

# AN7273, AN7273S

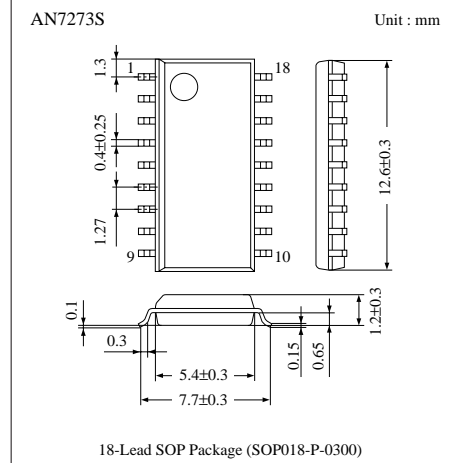
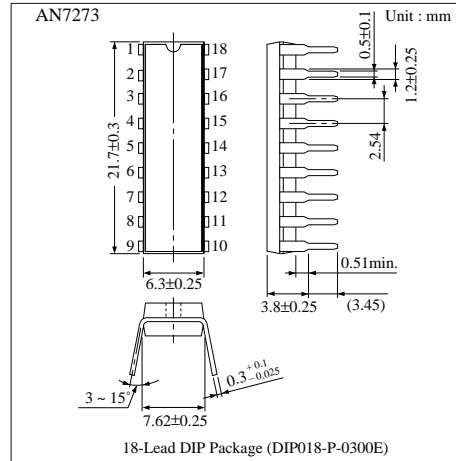
## AM Tuner, FM/AM IF Amplifier Circuit

### ■ Overview

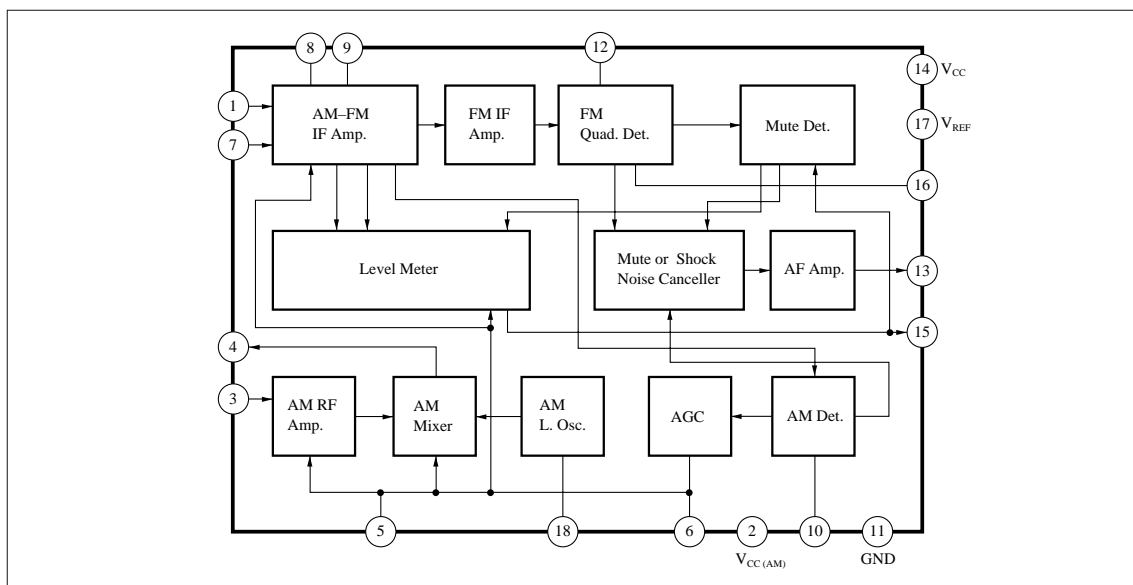
The AN7273 and the AN7273S are the ICs designed for Hi-Fi stereo tuner. They are functioned with stop signal pin besides the AN7223S function.

