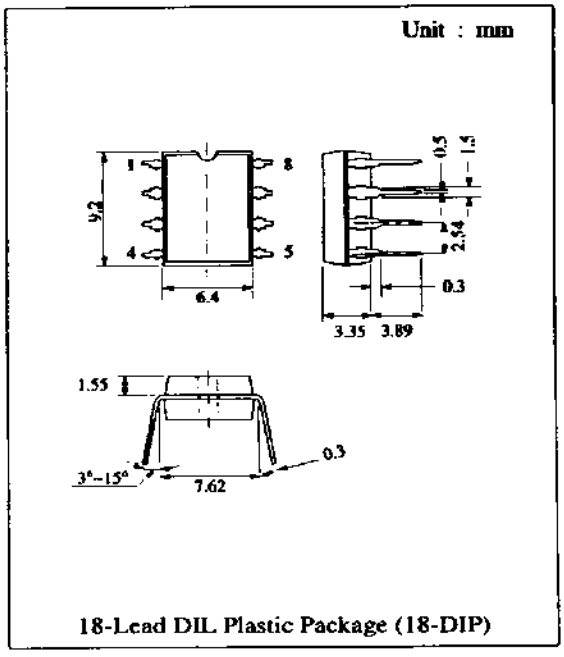
AN7273

AM Tuner, FM-AM IF Amplifier

■ Description

The AN7273 is a monolithic integrated circuit designed for AM tuner, FM-AM IF system in Hi-Fi applications. It is an upgrade of the AN7223 with an additional function in stop signal output for synthesizer tuner.

