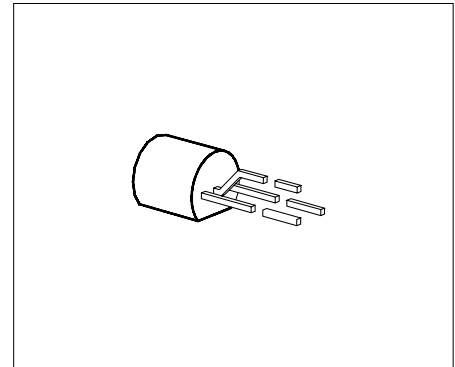


## Silicon Variable Capacitance Diode

BB 304A

### Preliminary Data

- 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
- Color-coded capacitance subgroups available (see characteristics)



Type	Ordering Code (tape and reel)	Pin Configuration			Marking	Package
		1	2	3		
BB 304A	Q62702-B118	A1	C1/C2	A2	color coded capacitance groups	TO-92

### Maximum Ratings

Parameter	Symbol	Values	Unit
Reverse voltage	$V_R$	18	V
Peak reverse voltage ( $R \geq 10 \Omega$ )	$V_{RM}$	20	V
Forward current $T_A \leq 60 \text{ }^\circ\text{C}$	$I_F$	50	mA
Storage temperature range	$T_{stg}$	- 55 ... + 150	$^\circ\text{C}$

### Thermal Resistance

Junction-ambient	$R_{th JA}$	$\leq$	K/W
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## Electrical Characteristics

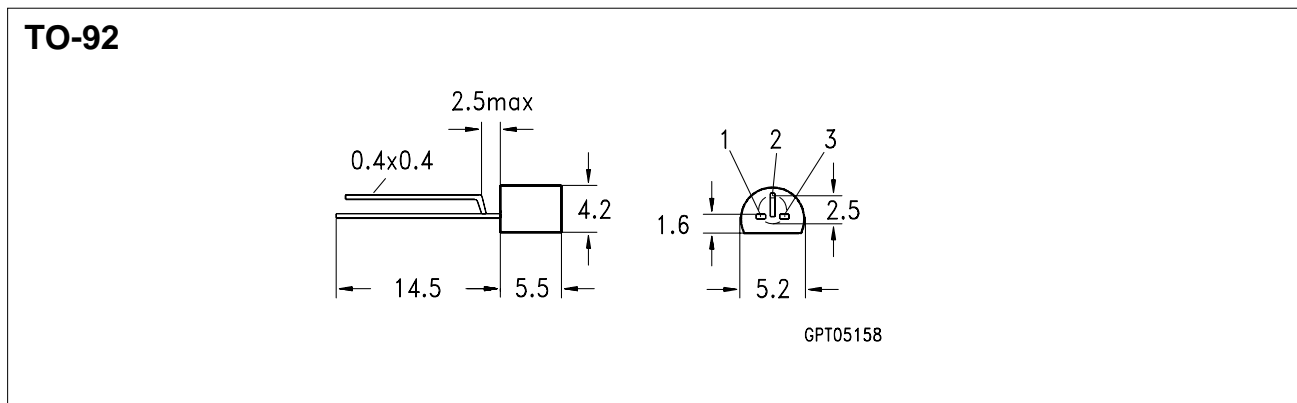
at  $T_A = 25\text{ °C}$ , unless otherwise specified.

Parameter	Symbol	Value			Unit
		min.	typ.	max.	

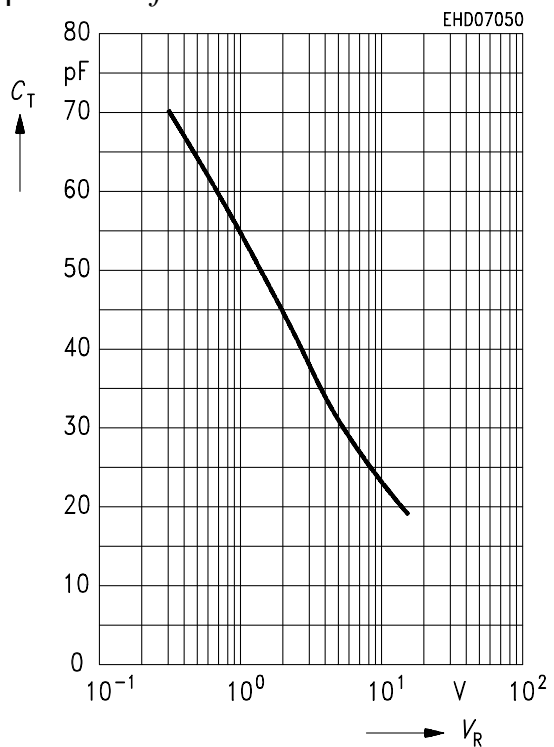
### DC Characteristics

Reverse current $V_R = 16\text{ V}$ $V_R = 16\text{ V}, T_A = 60\text{ °C}$	$I_R$	– –	– –	20 200	nA
Diode capacitance $V_R = 2\text{ V}, f = 1\text{ MHz}$	$C_T$	42	–	47.5	pF
Capacitance ratio $V_R = 2\text{ V} \dots 8\text{ V}, f = 1\text{ MHz}$	$C_{T2}/C_{T8}$	1.65	–	– 1.75	–
Series resistance $V_R = 38\text{ V}, f = 100\text{ MHz}$	$r_S$	–	0.25	0.4	$\Omega$
Q factor $C_T = 38\text{ pF}, f = 100\text{ MHz}$	$Q$	100	170	–	–
Diode capacitance $V_R = 2\text{ V}, f = 1\text{ MHz}$ Subgroup: red yellow white green blue	$C_T$	42 43 44 45 46	– – – – –	43.5 44.5 45.5 46.5 47.5	pF

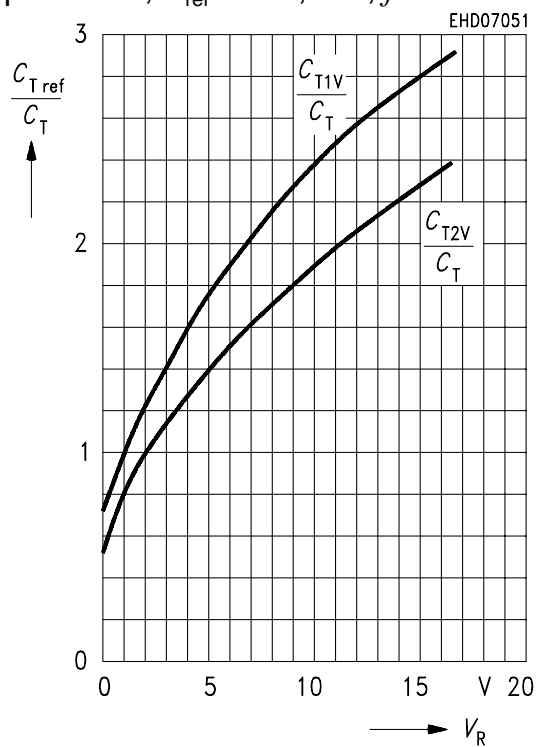
### Package Outline



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



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



**Temperature coefficient  $T_{CC} = f(V_R)$**   
per diode,  $f = 1$  MHz

