

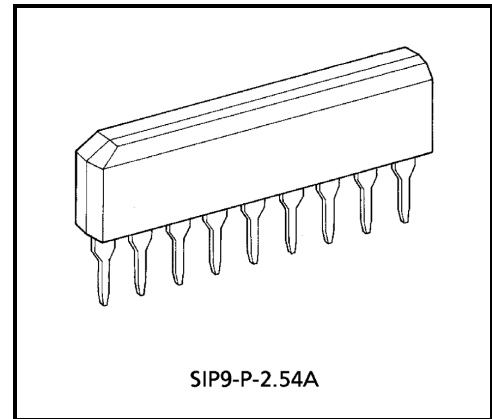
TA7358P

FM Front-End

The TA7358P is designed for a FM front-end application, which is suitable to a portable radio or a radio cassette. Comparing with conventional types, supply voltage dependence, overload characteristics and spurious radiation characteristics are improved.

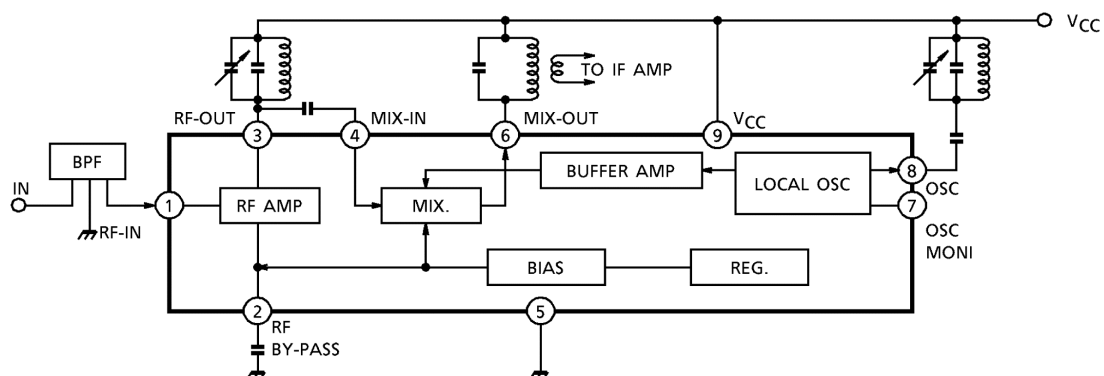
Features

- Wide supply voltage range : $V_{CC} = 1.6\sim 6.0V$
- Excellent supply voltage dependence of local oscillator
: Oscillation stop $V_{CC} = 0.9V$ (typ.)
- Improved inter-modulation characteristics by double balanced type mixer circuit.
- Low spurious radiation.
- Build-in clamping diode for the local oscillator output.



Weight: 0.92g (typ.)

Block Diagram



Explanation Of Terminals

(terminal voltage is DC voltage at $T_a = 25^\circ\text{C}$, $V_{CC} = 5\text{V}$, and no signal)

Pin No.	Symbol	Internal	Terminal Voltage (V)
1	FM-RF IN		0.8
2	BY PASS		1.5
3	FM-RF OUT		5.0
4	Mix in		1.5
5	GND	—	0
6	MIX OUT	Cf. pin(4)	5.0
7	OSC MONITOR		4.3
8	OSC		5.0
9	V_{CC}	—	5.0

Maximum Ratings (Ta = 25°C)

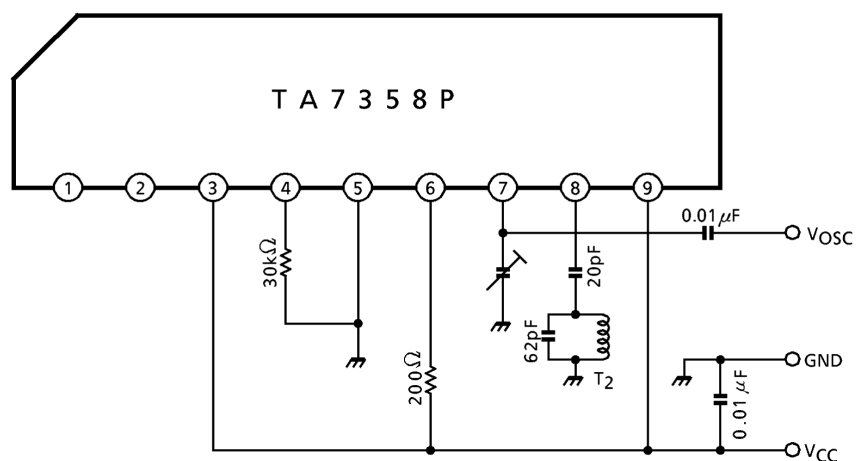
Characteristic	Symbol	Rating	Unit
Supply voltage	V _{CC}	8	V
Power dissipation	P _D (Note)	500	mW
Operating temperature	T _{opr}	-25~75	°C
Storage temperature	T _{stg}	-55~150	°C

