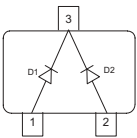


**Silicon Variable Capacitance Diode**

- For FM radio tuner with extended frequency band 77MHz to 108MHz
- Designed for application requiring back-to-back diode configuration for optimum signal distortion and detuning
- High tuning ratio at low supply voltage (car radio)
- Monolithic chip (common cathode) for perfect dual diode tracking
- Good C- V linearity
- High figure of merit
- Pb-free (RoHS compliant) package<sup>1)</sup>
- Qualified according AEC Q101


**BB844**


Type	Package	Configuration	$L_S$ (nH)	Marking
BB844	SOT23	common cathode	1.8	SNs

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

Parameter	Symbol	Value	Unit
Diode reverse voltage	$V_R$	18	V
Peak reverse voltage	$V_{RM}$	20	
Forward current	$I_F$	50	mA
Operating temperature range	$T_{Op}$	-55 ... 150	°C
Storage temperature	$T_{Stg}$	-55 ... 150	

<sup>1</sup>Pb-containing package may be available upon special request

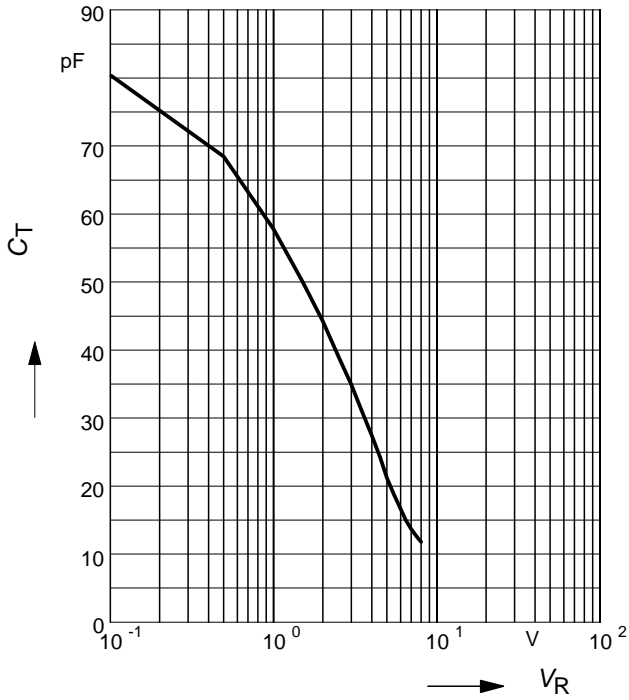
**Electrical Characteristics at  $T_A = 25^\circ\text{C}$ , unless otherwise specified**

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC Characteristics</b>					
Reverse current	$I_R$	-	-	-	nA
$V_R = 16\text{ V}$		-	-	20	
$V_R = 16\text{ V}, T_A = 85^\circ\text{C}$		-	-	200	
<b>AC Characteristics</b>					
Diode capacitance	$C_T$				pF
$V_R = 2\text{ V}, f = 1\text{ MHz}$		42.5	43.75	45	
$V_R = 4\text{ V}, f = 1\text{ MHz}$		25	27	29	
$V_R = 8\text{ V}, f = 1\text{ MHz}$		10	11.5	13	
Capacitance ratio	$C_{T2}/C_{T8}$	3.2	3.8	-	
$V_R = 2\text{ V}, V_R = 8\text{ V}, f = 1\text{ MHz}$					
Capacitance matching <sup>1)</sup>	$\Delta C_T/C_T$	-	-	1.5	%
$V_R = 2\text{ V to } 8\text{ V}, f = 1\text{ MHz}$					
Series resistance	$r_S$	-	0.28	-	$\Omega$
$V_R = 2\text{ V}, f = 100\text{ MHz}$					

