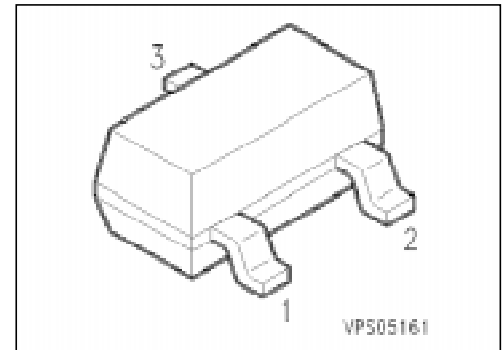


Silicon Variable Capacitance Diode

BB 814

- 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



Type	Ordering Code (tape and reel)	Pin Configuration	Marking	Package
BB 814	Q62702-B404		SH (see Characteristics for marking of capacitance subgroups)	SOT-23

Maximum Ratings per Diode

Parameter	Symbol	Values	Unit
Reverse voltage	V_R	18	V
Peak reverse voltage	V_{RM}	20	
Forward current, $T_A \leq 60 \text{ }^\circ\text{C}$	I_F	50	mA
Operating temperature range	T_{op}	- 55 ... + 125	$^\circ\text{C}$
Storage temperature range	T_{stg}	- 55 ... + 150	

Thermal Resistance

Junction - ambient	$R_{th JA}$	≤ 600	K/W
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Electrical Characteristics

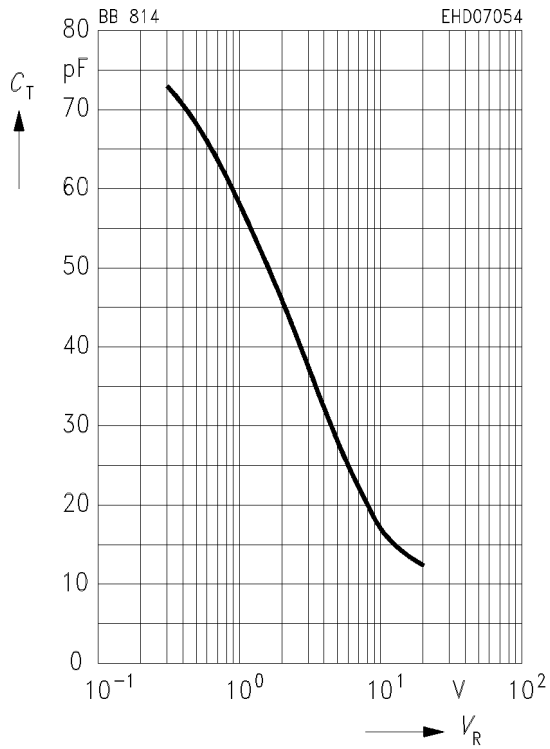
at $T_A = 25\text{ °C}$, unless otherwise specified.

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

¹⁾ Capacitance groups, coded 1, 2

Code	$C_{T(2\text{ V})}$	$C_{T(8\text{ V})}$	Unit
1	43 ... 45	19.1 ... 21.95	pF
2	44.5 ... 46.5	19.75 ... 22.7	pF

Diode capacitance $C_T = f(V_R)$
per diode, $f = 1$ MHz



Capacitance ratio $C_{Tref}/C_T = f(V_R)$
per diode, $V_{ref} = 1$ V, 2 V, 3 V, $f = 1$ MHz

