

# Product Brief

## Features

- 1.0W continuous average power (8Ω)
- Output coupling capacitor or bootstrap capacitor not needed
- Built in circuit for popping noise reduction
- Low crossover distortion
- Low THD: typ. 0.2% (5V)
- Low shutdown current: 0.01μA
- Very low quiescent current: typ. 2.6mA
- High performance PSRR: typ. 65dB
- Shutdown: Active high
- Built in TSD circuit (~150°C)
- 8-SOP Package

## Applications

- DECT Phones (Digital Enhanced Cordless telephone)
- Cellular phones (GSM, CDMA)
- PDA/Portable computers
- Personal Audio systems

## General Description

The FAN7021, a CMOS power amplifier targeted for mobile phones, DECT phones, PDA and other portable applications. This new power amplifier produces up to 1W of low-distortion continuous output power (1.5W peak) with supply voltages from 2.0V to 5.5V. The FAN7021 device utilizes an integrated adaptive bias current control circuit to minimize crossover distortion even while consuming 54% lower quiescent supply current than other competitive devices. Additionally, FAN7021's exceptionally low bias-supply current, combined with low-shutdown current consumption (0.1μA), saves energy and extends battery life. With typical total harmonic distortion (THD) of 0.2% and exceptional power supply rejection ratio (PSRR) of 65dB, the FAN7021 delivers high-quality output performance in portable audio applications.

The FAN7021 power amplifier also features a built-in circuit for popping noise reduction to reduce unexpected speaker noise when the system's power is turned on or off. The FAN7021 reduces overall system footprint by not requiring an output coupling capacitor, a bootstrap capacitor or a snubber network. Other features include thermal shutdown protection, unity gain stability, and external gain configuration capability.

## Electrical Characteristics

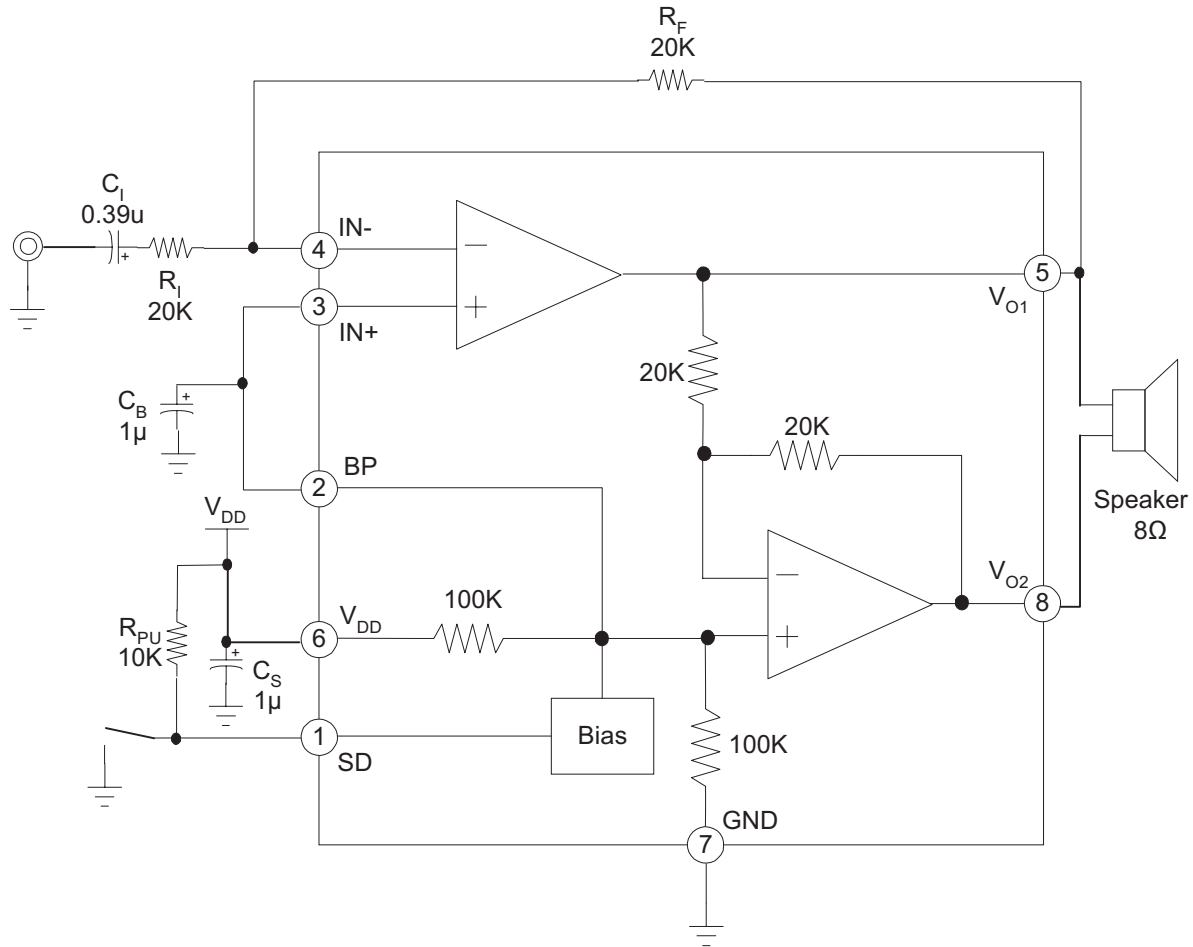
Product Parameter	Fairchild	Competitor
Operating Voltage	2.0 ~ 5.5V	2.0 ~ 5.5V
Quiescent Supply Current	2.6mA	5.6mA
Shutdown Current	0.01μA	0.6μA
Power Supply Rejection Ratio	65dB	60dB
Maximum Output Power (THD + N = 10%, $R_L = 8\Omega$ , $f = 1\text{kHz}$ )	1.5W	1.5W
THD ( $P_O = 1\text{W}$ , $R_L = 8\Omega$ , $f = 20\text{kHz}$ )	0.25%	0.25%
Operating Temperature ( $T_A$ )	-40°C ~ 85°C	-40°C ~ 85°C
Package	8SOP	8SOP, 8MSOP, 8DIP

## Ordering Information

Part Number	Package	Packing	Operating Temperature
FAN7021M	8SOP-225	Tube	-40°C ~ 85°C
FAN7021MX	8SOP-225	Tape & Reel	-40°C ~ 85°C

# FAN7021

## Typical Circuit



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