

Silicon Variable Capacitance Diode

- For FM radio tuner with extended frequency band
- High tuning ratio low supply voltage (car radio)
- Monolithic chip (common cathode) for perfect dual diode tracking
- Good linearity of C-V curve
- High figure of merit



Type	Marking	Ordering Code	Pin Configuration			Package
BB 914	SMS	Q62702-B673	1 = A1	2 = A2	3=C1/2	SOT-23

Maximum Ratings

Parameter	Symbol	Values	Unit
Diode 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 range	T_{op}	- 55 ... + 125	°C
Storage temperature	T_{stg}	- 55 ... + 150	

Thermal Resistance

Junction - ambient	R_{thJA}	≤ 600	K/W
--------------------	------------	------------	-----

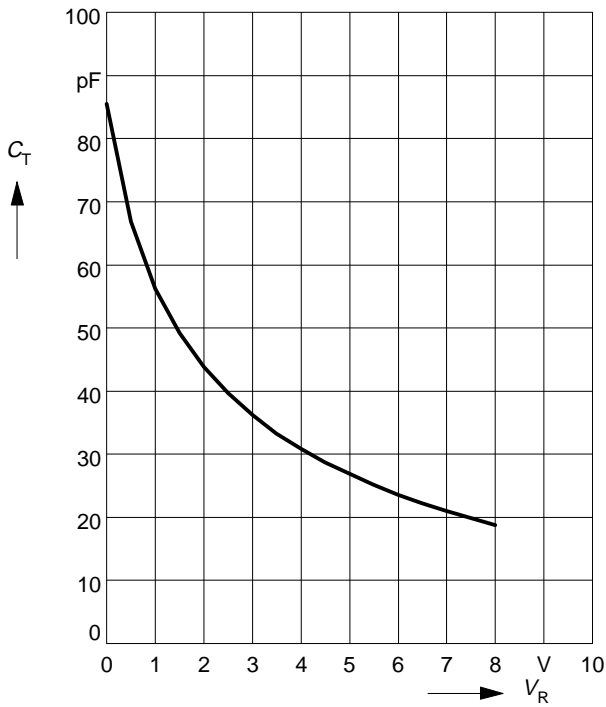
Electrical Characteristics at $T_A=25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC characteristics					
Reverse current $V_R = 16\text{ V}, T_A = 25^\circ\text{C}$ $V_R = 16\text{ V}, T_A = 60^\circ\text{C}$	I_R	- -	- -	20 200	nA
AC characteristics					
Diode capacitance $V_R = 2\text{ V}, f = 1\text{ MHz}$ $V_R = 8\text{ V}, f = 1\text{ MHz}$	C_T	42.5 17.6	43.75 18.7	45 19.75	pF
Capacitance ratio $V_R = 2\text{ V}, V_R = 8\text{ V}, f = 1\text{ MHz}$	C_{T2}/C_{T8}	2.28	2.34	2.42	-
Capacitance matching 2) $V_R = 2\text{ V}, V_R = 8\text{ V}, f = 1\text{ MHz}$	$\Delta C_T/C_T$	-	-	1.5	%
Series resistance $C_T = 38\text{ pF}, f = 100\text{ MHz}$	r_s	-	0.28	-	Ω

Diode capacitance per diode

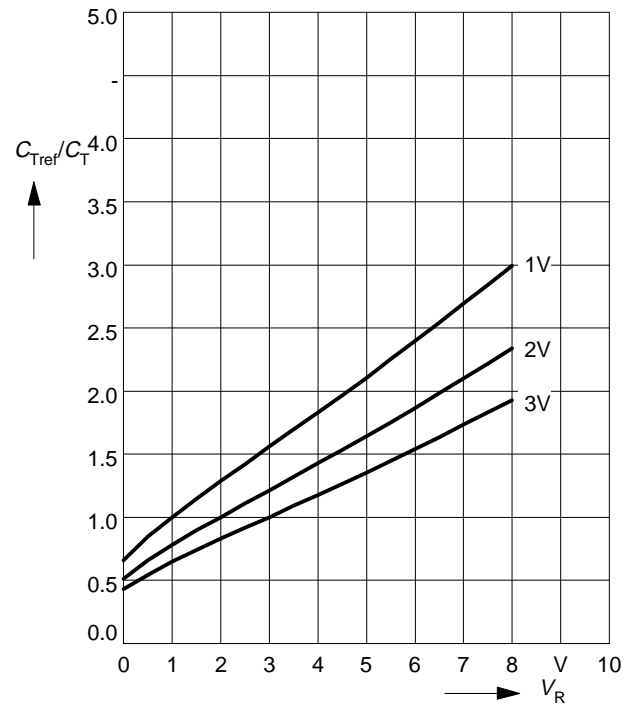
$$C_T = f(V_R)$$

$f = 1\text{MHz}$



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

$V_{ref} = \text{Parameter}, f = 1\text{MHz}$



Package