(Note) Derated above 25°C in the proportion of 4mW / °C.

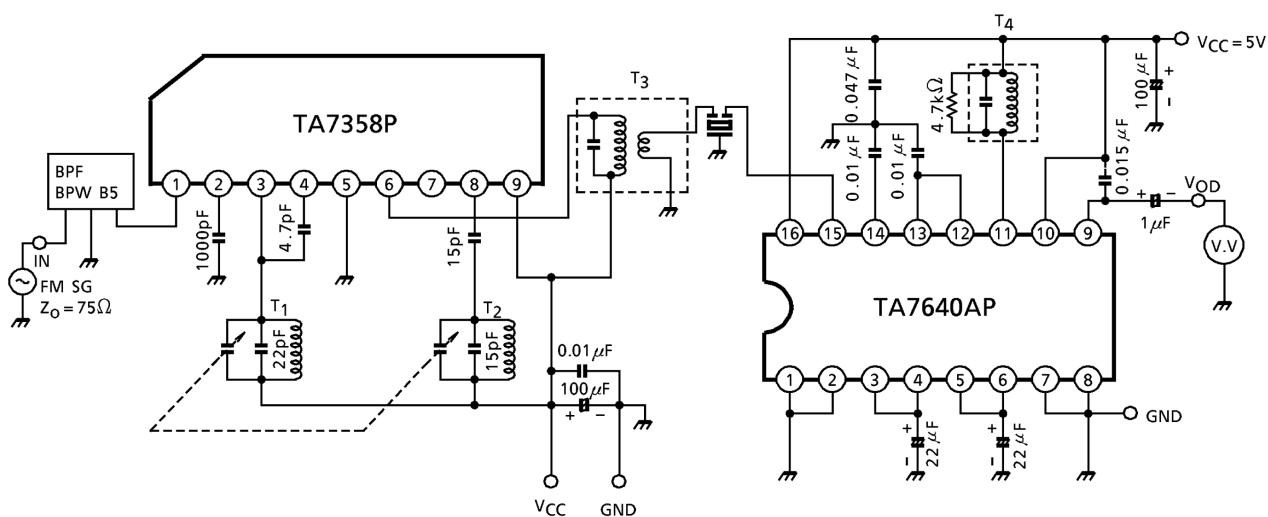
Electrical Characteristics (V_{CC} = 3V, f = 83MHz, f_m = 1kHz, Δf = ±22.5kHz, Ta = 25°C)

Characteristic		Symbol	Test Cir- cuit	Test Condition	Min.	Typ.	Max.	Unit
Supply current		I _{CC}	2	V _{in} = 0	—	5.2	8.0	mA
–3dB limiting sensitivity		V _{in} (lim)	2	—	—	3.0	7.0	dBμV EMF
Quiescent sensitivity		Q _S	2	—	—	11.0	—	dBμV EMF
Conversion gain		G _C	—	—	—	31	—	dB
Local OSC voltage		V _{OSC}	1	f _{OSC} = 60MHz	150	230	350	mV _{rms}
Pin(1) impedance	Parallel input resistance	r _{ip1}	3	f = 83MHz	—	57	—	Ω
Pin(3) impedance	Parallel output resistance	r _{op3}	3		—	25	—	kΩ
	Parallel output capacitance	c _{op3}			—	2.0	—	pF
Pin(4) impedance	Parallel input resistance	r _{ip4}	3		—	2.7	—	kΩ
	Parallel input capacitance	c _{ip4}			—	3.3	—	pF
Pin(6) impedance	Parallel output resistance	r _{op6}	3	f = 10.7MHz	—	100	—	kΩ
	Parallel output capacitance	c _{op6}			—	4.8	—	pF
Local OSC stop voltage		V _{stop}	1	—	—	0.9	1.3	V