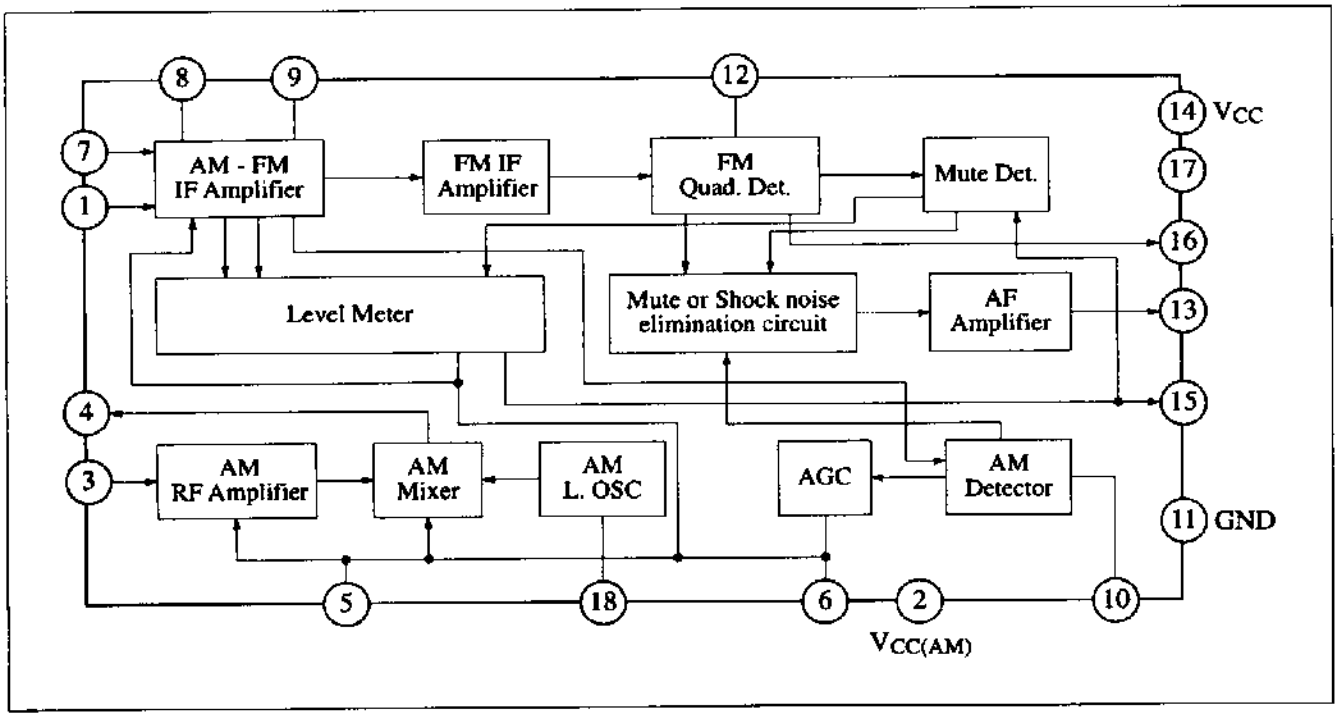


18-Lead DIL Plastic Package (18-DIP)

■ Features

- Level meter output (FM-AM common use)
- Stop signal output (for synthesizer tuner)
- AM : includes RF amplifier and high sensitivity
- Low power consumption
- Low shock noise level from switch operation (ON/OFF)
- Few external components

■ Block Diagram



■ Absolute Maximum Ratings (Ta=25°C)

Item	Symbol	Rating	Unit
Supply Voltage	V_{CC}	14.4	V
Power Dissipation	P_D	317	mW
Operating Ambient Temperature	Topr	-20 ~ +75	°C
Storage Temperature	Tstg	-55 ~ +150	°C

Operating Supply Voltage Range: V_{CC} = 2.8V ~ 12.0V

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

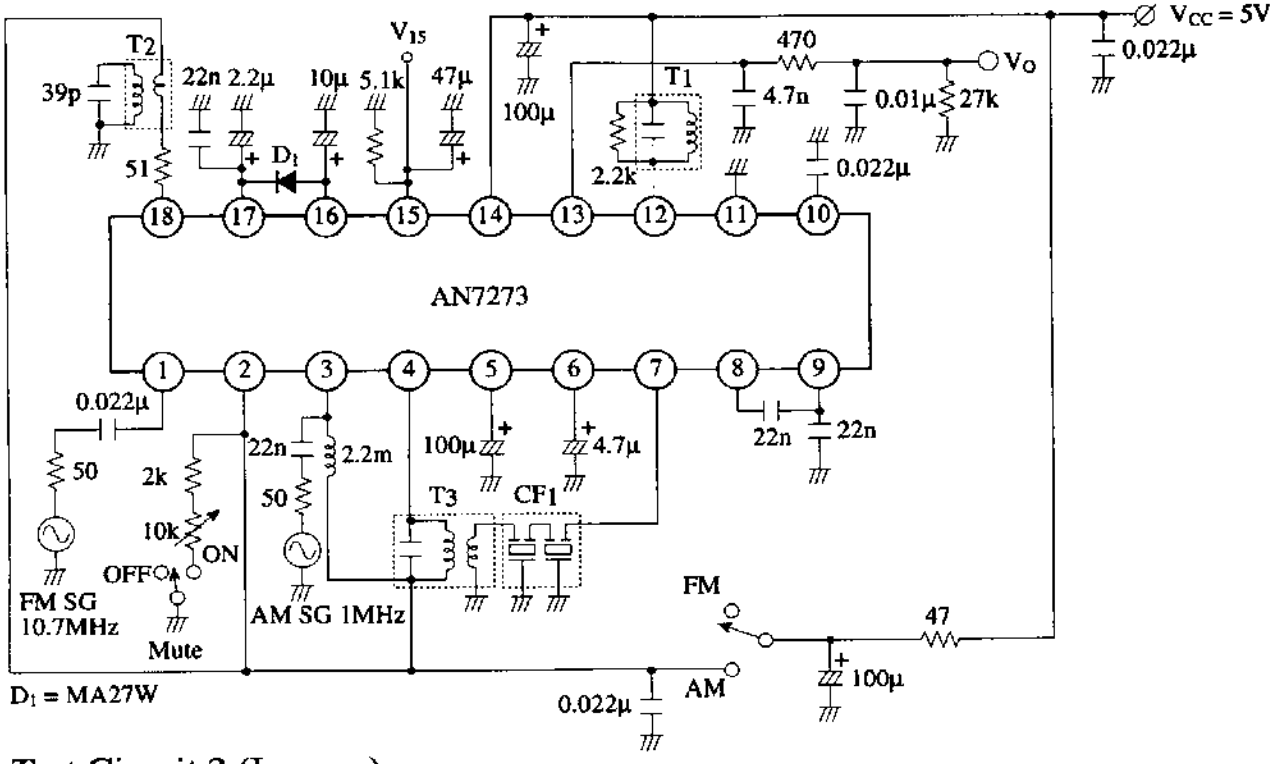
	Item	Symbol	Test Cct	Condition	min.	typ.	max.	Unit
FM	Total Circuit Current	I_{tot}	2	DC Measurement	9	14	20	mA
	Limiting Sensitivity	$V_{in(lim)}$	1	Input giving V_O = -3dB	43.5	46	49.5	dBμ
	Meter Output Voltage (1)	V_{15-11}	1	V_{in} = 70dBμ	0.61	0.8	1.1	V
	Meter Output Voltage (2)	V_{15-11}	1	V_{in} = 100dBμ	1.14	1.26	1.42	V
	Muting Sensitivity	$V_{in(mute)}$	1	Input giving V_O > -20dB	55	64	73	dBμ
	Demodulator Output Level	V_O	1	V_{in} = 80dBμ	75	100	125	mV
AM	Total Circuit Current	I_{tot}	3	DC Measurement	8	13	19	mA
	Maximum Sensitivity	S_{max}	1	Input giving V_O = 10mV	4	9.5	15	dBμ
	Detector Output Voltage	V_O	1	V_{in} = 80dBμ	60	80	100	mV
	Meter Output Voltage 1	V_{15-11}	1	V_{in} = -10dBμ	0		130	mV
	Meter Output Voltage 2	V_{15-11}	1	V_{in} = 80dBμ	1.12	1.25	1.38	V

