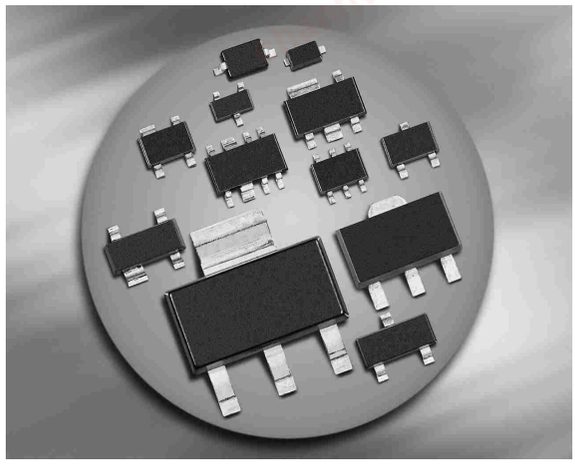
chanhvinh.com

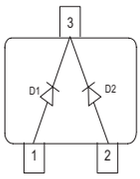
Silicon Variable Capacitance Diodes

- For FM radio tuners with extended frequency band
- High tuning ratio at low supply voltage (car radio)
- Monolithic chip (common cathode) for perfect dual diode tracking
- Coded capacitance groups and group matching available
- Pb-free (RoHS compliant) package



RoHS

BB814



Type	Package	Configuration	L_S(nH)	Marking
BB814	SOT23	common cathode	1.8	SH1/2*

*For differences see next page Capacitance groups

Maximum Ratings at T_A = 25°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	

chanhvinh.com

Electrical Characteristics at T_A = 25°C, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Reverse current	I_R				nA
V_R = 16 V		-	-	20	
V_R = 16 V, T_A = 60 °C		-	-	200	
AC Characteristics					
Diode capacitance[1)]	C_T				pF
V_R = 2 V, f = 1 MHz		43	44.75	46.5	
V_R = 8 V, f = 1 MHz		19.1	20.8	22.7	
Capacitance ratio	C_{T2}/C_{T8}	2.05	2.15	2.25	
V_R = 2 V, V_R = 8 V, f = 1 MHz					
Capacitance matching[2)]	$\Delta C_T/C_T$	-	-	3	%
V_R = 2 V, V_R = 8 V, f = 1 MHz					
Series resistance	r_S	-	0.18	-	Ω
V_R = 2 V, f = 100 MHz					
Q factor	Q	-	200	-	
f = 100 MHz, V_R = 2 V					

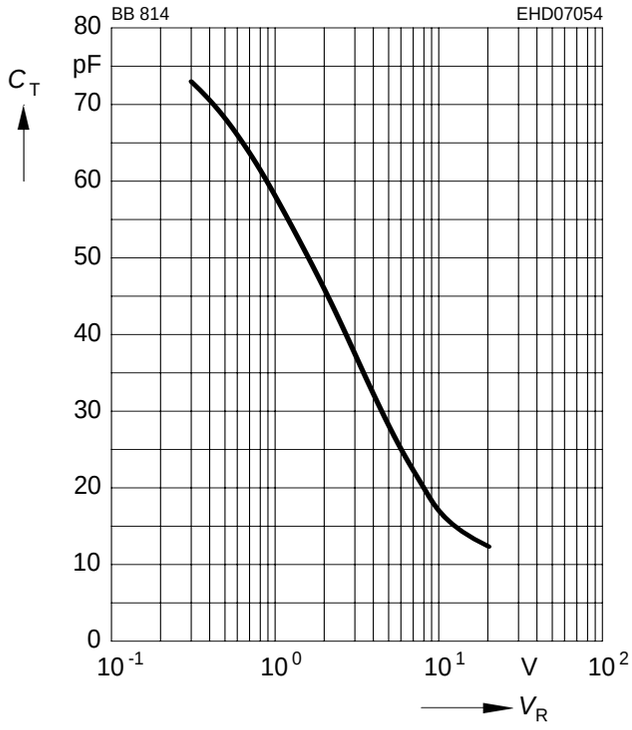
[1]Capacitance groups at 2V and 8V, coded 1; 2

C_T/groups		1	2
C_{2V}	min	43pF	44.5pF
C_{2V}	max	45pF	46.5pF
C_{8V}	min	19.1pF	19.75pF
C_{8V}	max	21.95pF	22.7pF

