

AN7204

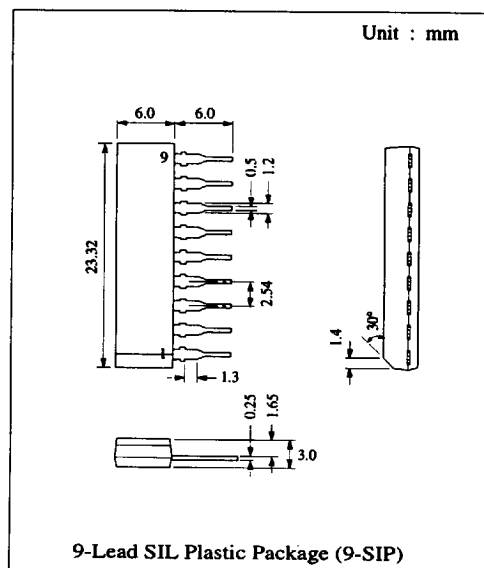
FM Front-end IC for Radio, Radio Cassette Recorder

■ Description

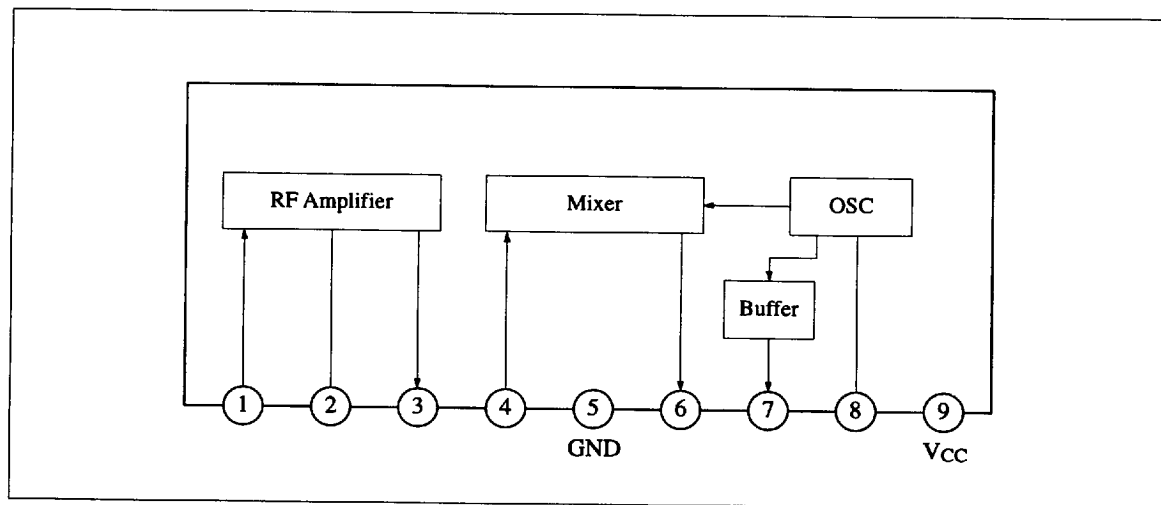
The AN7204 is a monolithic FM front-end IC for PLL synthesizer which is most suitable for 5V operation radio/radio cassette recorder. It can configure a high sensitivity synthesizer tuner in combination with AM-FM-IF + MPX IC (AN7238) available for DTS.

■ Features

- PLL synthesizer OSC buffer built-in
- Good Intermodulation characteristics
- High receiving sensitivity
- TV band receiving is possible (Max. $f = 220\text{MHz}$)
- Operating supply voltage range: $V_{CC} = 2.7\text{V} \sim 7\text{V}$



■ Block Diagram



■ Absolute Maximum Ratings (Ta=25°C)

