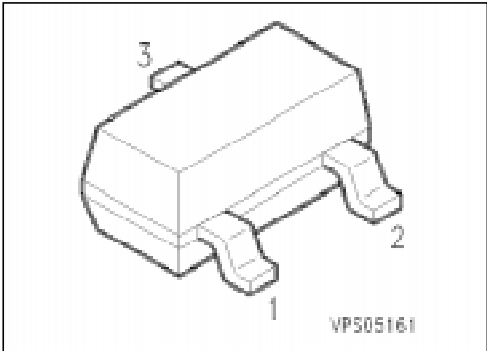


Silicon Variable Capacitance Diode

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	$R_{th JA}$	≤ 600	K/W
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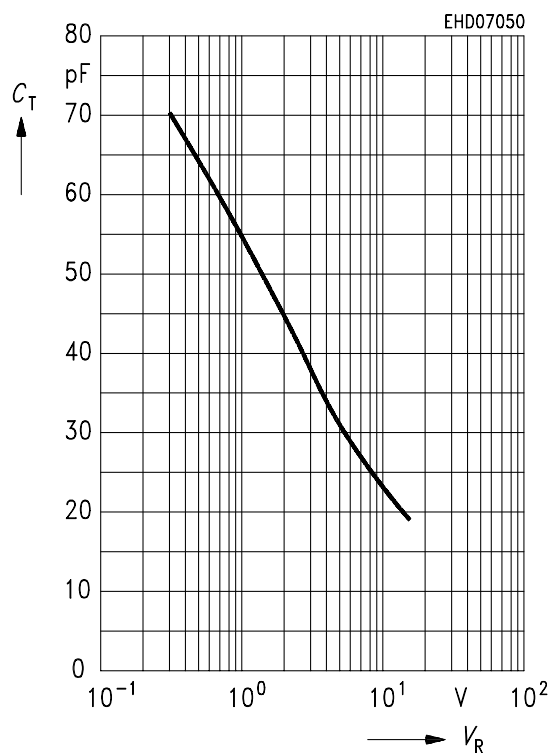
Electrical Characteristics per Diode

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

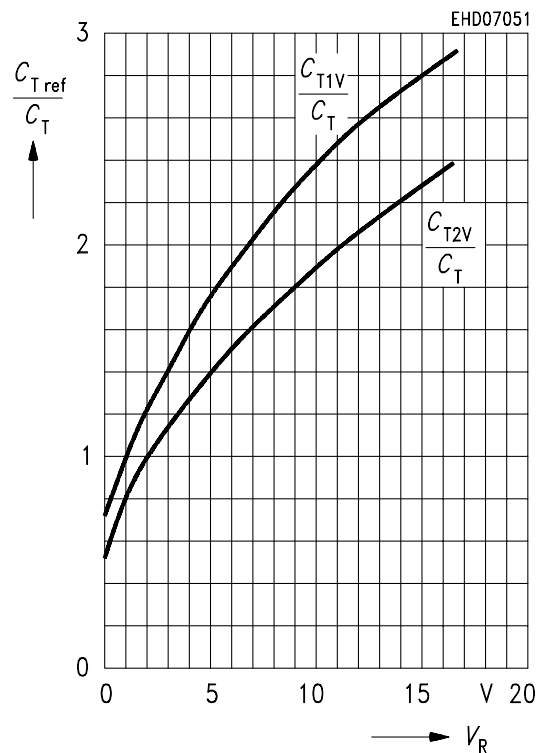
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Reverse current $V_R = 16\text{ V}$ $V_R = 16\text{ V}, T_A = 60\text{ °C}$	I_R	– –	– –	20 200	nA
Diode capacitance $V_R = 2\text{ V}, f = 1\text{ MHz}$	C_T	42	–	47.5	pF
Capacitance ratio $V_R = 2\text{ V}, 8\text{ V}, f = 1\text{ MHz}$	$\frac{C_{T2}}{C_{T8}}$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

¹⁾ 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