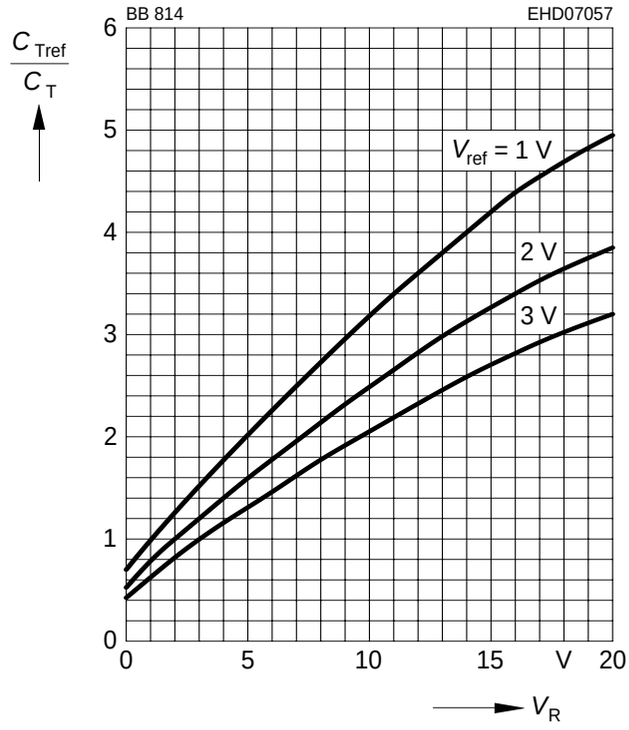
[2]For details please refer to Application Note 047.

chanhvinh.com

Diode capacitance $C_T = f(V_R)$
f = 1MHz

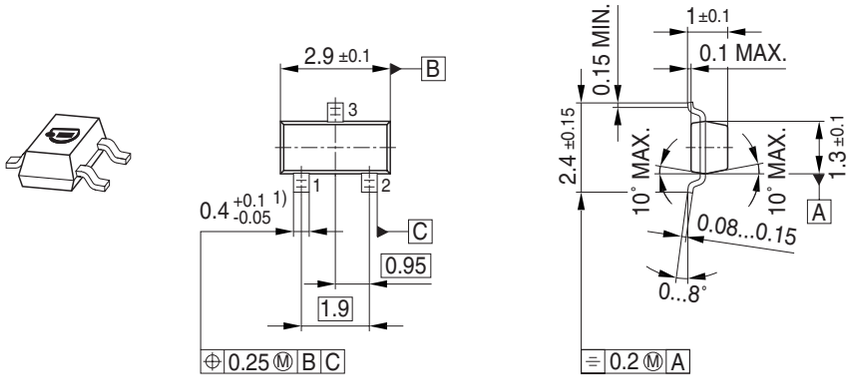


Capacitance ratio $C_{Tref}/C_T = f(V_R)$
f = 1MHz



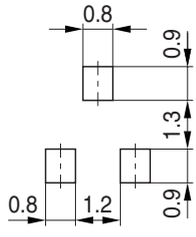
chanhvinh.com

Package Outline

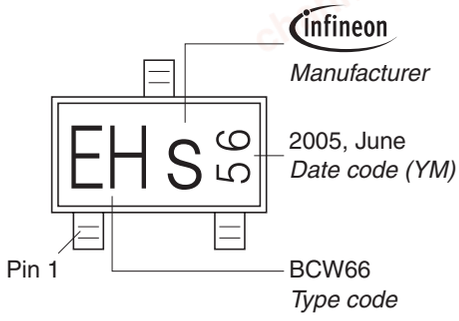


1) Lead width can be 0.6 max. in dambar area

Foot Print

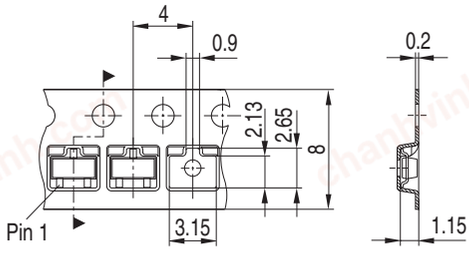


Marking Layout (Example)



Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



chanhvinh.com

Edition 2009-11-16

Published by
Infineon Technologies AG
81726 Munich, Germany

© 2009 Infineon Technologies AG
All Rights Reserved.

Legal Disclaimer

The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics. With respect to any examples or hints given herein, any typical values stated herein and/or any information regarding the application of the device, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind, including without limitation, warranties of non-infringement of intellectual property rights of any third party.

Information

For further information on technology, delivery terms and conditions and prices, please contact the nearest Infineon Technologies Office (<www.infineon.com>).

Warnings

Due to technical requirements, components may contain dangerous substances. For information on the types in question, please contact the nearest Infineon Technologies Office.
Infineon Technologies components may be used in life-support devices or systems only with the express written approval of Infineon Technologies, if a failure of such components can reasonably be expected to cause the failure of that life-support device or system or to affect the safety or effectiveness of that device or system. Life support devices or systems are intended to be implanted in the human body or to support and/or maintain and sustain and/or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.