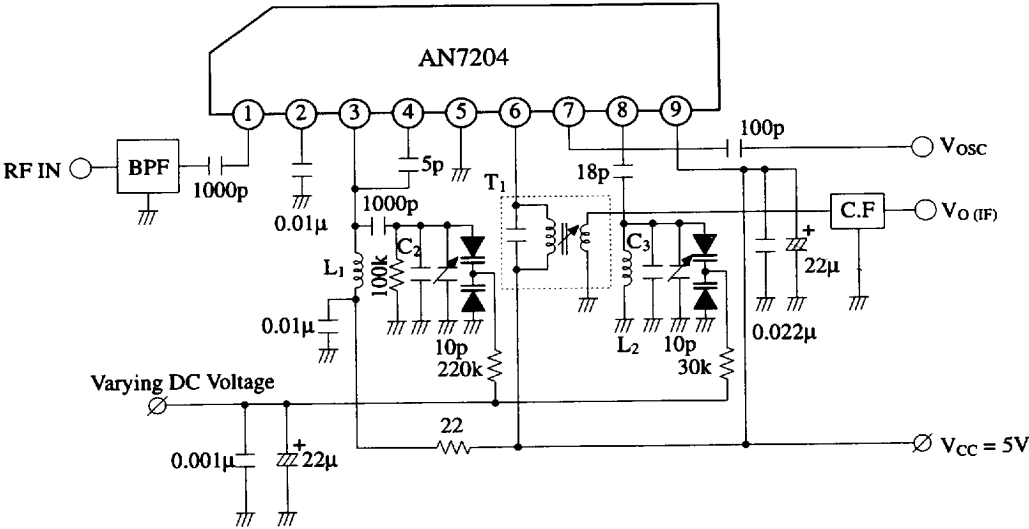
Item	Symbol	Rating	Unit
Supply Voltage	V _{CC}	7	V
Supply Current	I _{CC}	13	mA
Power Dissipation	P _D	150	mW
Operating Ambient Temperature	T _{opr}	-20 ~ +75	°C
Storage Temperature	T _{stg}	-55 ~ +150	°C

Operating Supply Voltage Range: V_{CC} = 2.7V ~ 7.0V

■ Electrical Characteristics (V_{CC}=5V, Ta =25°C)

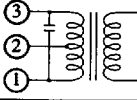
Item	Symbol	Condition	min.	typ.	max.	Unit
Total Circuit Current	I _{tot}	Without signal	5	9	11	mA
Output Voltage	V _O	V _{in} = 55dBμ, f _{RF} = 106MHz	83	87	90	dBμ
Buffer Output Voltage of Local Oscillation	V _{buf}	C _L = 5pF, f _{osc} = 116.7MHz	56	130		mV
		C _L = 5pF, f _{osc} = 212MHz		50		
Oscillation Stop Level	V _{stop}	No input, f _{osc} = 110.7MHz		2.0		V
		No input, f _{osc} = 210.7MHz		2.0		

■ Application Circuit

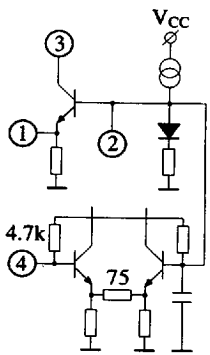
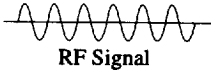
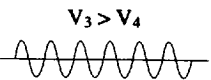
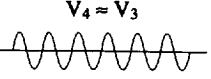
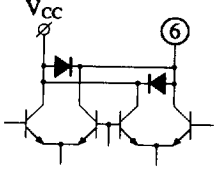
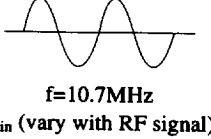


● Band pass filter: SOSHIN DENKI BPWB 5

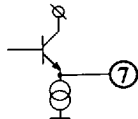
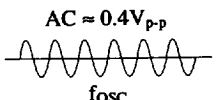
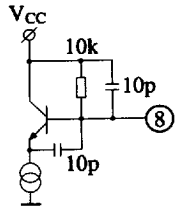
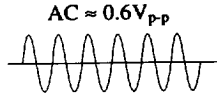
■ Coil Specifications

Symbol	Use, Freq.	Type No.	Maker	Connection Diagram	Number of Turns	L Value/ C Value	Unloaded Q
T ₁	FM Quad Coil 10.7MHz	IFT-41K9	MITSUMI		①...② 7T ②...③ 4T ④...⑥ 2T	110pF	100
L ₁	RF Coil	-	ŌE INDUSTRY		4T Space Winding	0.102μH f=25.2MHz	77 f=25.2MHz
L ₂	OSC Coil	-	ŌE INDUSTRY		3T Space Winding	0.086μH f=25.2MHz	73 f=25.2MHz

■ Pin Descriptions

Pin No.	Pin Name	DC Voltage	I/O Impedance	Equivalent Circuit	Waveform
1	RF IN	1.1V	Several 10Ω		
2	RF Pass-con.	1.8V	2.7kΩ		
3	RF OUT	1.1V	High		
4	Mixer IN	1.8V	Several kΩ		
5	GND	0V			
6	Mixer OUT	5V	High		

■ Pin Descriptions (Continue)

Pin No.	Pin Name	DC Voltage	I/O Impedance	Equivalent Circuit	Waveform
7	OSC Buffer OUT	3.6V	Several 10Ω		
8	OSC	4.9V	→		
9	Vcc	5V			

Signal levels of Pin 1, 3, 4 and 6 are in proportion to size of RF signals which are input to antenna.

■ Characteristics Curve