Test Circuit 1



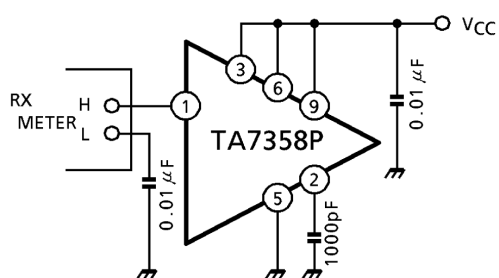
Test Circuit 2



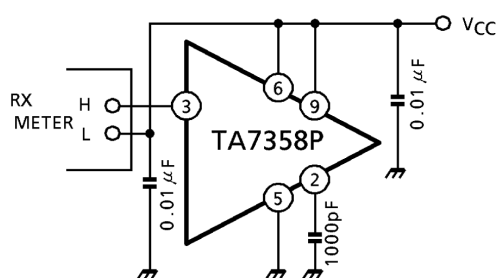
Test Circuit 3

Input, output impedance

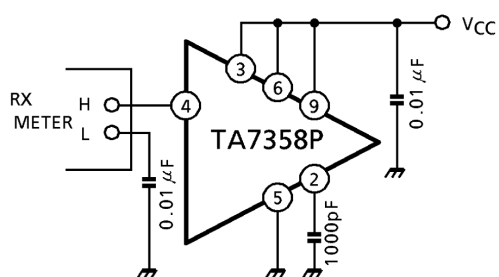
(1) r_{ip1}



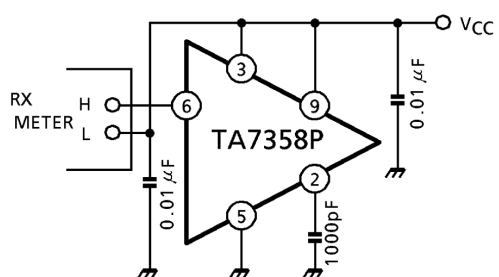
(2) r_{op3} , c_{op3}



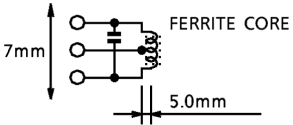
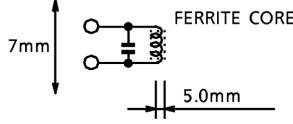
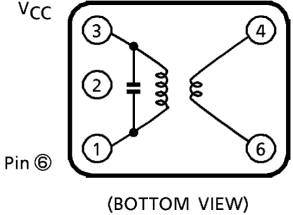
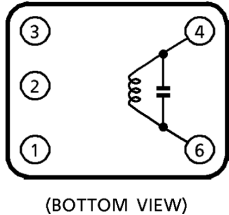
(3) r_{ip4} , c_{ip4}



