# FAN7000D

## Low Power Amplifier

## Features

- Low quiescent current
- High power supply ripple rejection
- Low voltage operation
- A few of external part required
- Built in power save switch & mute switch

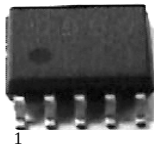
## Typical Applications

- Portable compact disk player (DISCMAN)
- Portable mini disk player (MD)
- Disc-man
- MP3 player
- CD-ROM
- Other potable compact disk media
  Fan motor drive

## Description

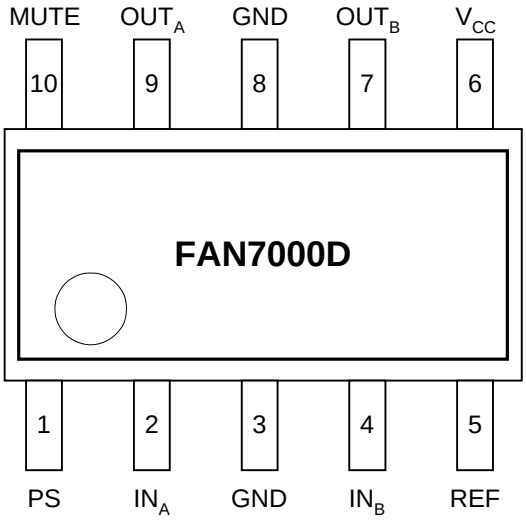
The FAN7000D is a monolithic integrated circuit and suitable dual amplifier for low power.