Note) f_{in} = 10.7MHz, Mod = 22.5kHz, f_m = 400Hz(FM)
f_{in} = 1MHz, Mod = 30%, f_m = 400Hz(AM)

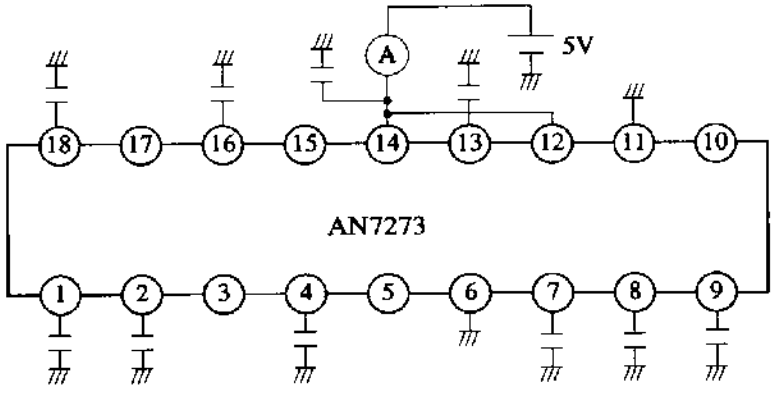
■ Pin

Pin No.	Pin Name	Pin No.	Pin Name
1	FM IF Amplifier Input	10	AM Detector Output
2	V_{CC} (AM)	11	GND
3	AM RF Amplifier Input	12	FM Detector Coil
4	AM Mixer Output	13	AF Output
5	AGC Output (2)	14	V_{CC}
6	AGC Output (1)	15	Level Meter Output
7	AM IF Amplifier Input	16	AFC Output
8	IF By-pass	17	Reference Voltage
9	IF By-pass	18	Local Oscillator