### ■ Features

- Level meter output (FM-AM common use)
- Stop signal output (for synthesizer tuner)
- AM : including RF amplifier and high sensitivity
- Low power consumption
- Low shock noise level from function switch operation
- Fewer external parts



### ■ Block Diagram



### ■ Pin Descriptions

| Pin No. | Pin Name                  | Pin No. | Pin Name               |
|---------|---------------------------|---------|------------------------|
| 1       | FM IF Input               | 10      | AM Detection Output    |
| 2       | AM Supply/Mute Adjustment | 11      | GND                    |
| 3       | AM RF Input               | 12      | FM Detection Coil      |
| 4       | AM Mixer Output           | 13      | AF Output              |
| 5       | AGC Output (2)            | 14      | V <sub>CC</sub>        |
| 6       | AGC Output (1)            | 15      | Level Meter Output     |
| 7       | AM IF Input               | 16      | AFC Output             |
| 8       | IF By-pass                | 17      | Reference Voltage      |
| 9       | IF By-pass                | 18      | Local Oscillation Coil |

### ■ Absolute Maximum Ratings (Ta=25°C)

| Parameter                     | Symbol          | Rating      | Unit |
|-------------------------------|-----------------|-------------|------|
| Supply Voltage                | V <sub>CC</sub> | 14.4        | V    |
| Supply Current                | I <sub>CC</sub> | 30          | mA   |
| Power Dissipation             | AN7273          | 317 *1      | mW   |
|                               | AN7273S         | 210 *2      |      |
| Operating Ambient Temperature | AN7273          | -20 ~ + 75  | °C   |
|                               | AN7273S         | -20 ~ + 75  |      |
| Storage Temperature           | AN7273          | -55 ~ + 150 | °C   |
|                               | AN7273S         | -55 ~ + 125 |      |

\*1 Ta = 25°C, \*2 Ta = 75°C

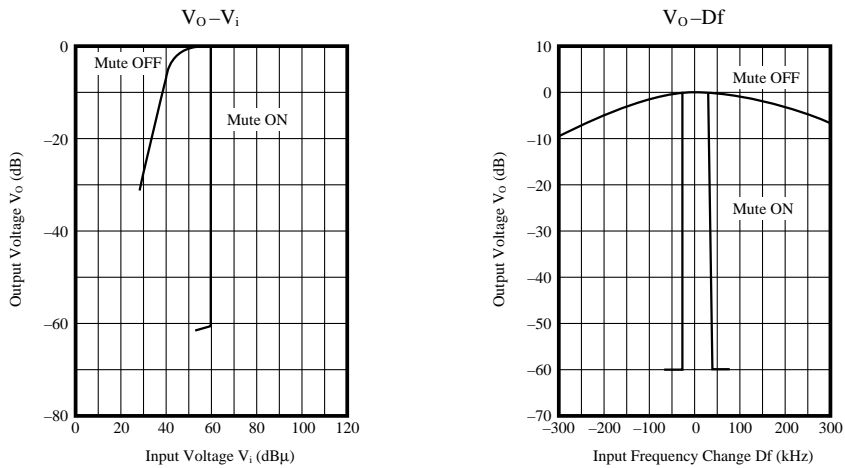
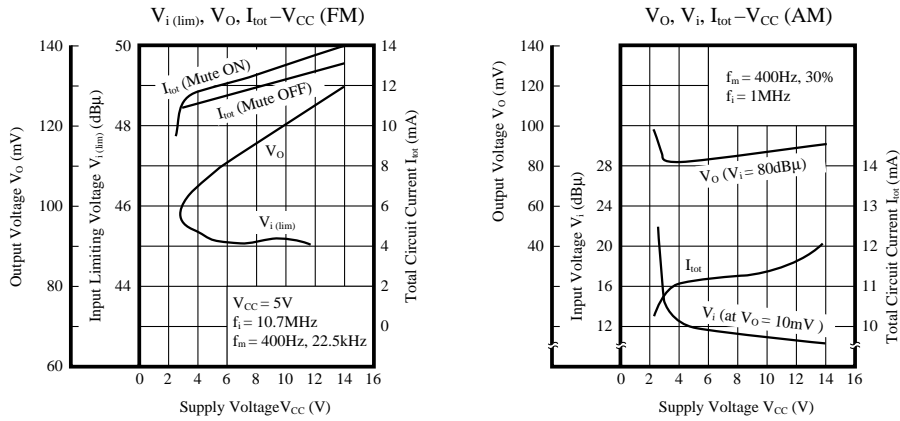
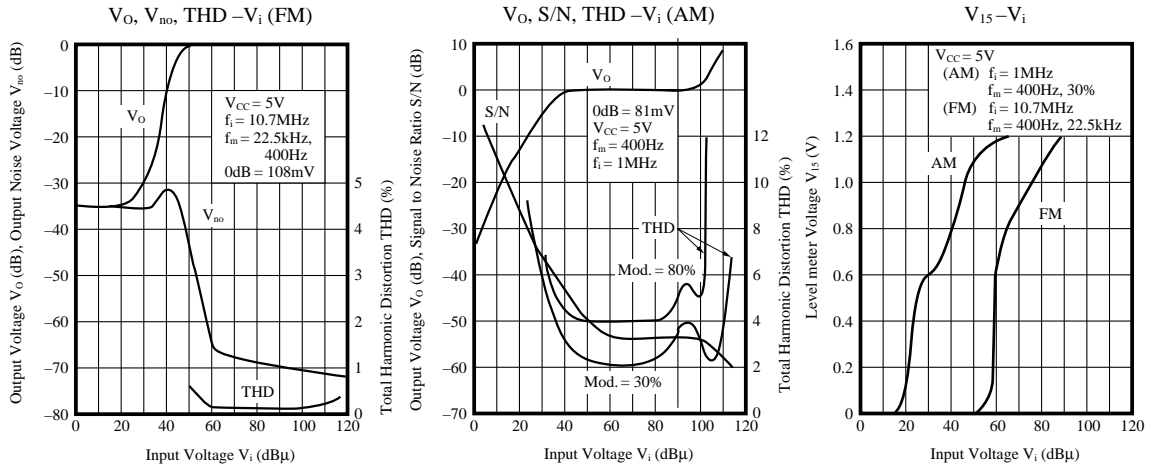
### ■ Recommended Operating Range (Ta = 25°C)