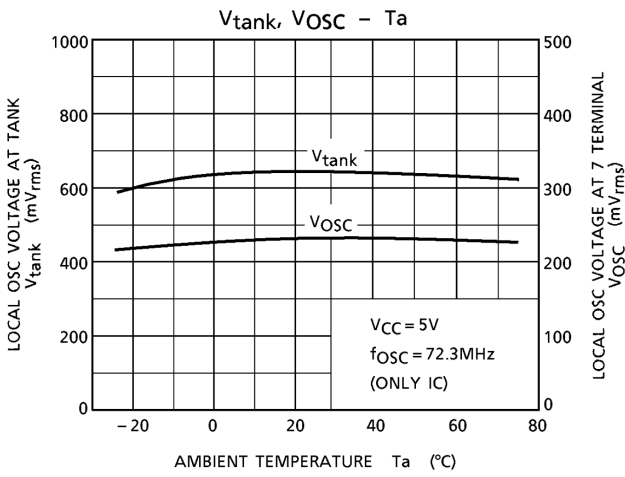
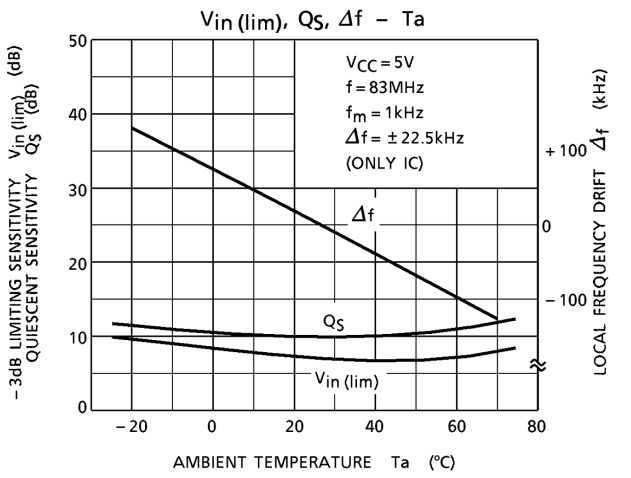
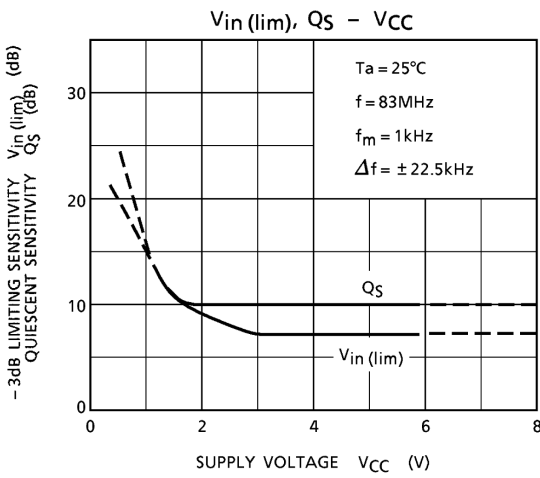
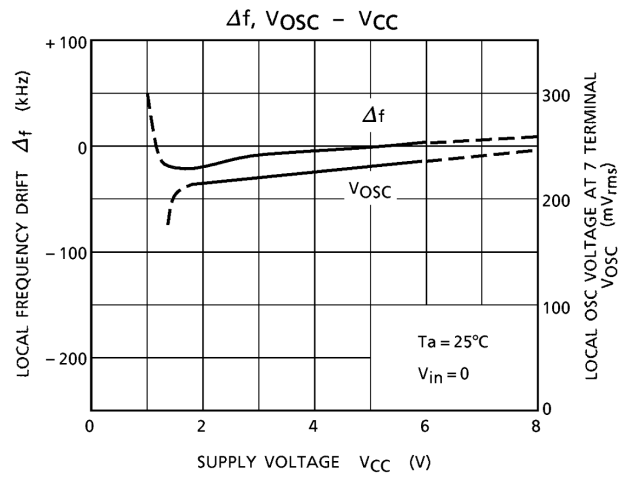
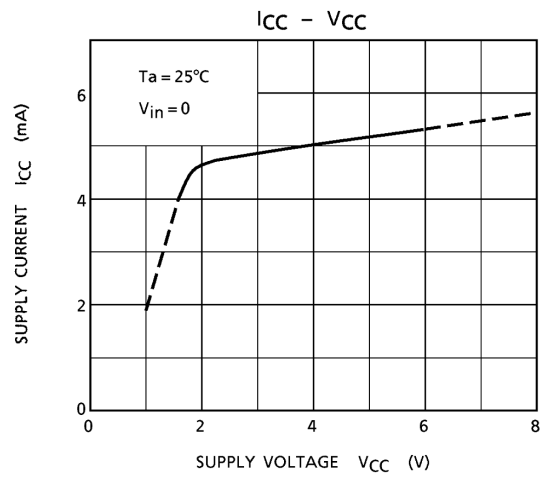
(4) r_{op6} , c_{op6}



Test Circuit Coil Data (japan band for 76.0MHz to 108.0MHz)