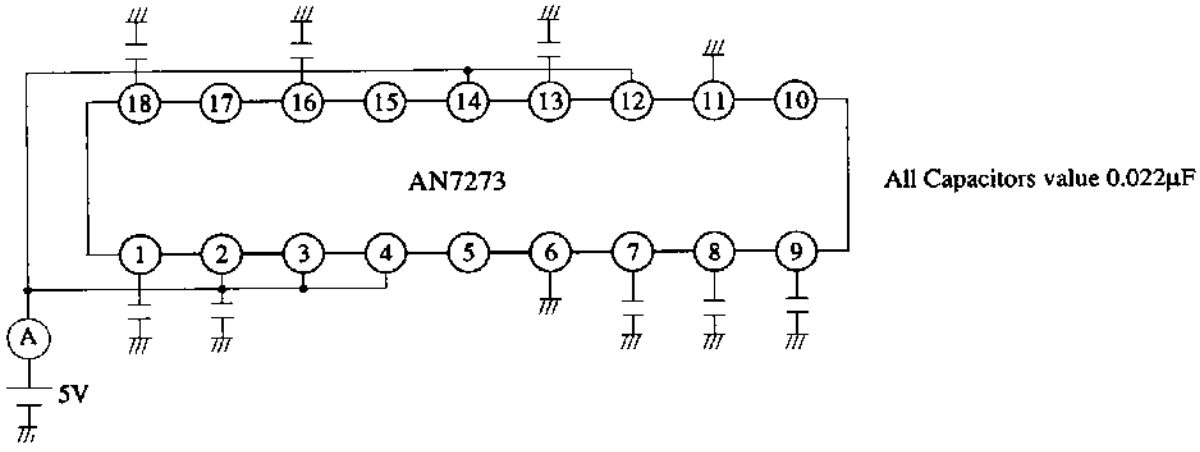
Test Circuit 1 (V_O, $V_{in(lim)}$, $V_{in(mute)}$, V_{15-11}, Smax)



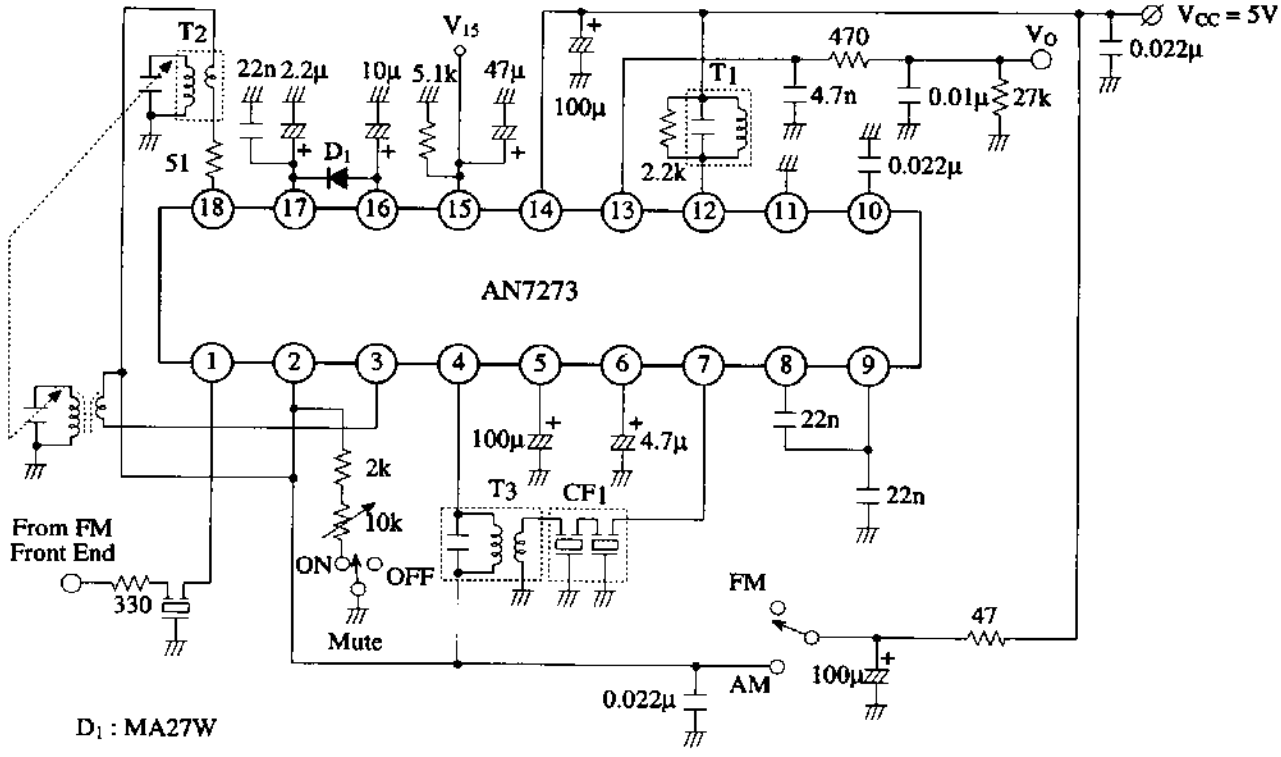
Test Circuit 2 ($I_{tot(FM)}$)