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

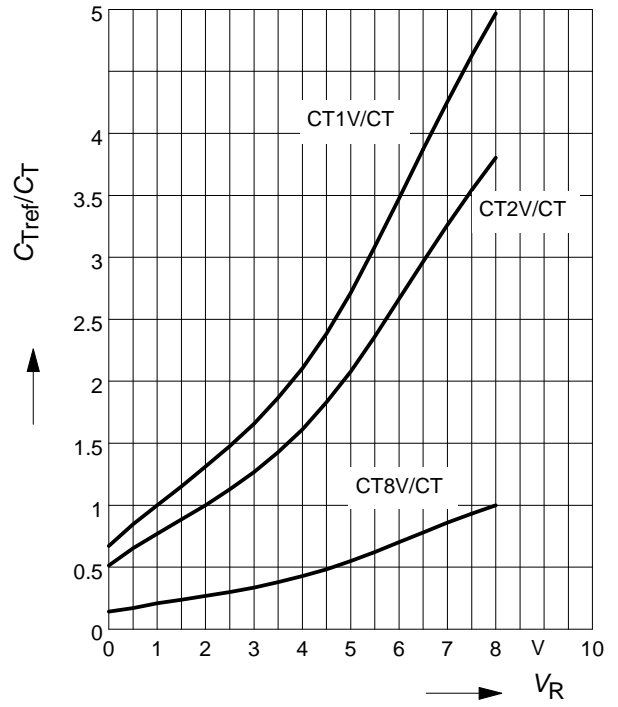
**Diode capacitance  $C_T = f(V_R)$**

$f = 1\text{MHz}$

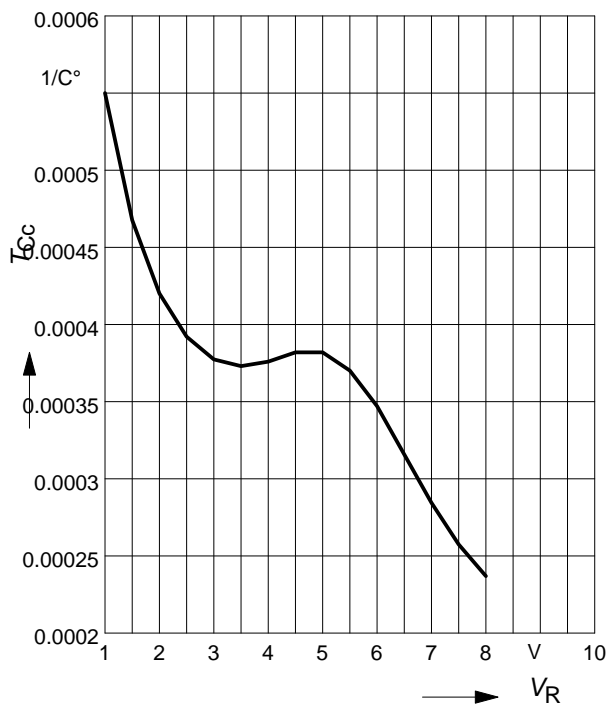


**Capacitance ratio  $C_{Tref}/C_T = f(V_R)$**

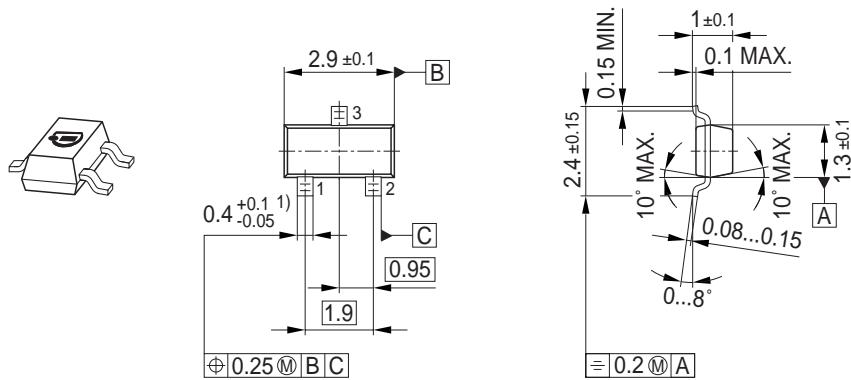
$f = 1\text{MHz}$



**Temperature coefficient of the diode capacitance  $T_{CC} = f(V_R)$**

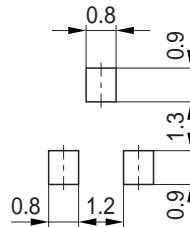


Package Outline

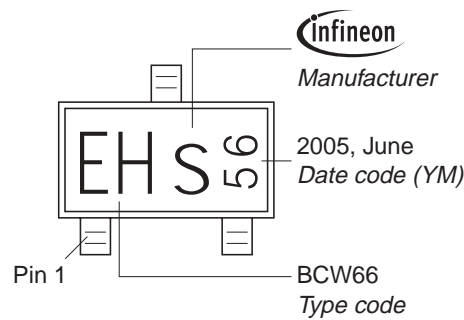


1) Lead width can be 0.6 max. in dambar area

Foot Print

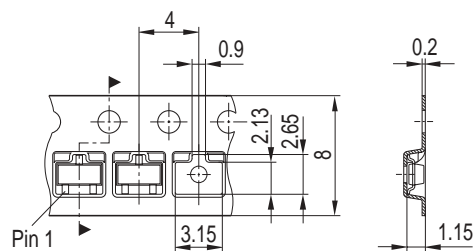


Marking Layout (Example)



Standard Packing

Reel  $\varnothing$ 180 mm = 3.000 Pieces/Reel  
 Reel  $\varnothing$ 330 mm = 10.000 Pieces/Reel



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