| Parameter                      | Symbol                | Range   |
|--------------------------------|-----------------------|---------|
| Operating Supply Voltage Range | V <sub>CC (opr)</sub> | 3 ~ 12V |

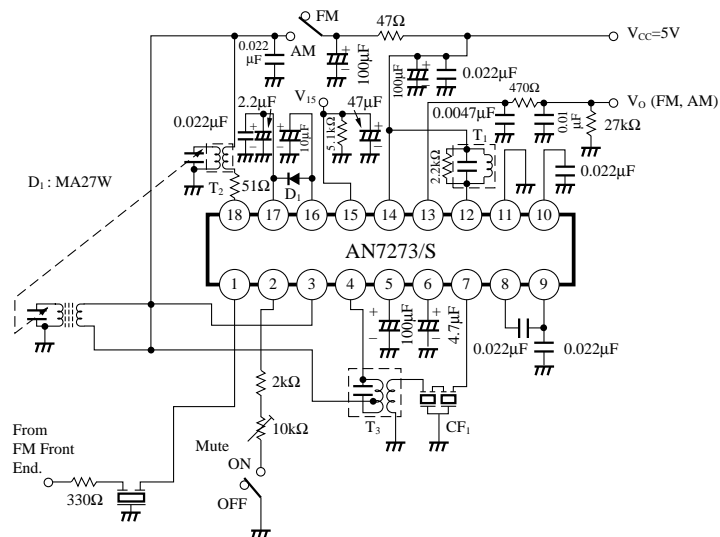
### ■ Electrical Characteristics (V<sub>CC</sub>= 5V, Ta= 25°C)