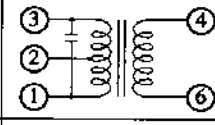
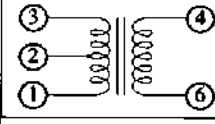
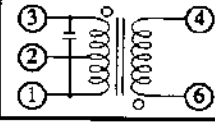
Test Circuit 3 ($I_{tot(AM)}$)



■ Application Circuit



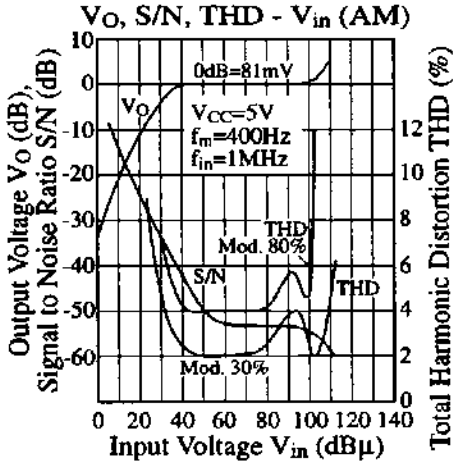
■ Coil Specifications

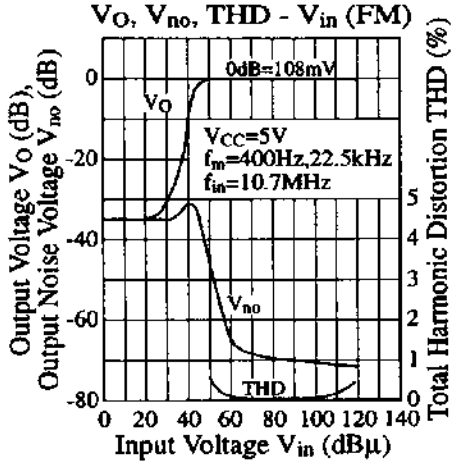
Symbol	Use, Freq.	Type No.	Maker	Connection Diagram	Number of Turns	Tuning Cap.	Unloaded Q
T_1	FM Quad Coil 10.7MHz	ELF-7S752A	Matsushita		① ··· ② 8T ② ··· ③ 5T ④ ··· ⑥ 3T	100pF	90±20%
T_2	AM MW Osc. Coil	ELL-7S754	Matsushita		① ··· ② 4T ② ··· ③ 125T ④ ··· ⑥ 7T	–	95±20%
T_3	AM Mixer Output 455kHz	EIA-7S802A	Matsushita		③ ··· ② 35T ⑥ ··· ④ 10T ② ··· ① 19T	1500pF	60±30%

