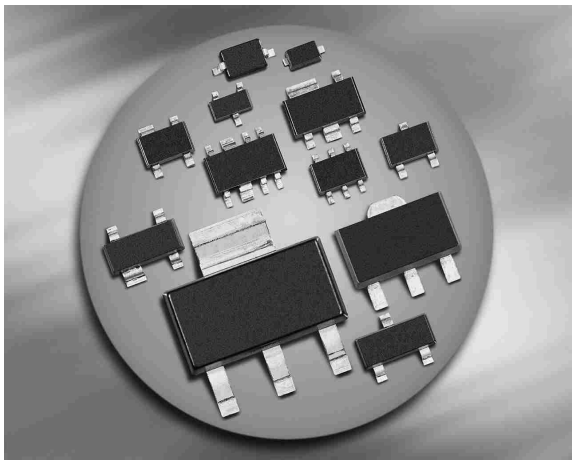
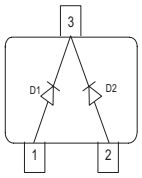
Silicon Variable Capacitance Diodes

- 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	

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

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

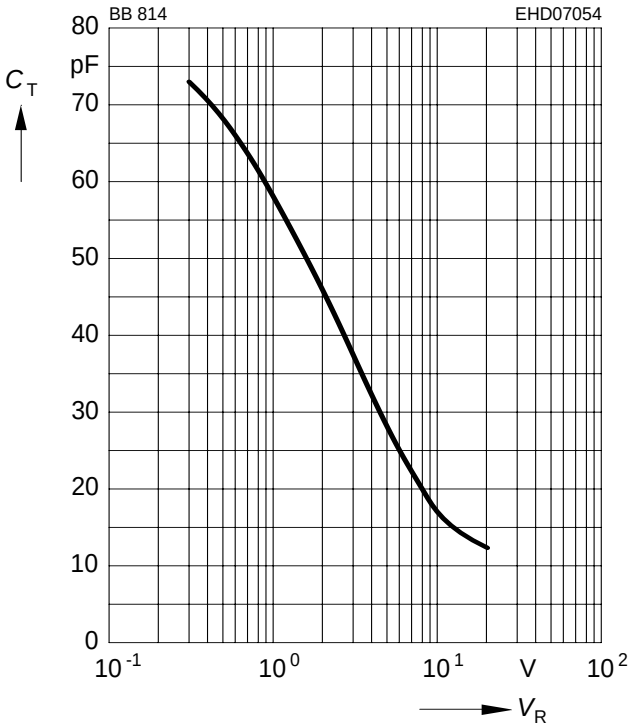
[1]Capacitance groups at 2V and 8V, coded 1; 2

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.

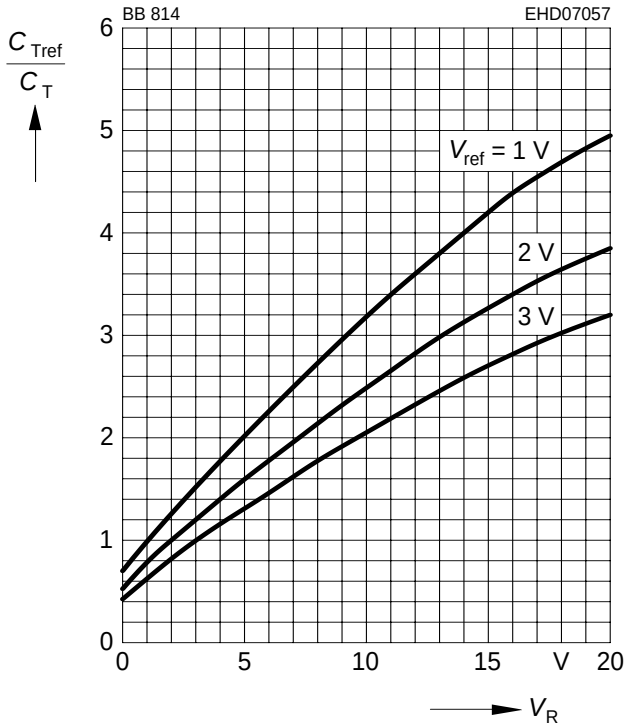
Diode capacitance $C_T = f(V_R)$

f = 1MHz

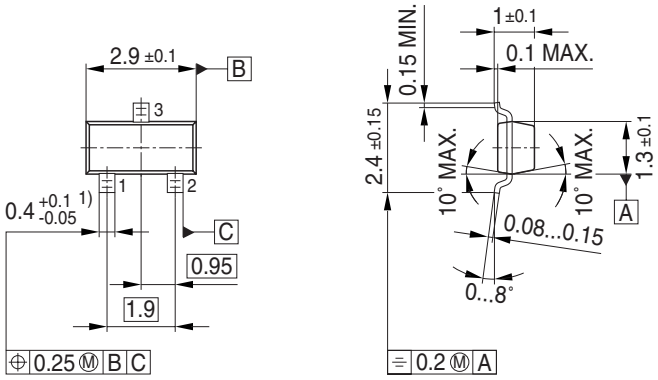


Capacitance ratio $C_{Tref}/C_T = f(V_R)$

f = 1MHz

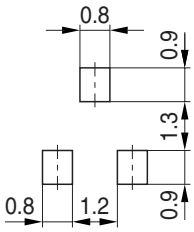


Package Outline

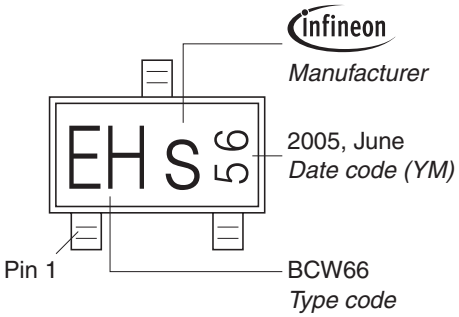


1) Lead width can be 0.6 max. in dambar area

Foot Print

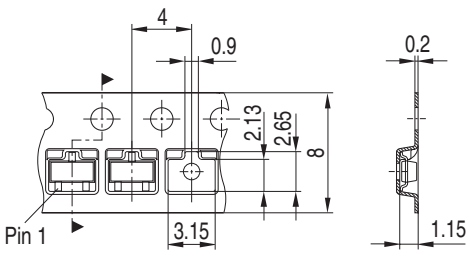


Marking Layout (Example)



Standard Packing

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



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