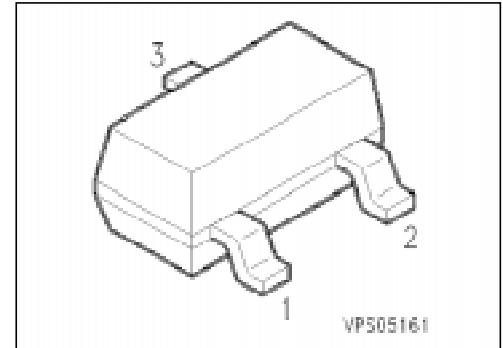


## Silicon Variable Capacitance Diode

BB 804

- 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



Type	Ordering Code (tape and reel)	Pin Configuration	Marking	Package
BB 804	Q62702-B372		SF (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, $T_A \leq 60^\circ\text{C}$	$I_F$	50	mA
Operating temperature	$T_{op}$	100	$^\circ\text{C}$
Storage temperature range	$T_{stg}$	- 65 ... + 150	

### Thermal Resistance

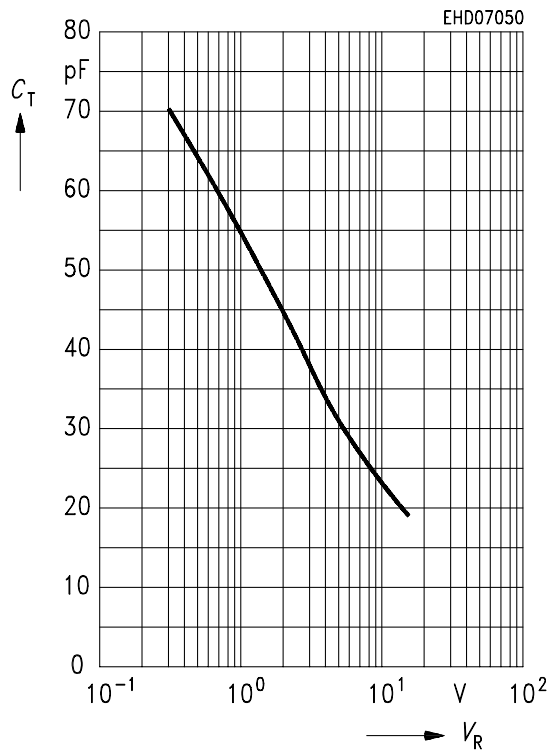
Junction - ambient	$R_{th JA}$	$\leq 600$	K/W
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**Electrical Characteristics per Diode**  
at  $T_A = 25\text{ °C}$ , unless otherwise specified.

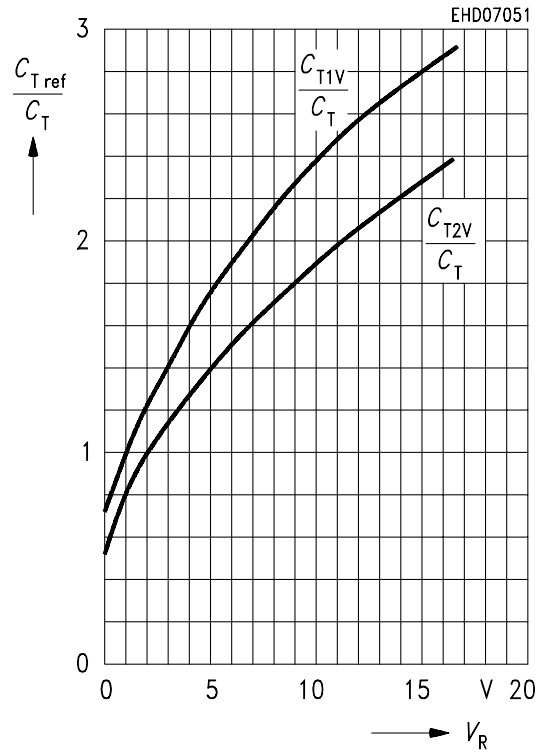
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Reverse current $V_R = 16\text{ V}$ $V_R = 16\text{ V}, T_A = 60\text{ °C}$	$I_R$	– –	– –	20 200	nA
Diode capacitance $V_R = 2\text{ V}, f = 1\text{ MHz}$	$C_T$	42	–	47.5	pF
Capacitance ratio $V_R = 2\text{ V}, 8\text{ V}, f = 1\text{ MHz}$	$\frac{C_{T2}}{C_{T8}}$	1.65	1.71	–	–
Series resistance $V_R = 2\text{ V}, f = 100\text{ MHz}$	$r_s$	–	0.18	–	$\Omega$
Q factor $V_R = 2\text{ V}, f = 100\text{ MHz}$	$Q$	–	200	–	–
Temperature coefficient of diode capacitance $V_R = 2\text{ V}, f = 1\text{ MHz}$	$TC_C$	–	330	–	ppm/K
Diode capacitance <sup>1)</sup> $V_R = 2\text{ V}, f = 1\text{ MHz}$ Subgroups: 0 1 2 3 4	$C_T$	42 43 44 45 46	– – – – –	43.5 44.5 45.5 46.5 47.5	pF

<sup>1)</sup> The capacitance subgroup is marked by the subgroup number printed on the component and the package label. A packaging unit (e.g. 8-mm tape) contains diodes of one subgroup only. Delivery of different capacitance subgroups requires a special agreement.

**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,  $f = 1$  MHz



**Temperature coefficient  $TC_C = f(V_R)$**   
per diode,  $f = 1$  MHz

