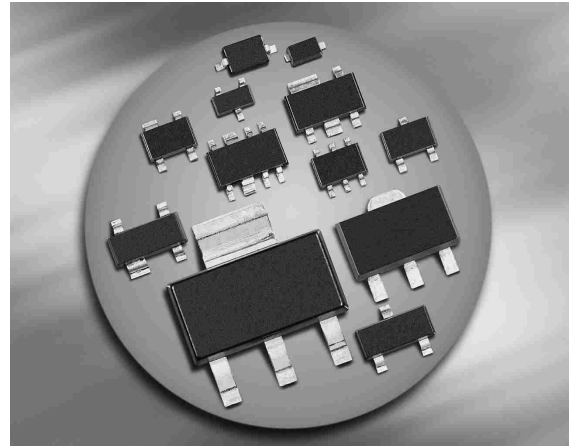
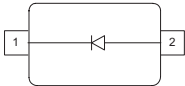


**Silicon Tuning Diode**

- 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	

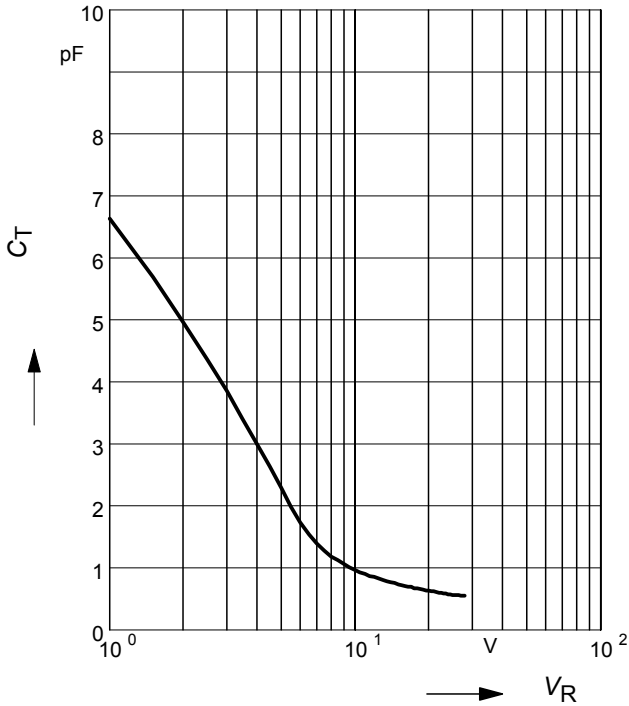
**Electrical Characteristics at  $T_A = 25^\circ\text{C}$ , unless otherwise specified**

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC Characteristics</b>					
Reverse current	$I_R$				nA
$V_R = 30\text{ V}$		-	-	10	
$V_R = 30\text{ V}, T_A = 85^\circ\text{C}$		-	-	200	
<b>AC Characteristics</b>					
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 <sup>1)</sup>	$\Delta C_T/C_T$	-	-	5	%
$V_R = 1\text{ V} \dots 28\text{ V}, f = 1\text{ MHz}$					
Series resistance	$r_S$	-	1.5	-	$\Omega$
$V_R = 5\text{ V}, f = 470\text{ MHz}$					

