

AN7024

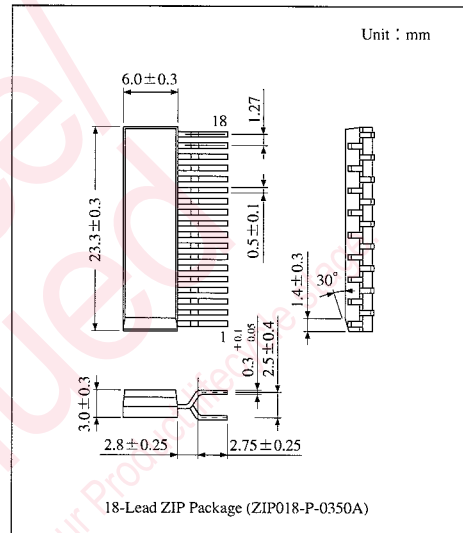
AM Tuner, FM-IF + MPX-IC for Radio, Radio Cassette Recorder

Overview

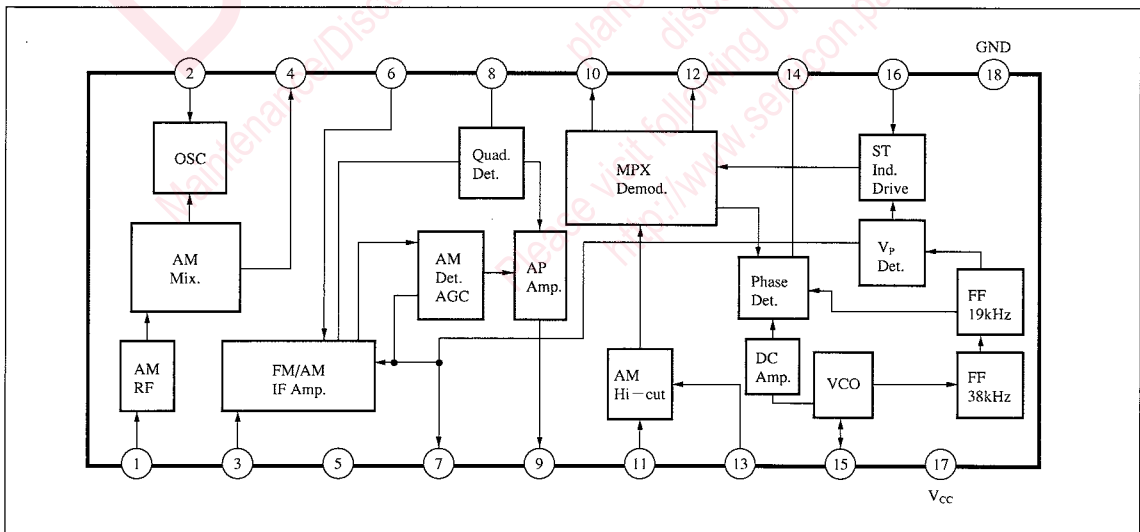
The AN7024 is a single chip IC incorporating AM-TUNER, FM-IF, FM-MPX and demodulation circuit which is most suitable for radio cassette recorder. Integration into 18-pin ZIL package makes possible to reduce external parts. (7 pieces reduced by in-house comparison)

Features

- Incorporating on a single chip (AM TUNER, FM-IF, FM MPX)
- Fewer external parts
- Built-in stereo indicator



Block Diagram



Pin Descriptions

Pin No.	Pin Name	Pin No.	Pin Name
1	AM ANT	10	L-ch. Output
2	AM OSC	11	MPX Input
3	FM IF IN	12	R-ch. Output
4	AM Mixer Output	13	AM Hi-Cut
5	FM IF Input V _{CC}	14	MPX Phase Detector Filter
6	AM IF Input	15	VCO
7	AGC/MPX Pilot Signal Detection	16	Stereo Indicator
8	FM Quad. Coil	17	Supply Voltage
9	Detector Output	18	GND

Absolute Maximum Ratings (T_a = 25°C)

Parameter	Symbol	Rating	Unit
Supply Voltage	V _{CC}	7	V
Supply Current	I _{CC}	30	mA
Power Dissipation	P _D	210	mW
Operating Ambient Temperature	T _{opr}	-20 ~ +70	°C
Storage Temperature	T _{stg}	-55 ~ +150	°C

Recommended Operating Range (T_a = 25°C)

Parameter	Symbol	Range
Operating Supply Voltage Range	V _{CC}	3V ~ 7V

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

	Parameter	Symbol	Condition	min.	typ.	max.	Unit
FM	Total Circuit Current	I _{tot} (FM)	Stereo no input	—	14	—	mA
	S/N Ratio	S/N (FM)	V _{in} = 80dBμ, Stereo	—	66	—	dB
	Detection Output Voltage	V _O (FM)	V _{in} = 80dBμ, Monaural	—	89	—	mVrms
	Limiting Sensitivity	V _L (FM)	Input which V _O (FM) decreases by 3dB, Monaural	—	34	—	dBμ
MPX	Channel Balance	CB	V _{in} = 80dBμ, Monaural	—	0	—	dB
	Stereo Separation	Sep.	V _{in} = 80dBμ, Stereo	—	46	—	dB
	Total Harmonic Distortion	THD	V _{in} = 80dBμ, Stereo	—	0.5	—	%
	Stereo Lamp ON Level	V _{P(on)}	V _{in} = 80dBμ, Modulation indication	—	5.6	—	%
	Stereo Lamp OFF Level	V _{P(off)}	V _{in} = 80dBμ, Modulation indication	—	2.3	—	%
AM	Detection Output Voltage	V _O (AM)	V _{in} = 60dBμ	—	63	—	mVrms
	Sensitivity	V _G	V _O (AM) = 20mV	—	8	—	dBμ
	Total Circuit Current	I _{tot} (AM)	No Input	—	11	—	mA
	S/N Ratio	S/N (AM)	V _{in} = 60dBμ	—	44	—	dB

Note) Unless otherwise specified.

FM : monaural ; f_{in} = 10.7MHz, 1kHz 30% modulation.

Stereo ; f_{in} = 10.7MHz, 1kHz 100% modulation. (L+R=90%, pilot 10%)

AM..... ; f_{in} = 1MHz, 400Hz 30% modulation.

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