Cc} = f(V_R)$

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