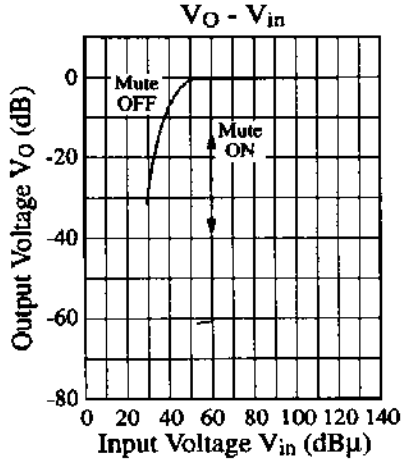
■ Ceramic Filter Specification

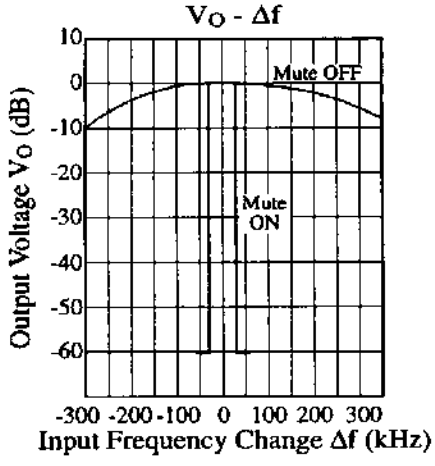
Symbol	Use	Type No.	Maker	Center Freq.	Band Width	Loss
CF_1	AM IF	CFM2-455B	Toko	455kHz	7kHz (-6dB)	2.6dB

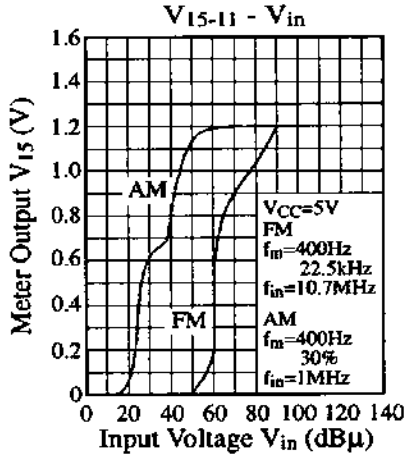
■ Characteristics Curve

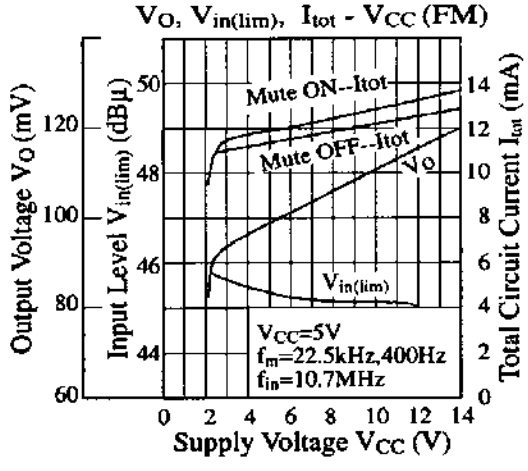


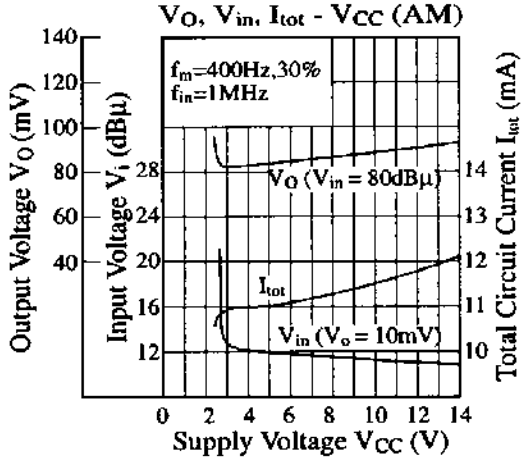












■ Printed Circuit Board (Scale: 1:1)