| Parameter | Symbol                         | Condition             | min.                                     | typ. | max. | Unit |     |
|-----------|--------------------------------|-----------------------|--|------|------|------|-----|
| FM        | Total Circuit Current          | I <sub>tot</sub>      | DC measurement                           | 9    | 14   | 20   | mA  |
|           | Demodulation Output Level      | V <sub>O</sub>        | V <sub>i</sub> =80dBμ                    | 75   | 100  | 125  | mV  |
|           | Limiting Sensitivity           | V <sub>i (lim)</sub>  | Input at V <sub>O</sub> = -3dB           | 43.5 | 46   | 49.5 | dBμ |
|           | Muting Sensitivity             | V <sub>i (Mute)</sub> | Input at V <sub>O</sub> =more than -20dB | 55   | 64   | 73   | dBμ |
|           | Level Meter Driving Output (1) | V <sub>15-11</sub>    | V <sub>i</sub> =70dBμ                    | 0.61 | 0.8  | 1.1  | V   |
|           | Level Meter Driving Output (2) | V <sub>15-11</sub>    | V <sub>i</sub> =100dBμ                   | 1.14 | 1.26 | 1.42 | V   |
| AM        | Total Circuit Current          | I <sub>tot</sub>      | DC measurement                           | 8    | 13   | 19   | mA  |
|           | Detection Output Level         | V <sub>O</sub>        | V <sub>i</sub> =80dBμ                    | 60   | 80   | 100  | mV  |
|           | Max. Sensitivity               | S <sub>max.</sub>     | Input at V <sub>O</sub> =10mV            | 4    | 9.5  | 15   | dBμ |
|           | Level Meter Driving Output (1) | V <sub>15-11</sub>    | V <sub>i</sub> = -10dBμ                  | 0    | —    | 130  | mV  |
|           | Level Meter Driving Output (2) | V <sub>15-11</sub>    | V <sub>i</sub> =80dBμ                    | 1.12 | 1.25 | 1.38 | V   |

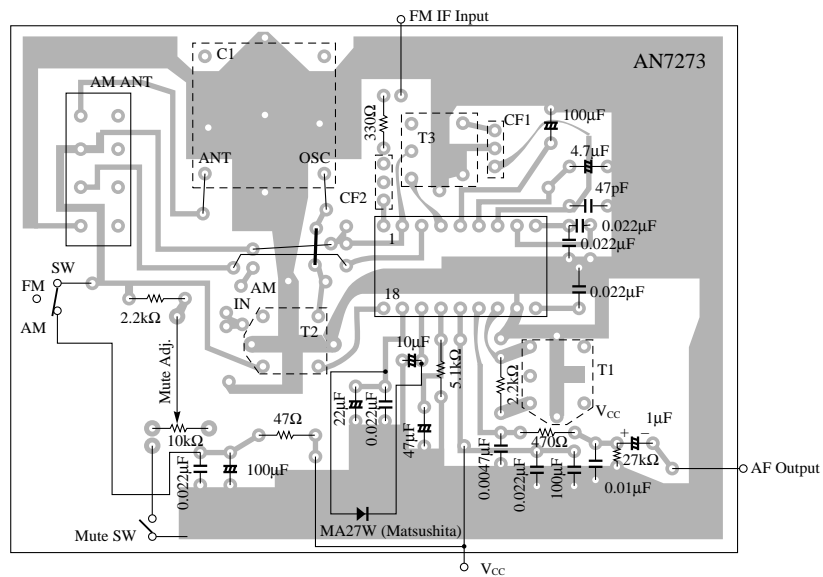
Note) Unless otherwise specified, f<sub>i</sub>=10.7MHz, Mod.= 22.5kHz, f<sub>m</sub>= 400Hz (FM)  
f<sub>i</sub>=1MHz, Mod.= 30%, f<sub>m</sub>= 400Hz (AM)



■ Application Circuit



■ Printed Circuit Board Layout



■ Coil Specifications

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

■ Ceramic Filter Specification

| Symbol          | Use   | Type No.   | Maker | Center Freq. | Band Width  | Loss  |
|-----------------|-------|------------|-------|--------------|-------------|-------|
| CF <sub>1</sub> | AM IF | CFM2- 455B | Toko  | 455kHz       | 7kHz (-6dB) | 2.6dB |