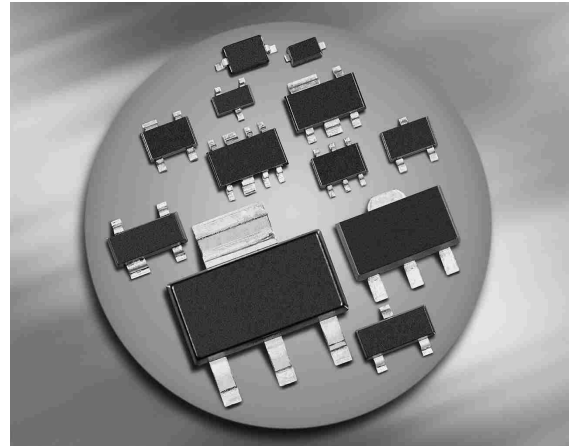
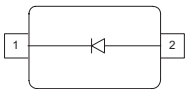


Silicon Tuning Diode

- For SAT -indoor-units
- High capacitance ratio
- Low series resistance
- Excellent uniformity and matching due to "in-line" matching assembly procedure



BB837
BB857



Type	Package	Configuration	L_S (nH)	Marking
BB837	SOD323	single	1.8	M
BB857	SCD80	single	0.6	OO

Maximum Ratings at $T_A = 25^\circ\text{C}$, unless otherwise specified

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

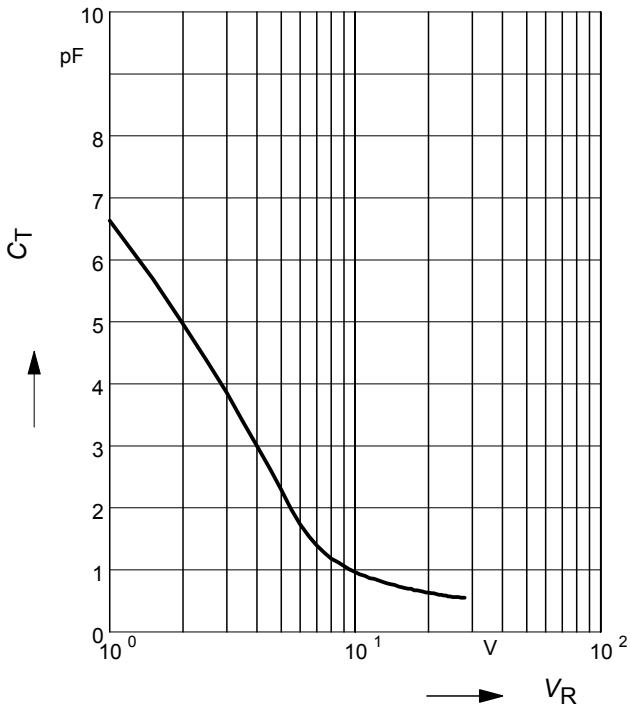
Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Reverse current	I_R				nA
$V_R = 30\text{ V}$		-	-	10	
$V_R = 30\text{ V}, T_A = 85^\circ\text{C}$		-	-	200	
AC Characteristics					
Diode capacitance	C_T				pF
$V_R = 1\text{ V}, f = 1\text{ MHz}$		6	6.6	7.2	
$V_R = 25\text{ V}, f = 1\text{ MHz}$		0.5	0.55	0.65	
$V_R = 28\text{ V}, f = 1\text{ MHz}$		0.45	0.52	-	
Capacitance ratio	C_{T1}/C_{T25}	10.2	12	-	-
$V_R = 1\text{ V}, V_R = 25\text{ V}, f = 1\text{ MHz}$					
Capacitance ratio	C_{T1}/C_{T28}	9.7	12.7	-	
$V_R = 1\text{ V}, V_R = 28\text{ V}, f = 1\text{ MHz}$					
Capacitance matching ¹⁾	$\Delta C_T/C_T$	-	-	5	%
$V_R = 1\text{ V} \dots 28\text{ V}, f = 1\text{ MHz}$					
Series resistance	r_S	-	1.5	-	Ω
$V_R = 5\text{ V}, f = 470\text{ MHz}$					

¹For details please refer to Application Note 047

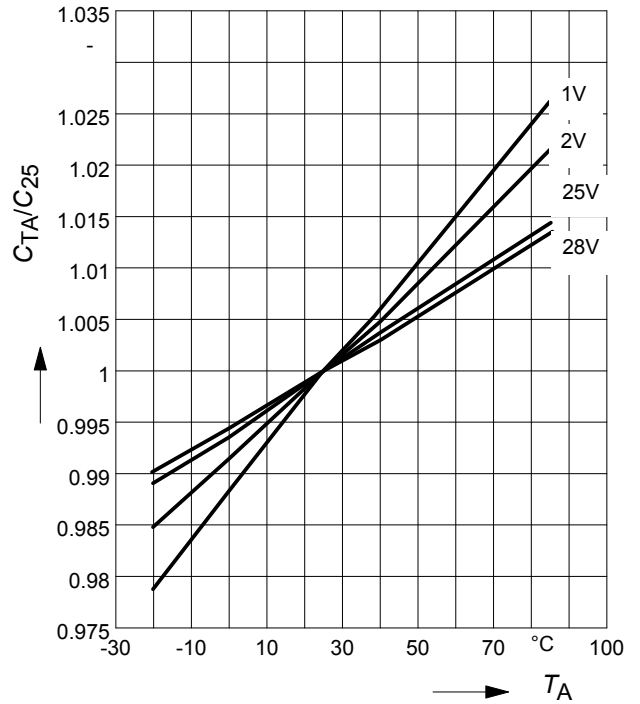
Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$



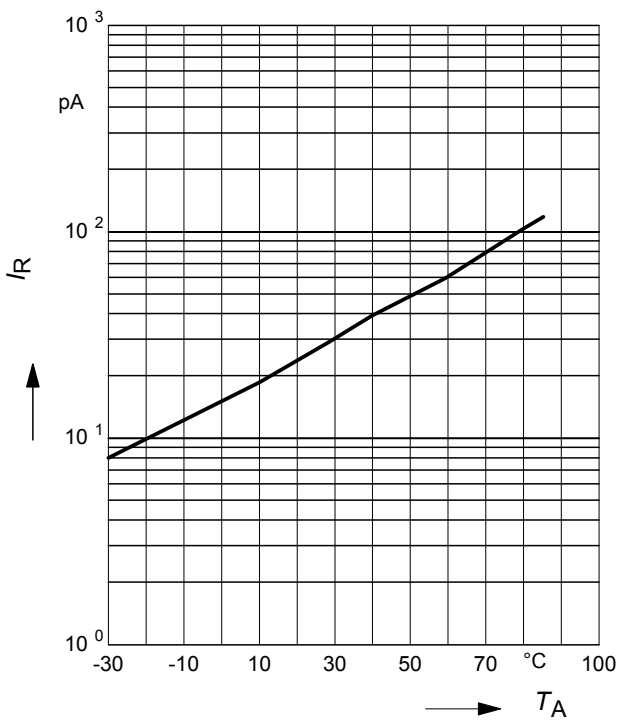
Normalized diode capacitance

$C_{(T_A)}/C_{(25^\circ\text{C})} = f(T_A); f = 1\text{MHz}$



Reverse current $I_R = f(T_A)$

$V_R = 28\text{V}$



Reverse current $I_R = f(V_R)$

$T_A = \text{Parameter}$

