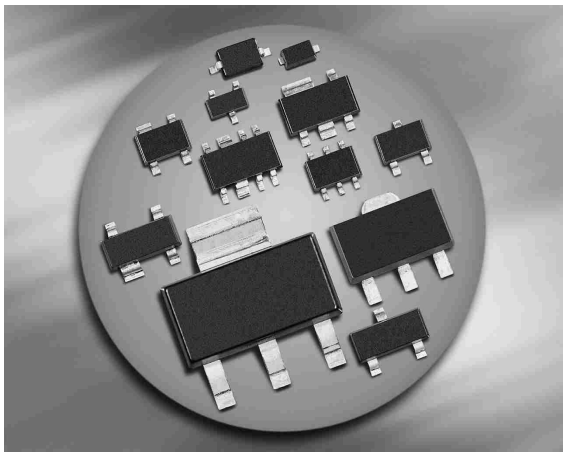
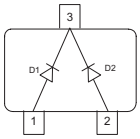
Silicon Variable Capacitance Diodes

- 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



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	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					

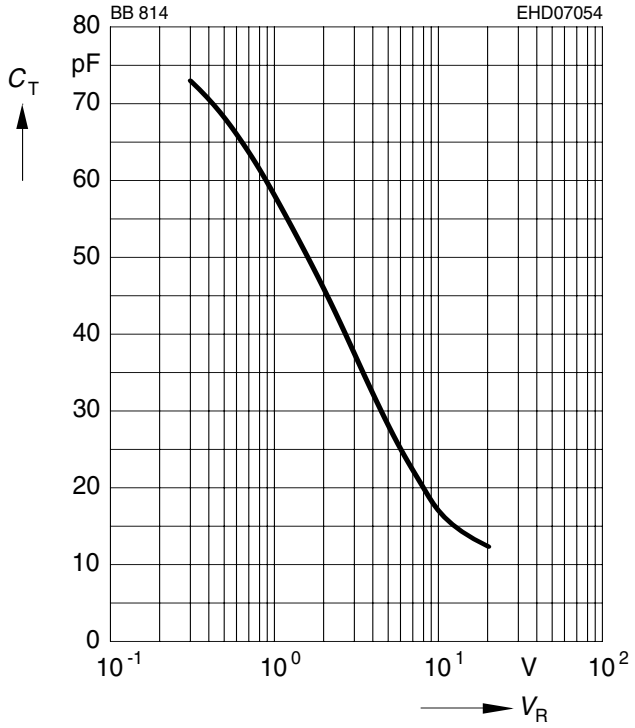
[1]Capacitance groups at 2V and 8V, coded 1; 2

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.

Diode capacitance $C_T = f(V_R)$

f = 1MHz



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

f = 1MHz