**10-SSOP-225**



1

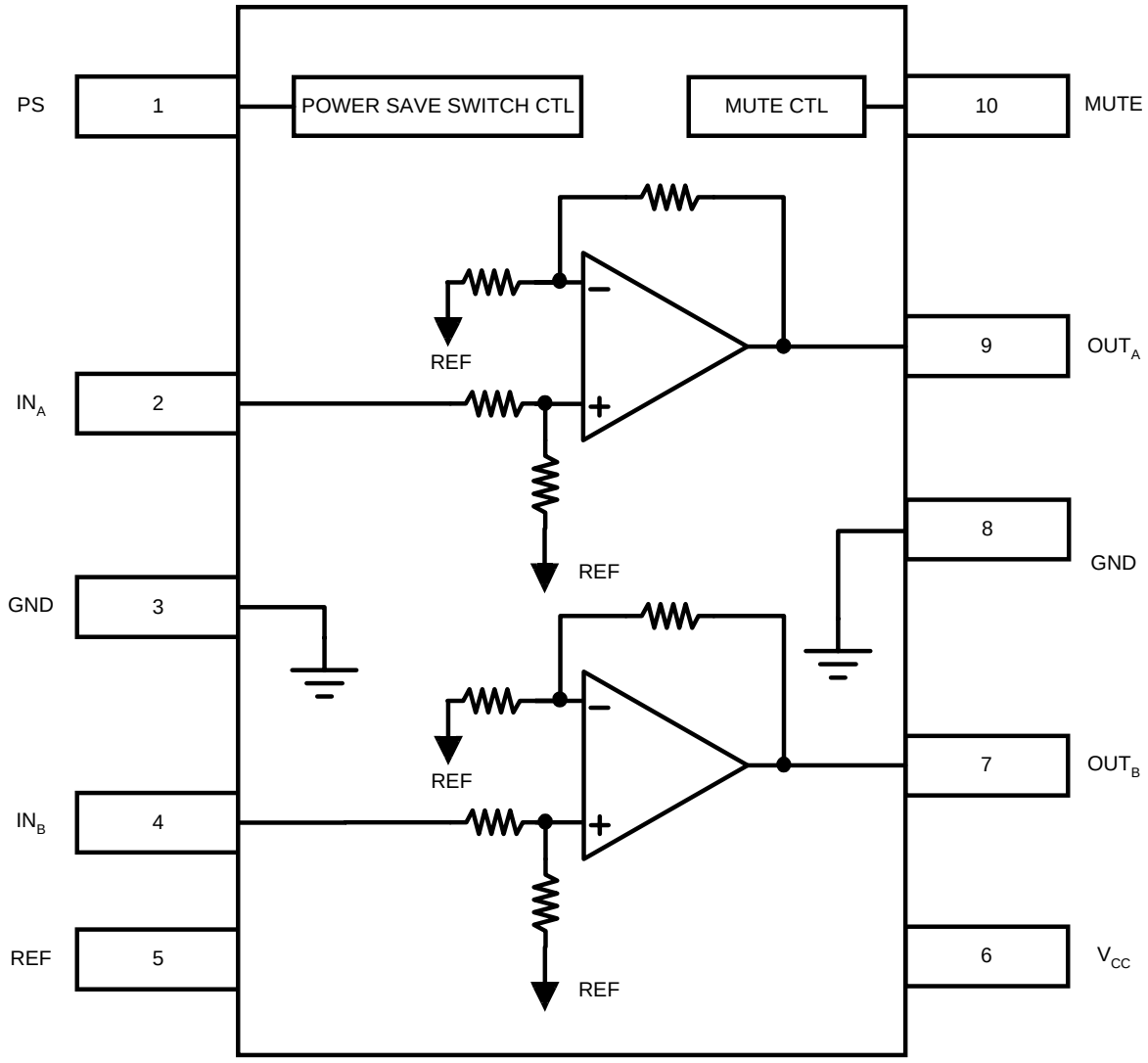
## Pin Assignments




## Pin Definitions

| Pin Number | Pin Name | Pin Function Description |
|---|---|---|
| 1 | PS | Power Save Switch |
| 2 | $IN_A$ | Signal Input A |
| 3 | GND | Signal Ground |
| 4 | $IN_B$ | Signal Input B |
| 5 | REF | Reference Voltage |
| 6 | $V_{CC}$ | Supply Voltage |
| 7 | $OUT_B$ | Signal Output B |
| 8 | GND | Power Ground |
| 9 | $OUT_A$ | Signal Output A |
| 10 | MUTE | Mute On Switch |

## Internal Block Diagram



## Electrical Characteristics ($R_L$ = 16Ω, Rg = 600Ω, Ta = 25°C)

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Quiescent Current 1 | $I_{CC1}$ | $V_{CC}$ = 2.4V | - | 5.5 | 10.0 | mA |
| Quiescent Current 2 | $I_{CC2}$ | $V_{CC}$ = 4.5V, Mute = GND | - | 1.0 | 2.0 | mA |
| Quiescent Current 3 | $I_{CC3}$ | $V_{CC}$ = 4.5V, PS = GND | - | - | 1.0 | μA |
| Close Loop Voltage Gain 1 | $G_{VC1}$ | $V_{CC}$ = 2.4V, f = 1KHz, $V_O$ = –10dBm | 30 | 32 | 34 | dB |
| Close Loop Voltage Gain 2 | $G_{VC1}$ | $V_{CC}$ = 1.8V, f = 1KHz, $V_O$ = –20dBm | 29 | 32 | 34 | dB |
| Channel Balance 1 | $\Delta G_{V1}$ | $V_{CC}$ = 2.4V, f = 1KHz, $V_O$ = –10dBm | - | - | 1.0 | dB |
| Channel Balance 2 | $\Delta G_{V2}$ | $V_{CC}$ = 1.8V, f = 1KHz, $V_O$ = –20dBm | - | - | 1.0 | dB |
| Total Harmonic Distortion | THD | $V_{CC}$ = 2.0V, f = 1KHz, $P_O$ = 1mW | - | 0.5 | 1.5 | % |
| Ripple Rejection Ratio | RR | $V_{CC}$ = 1.8V, f = 100Hz, Rg = 1KΩ, $V_R$ = –20dBm, BPF = 100Hz | 43 | 60 | - | dB |
| Crosstalk | CT | $V_{CC}$ = 2.4V, f = 100Hz, Rg = 1KΩ, $V_O$ = –10dB | 43 | 50 | - | dB |
| Output Noise Voltage | $V_{NOISE}$ | $V_{CC}$ = 4.5V, Rg = 1KΩ, BPF = 20Hz ~ 20KHz | - | 60 | 100 | μVrms |
| Output Power | $P_{OUT}$ | $V_{CC}$ = 3.0V, f = 1KHz, THD = 10% | 20 | 40 | - | mW |
| PS Attenuation Ratio | $ATT_{PS}$ | $V_{CC}$ = 1.8V, f = 100Hz, PS = GND, $V_{IN}$ = –10dB | - | - | -80 | dB |
| MUTE attenuation ratio | $ATT_{MU}$ | $V_{CC}$ = 1.8V, f = 100Hz, MUTE = GND, $V_{IN}$ = –10dB | - | - | -80 | dB |
| PS ON input current | $I_{PSON}$ | $V_{CC}$ = 1.5V, $V_{REF}$ ≥ 0.85V | - | 0.2 | 1.0 | μA |
| MUTE OFF input current | $I_{MOFF}$ | $V_{CC}$ = 1.5V, $V_{REF}$ ≥ 0.85V | - | 0.2 | 1.0 | μA |
| PS ON high level | $V_{HPS}$ | $V_{CC}$ = 1.5V, $V_{REF}$ ≥ 0.85V | 0.5 | 0.65 | - | V |
| MUTE OFF high level | $V_{HMU}$ | $V_{CC}$ = 1.5V, $V_{REF}$ ≥ 0.85V | 0.5 | 0.65 | - | V |

## Typical Application Circuits