Coil	f _o	Q _o	Turns	Capacitance	
T ₁ RF coil	100MHz	100	0.7mmφ 2 $\frac{1}{4}$ T Center tap (japan band)	15pF (external)	
T ₂ OSC coil	100MHz	100	0.7mmφ 2 $\frac{1}{2}$ T (japan band)	15pF (external)	
T ₃ IFT	10.7MHz	115	(1)–(3) 12T (4)–(6) 1T Wire 0.12mmφ UEW Sumida electric Co., LTD. 5764 or equivalent	75pF	
T ₄ Quad coil	10.7MHz	150	(4)–(6) 14T Wire 0.12mmφ UEW Sumida electric Co., LTD. 44M–933A or equivalent	47pF	

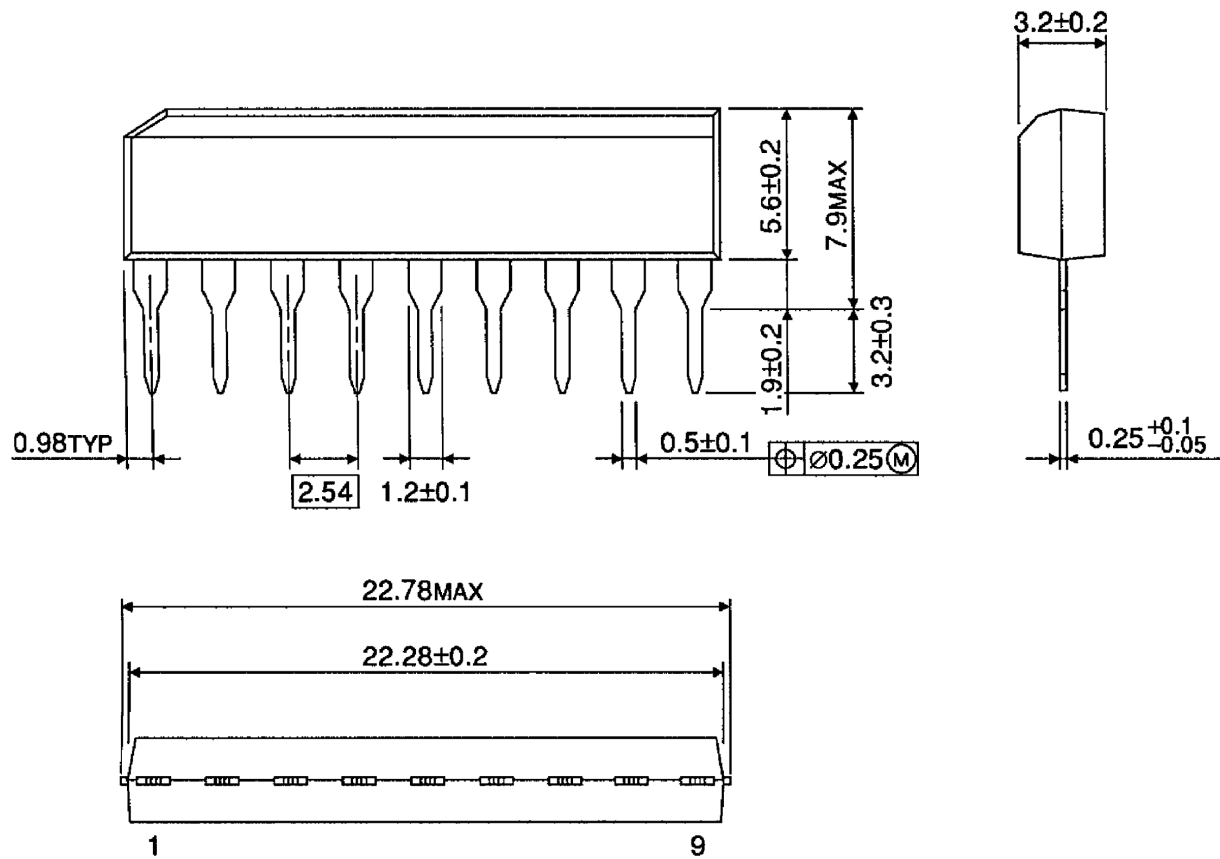
Band pass filter (BPF)
Soshin electric CO., LTD. BPW85
Tuning capacitor
Alps electric CO., LTD. CB41EL933



Package Dimensions

SIP9-P-2.54A

Unit : mm



Weight : 0.92g (typ.)

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