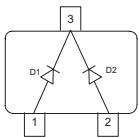


### Silicon Variable Capacitance Diode

- For FM tuners
- Monolithic chip with common cathode for perfect tracking of both diodes
- Uniform "square law" characteristics
- Ideal HiFi tuning device when used in low-distortion, back-to-back configuration
- Pb-free (ROHS compliant) package<sup>1)</sup>
- Qualified according AEC Q101



### BB804



Type	Package	Configuration	$L_S$ (nH)	Marking
BB804	SOT23	common cathode	1.8	SF1/2/3*

\*For differences see next page Capacitance groups

### 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 ... 125	°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 $V_R = 16\text{ V}$ $V_R = 16\text{ V}, T_A = 65^\circ\text{C}$	$I_R$	- -	- -	- 20 200	nA
<b>AC Characteristics</b>					
Diode capacitance <sup>1)</sup> $V_R = 2\text{ V}, f = 1\text{ MHz}$	$C_T$	42	-	47.5	pF
Capacitance ratio $V_R = 2\text{ V}, V_R = 8\text{ V}, f = 1\text{ MHz}$	$C_{T2}/C_{T8}$	1.65	1.71	-	
Series resistance $V_R = 2\text{ V}, f = 100\text{ MHz}$	$r_S$	-	0.18	-	$\Omega$
Figure of merit $f = 100\text{ MHz}, V_R = 2\text{ V}$	$Q$	-	200	-	
Temperature coefficient of diode capacitance $V_R = 2\text{ V}, f = 1\text{ MHz}$	$TC_C$	-	330	-	ppm/K

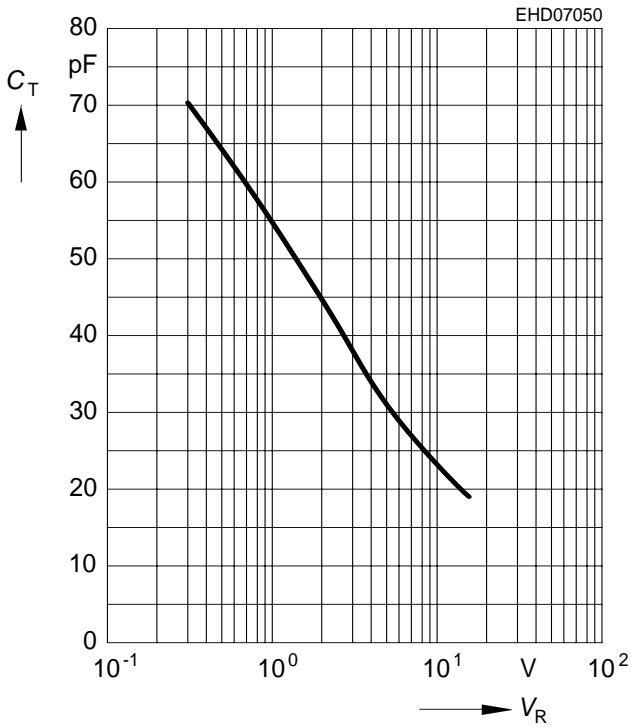
<sup>1</sup> Capacitance groups at 2V, coded 1; 2; 3

$C_T$ /groups	1	2	3
$C_{2V}$ min	43pF	44pF	45pF
$C_{2V}$ max	44.5pF	45.5pF	46.5pF

The capacitance subgroup is marked by the subgroup number printed on the component and the package label. A packing unit (e.g. 8mm tape) contain diodes of one subgroup only. Delivery of different capacitance subgroups requires a special agreement.

