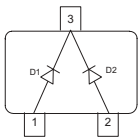


Silicon Variable Capacitance Diode

- 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) package¹⁾
- 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	

¹⁾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.	
DC Characteristics					
Reverse current $V_R = 16\text{ V}$ $V_R = 16\text{ V}, T_A = 65^\circ\text{C}$	I_R	- -	- -	- 20 200	nA
AC Characteristics					
Diode capacitance ¹⁾ $V_R = 2\text{ V}, f = 1\text{ MHz}$	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	-	Ω
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

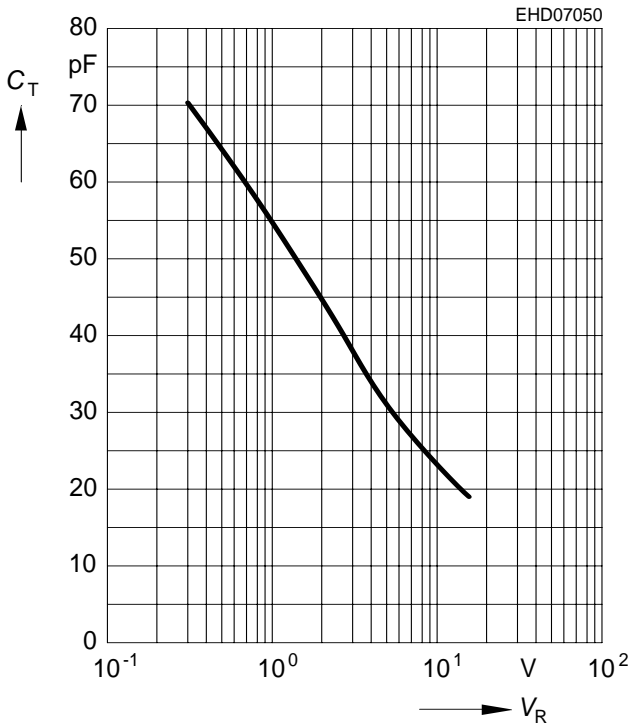
¹ Capacitance groups at 2V, coded 1; 2; 3

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.

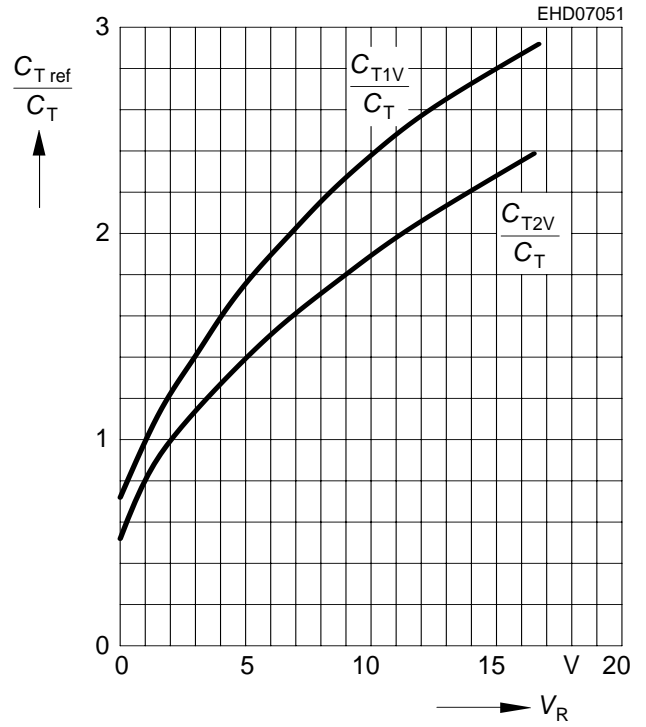
Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$

