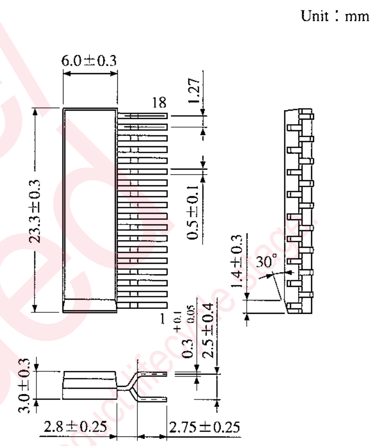
AN7024

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)



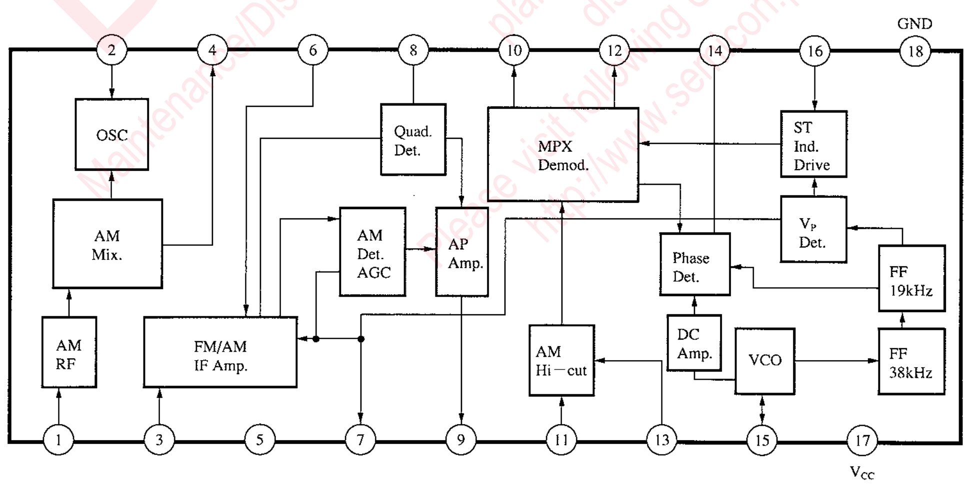
18-Lead ZIP Package (ZIP018-P-0350A)

■ Features

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

ICs for Tuner

■ 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 (Ta＝25℃)

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	℃
Storage Temperature	T_{stg}	−55～＋150	℃

■ Recommended Operating Range (Ta＝25℃)

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

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

	Parameter	Symbol	Condition	min.	typ.	max.	Unit
FM	Total Circuit Current	I_{tot} (FM)	Stereo no input	—	14	—	mA
FM	S/N Ratio	S/N (FM)	V_{in}＝80dBμ, Stereo	—	66	—	dB
FM	Detection Output Voltage	V_O (FM)	V_{in}＝80dBμ, Monaural	—	89	—	mVrms
FM	Limiting Sensitivity	V_L (FM)	Input which Vo (FM) decreases by 3dB, Monaural	—	34	—	dBμ
MPX	Channel Balance	CB	V_{in}＝80dBμ, Monaural	—	0	—	dB
MPX	Stereo Separation	Sep.	V_{in}＝80dBμ, Stereo	—	46	—	dB
MPX	Total Harmonic Distortion	THD	V_{in}＝80dBμ, Stereo	—	0.5	—	%
MPX	Stereo Lamp ON Level	$V_{P(on)}$	V_{in}＝80dBμ, Modulation indication	—	5.6	—	%
MPX	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
AM	Sensitivity	V_G	V_O (AM)＝20mV	—	8	—	dBμ
AM	Total Circuit Current	I_{tot} (AM)	No Input	—	11	—	mA
AM	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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