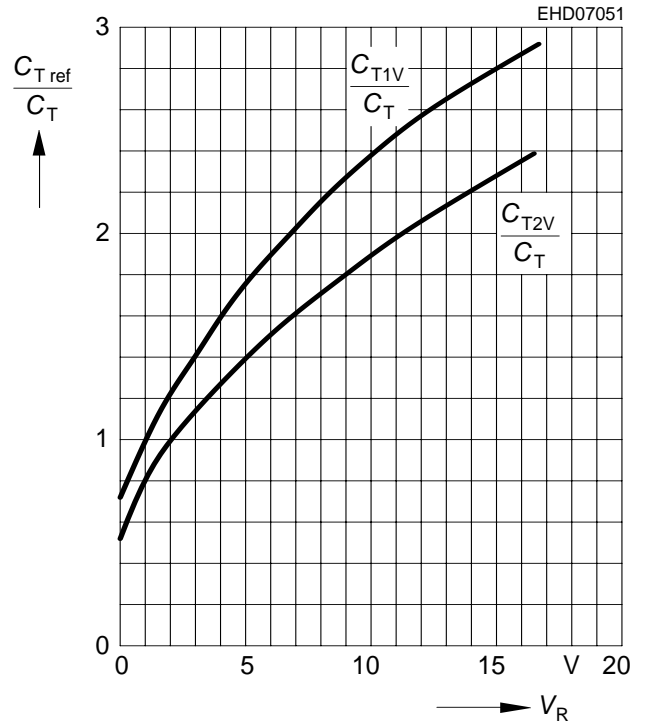
**Diode capacitance  $C_T = f(V_R)$**

$f = 1\text{MHz}$

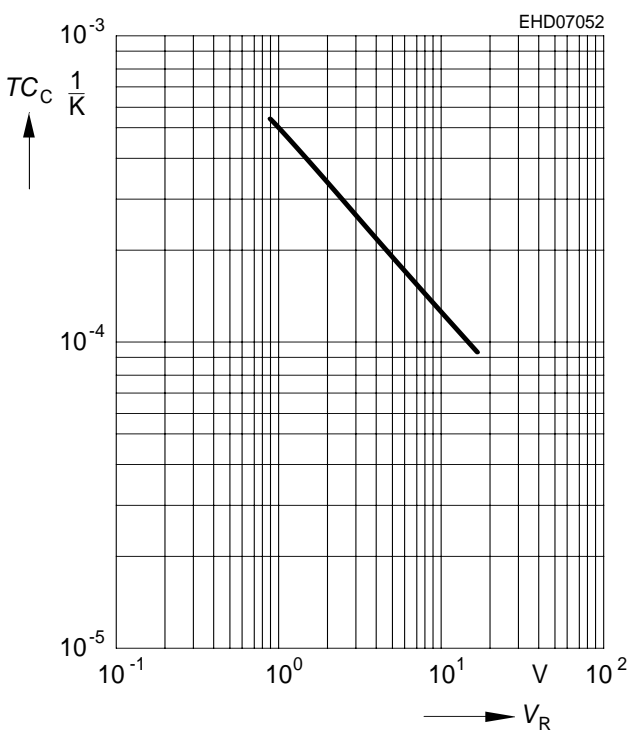


**Capacitance ratio  $C_{Tref}/C_T = f(V_R)$**

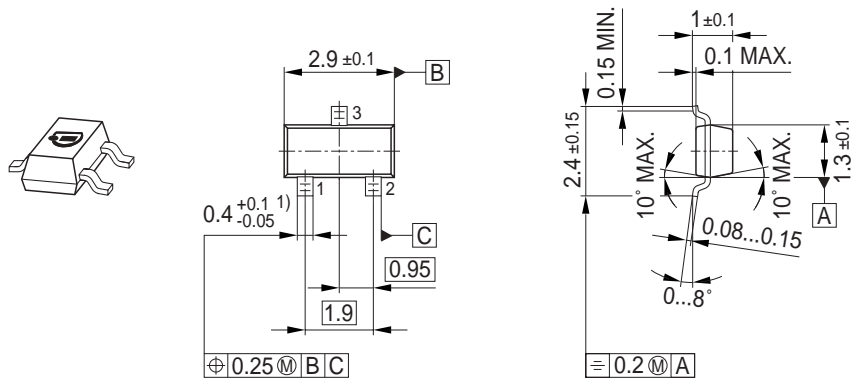
$f = 1\text{MHz}$



**Temperatur coefficient  $TC_C = f(V_R)$**

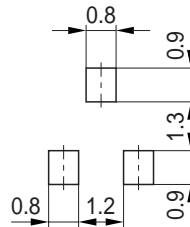


Package Outline

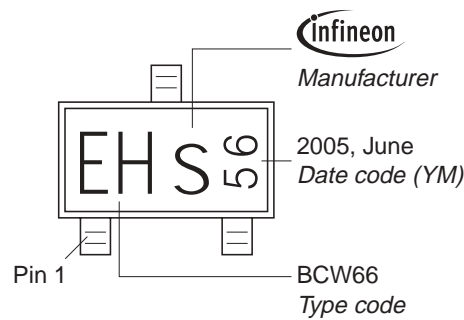


1) Lead width can be 0.6 max. in dambar area

Foot Print

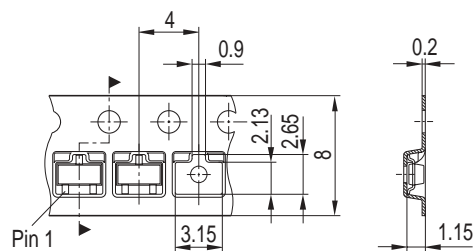


Marking Layout (Example)



Standard Packing

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



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