<sup>1</sup>For details please refer to Application Note 047

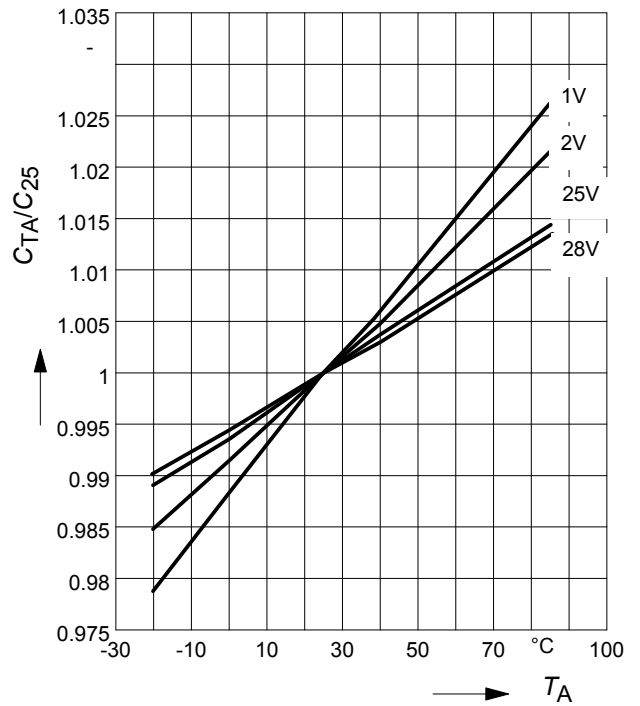
**Diode capacitance  $C_T = f(V_R)$**

$f = 1\text{MHz}$



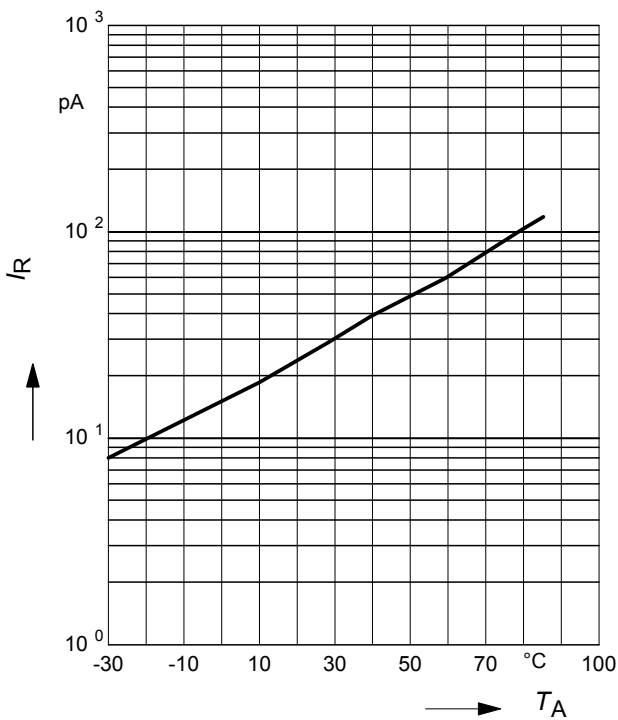
**Normalized diode capacitance**

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



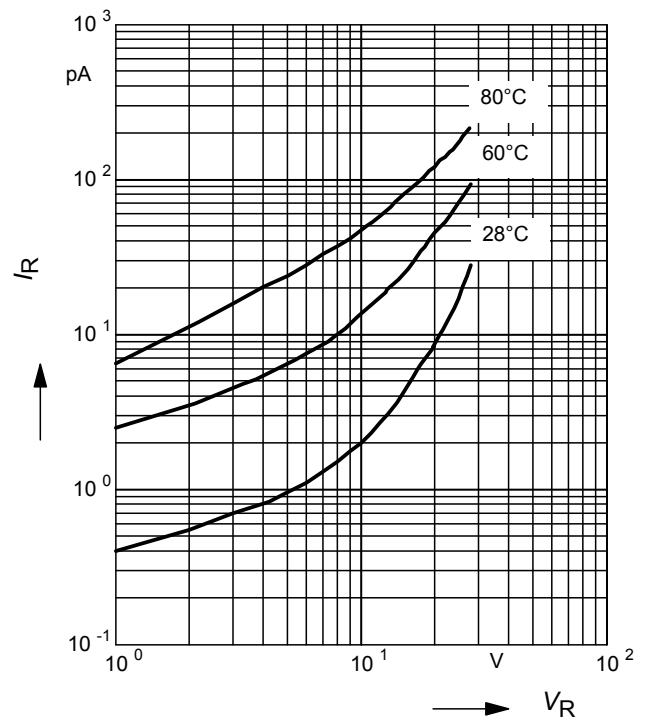
**Reverse current  $I_R = f(T_A)$**

$V_R = 28\text{V}$



**Reverse current  $I_R = f(V_R)$**

$T_A = \text{Parameter}$





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