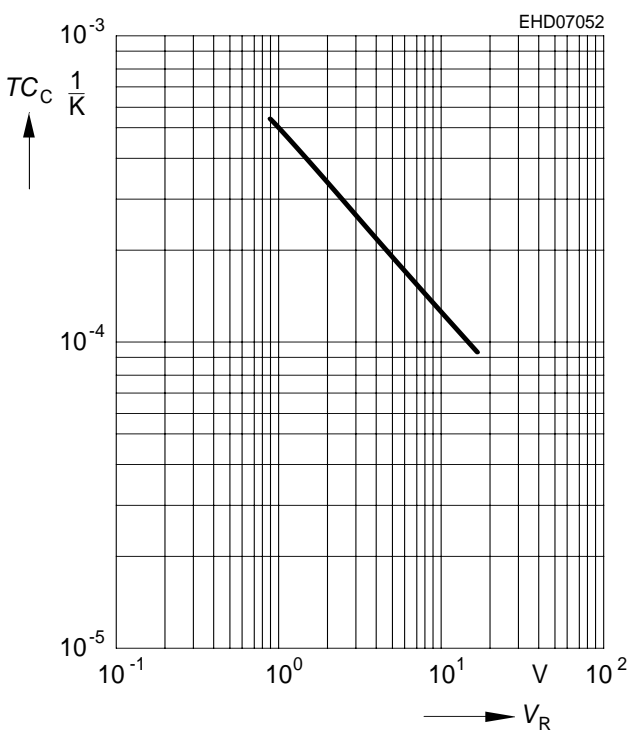


Capacitance ratio $C_{Tref}/C_T = f(V_R)$

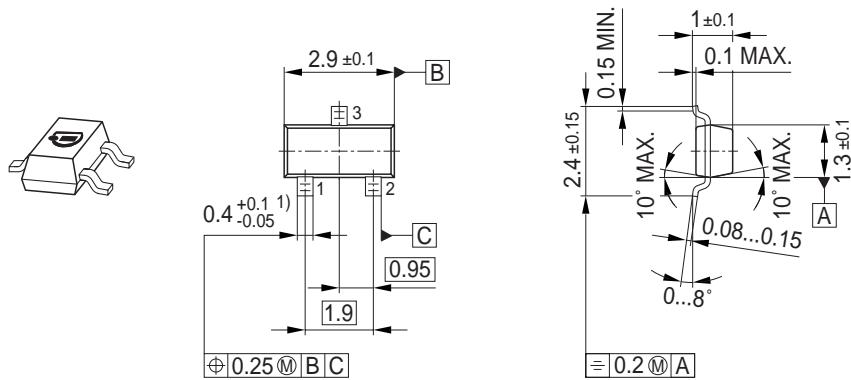
$f = 1\text{MHz}$



Temperatur coefficient $TC_C = f(V_R)$

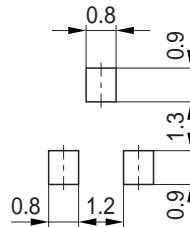


Package Outline

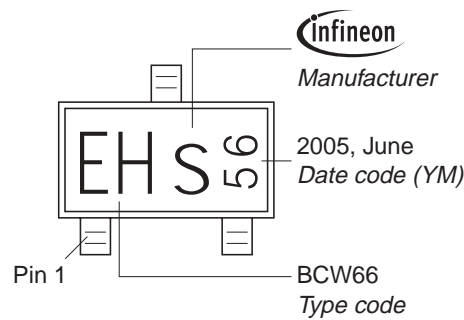


1) Lead width can be 0.6 max. in dambar area

Foot Print

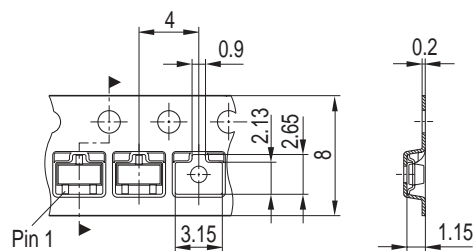


Marking Layout (Example)



Standard Packing

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



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