

AN7161NFP

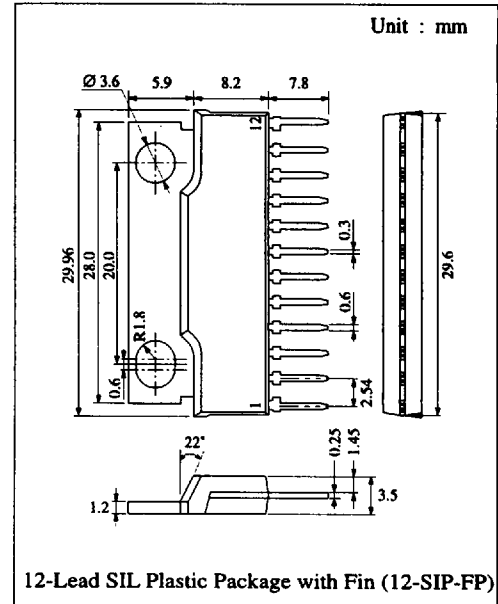
BTL High Audio Power Amplifier

■ Description

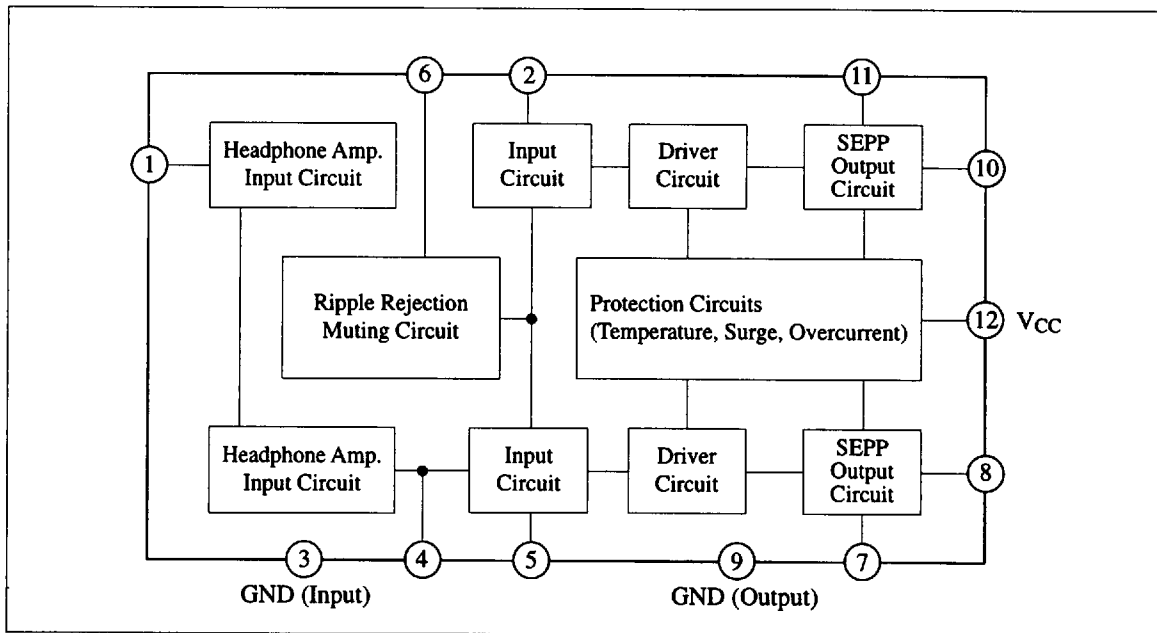
The AN7161N is a monolithic integrated circuit designed for BTL audio high power amplifier with built-in headphone amplifier. It can be widely applicable to Hi Fi, car stereo and TV sound multiplex output.

■ Features

- Low quiescent current, low distortion, low noise, high output power
- Wide supply voltage range: $V_{CC} = 6V \sim 26V$
- Incorporating headphone amplifier circuit
- Built-in muting circuit
- Incorporating protection circuits
- 12-Lead single-in-line package
- Fewer external components
- Low shock noise from power ON/OFF operation



■ Block Diagram



■ Absolute Maximum Ratings (Ta=25°C)

Item	Symbol	Rating	Unit
Supply Voltage	V _{CC}	26	V
Supply Current	I _{CC}	4	A
Power Dissipation	P _D	41.7	W
Surge Supply Voltage	V _{CC(surge)}	50	V
Operating Ambient Temperature	T _{opr}	-30 ~ +75	°C
Storage Temperature	T _{stg}	-55 ~ +150	°C

Operating Supply Voltage Range: V_{CC} = 6.0V ~ 26.0V

■ Electrical Characteristics (V_{CC}=15V, R_L=4Ω, f=1kHz, Ta=25°C)

Item	Symbol	Condition	min.	typ.	max.	Unit
Quiescent Current	I _{CO}	V _{in} = 0mV		45	76	mA
Power Amplifier						
Output Noise Voltage	V _{no}	R _g = 10kΩ, f = 15Hz~30kHz, 12dB/OCT		0.6	1.0	mV
Voltage Gain	G _V	V _{in} = 5mV	48.5	50.5	52.5	dB
Total Harmonic Distortion	THD	V _{in} = 5mV		0.15	0.5	%
Maximum Output Power	P _O	THD = 10%	20	23		W
Output Offset Voltage	V _{O(offset)}	R _g = 0Ω			150	mV
Headphone Amp.						
Output Noise Voltage	V _{no-H}	R _g = 10kΩ, f = 15Hz~30kHz, 12dB/OCT		0.1	0.7	mV
Voltage Gain	G _{V-H}	V _{in} = 10mV	17.5	19.5	21.5	dB
Maximum Output Voltage	P _{O-H}	THD = 1%	10			mW

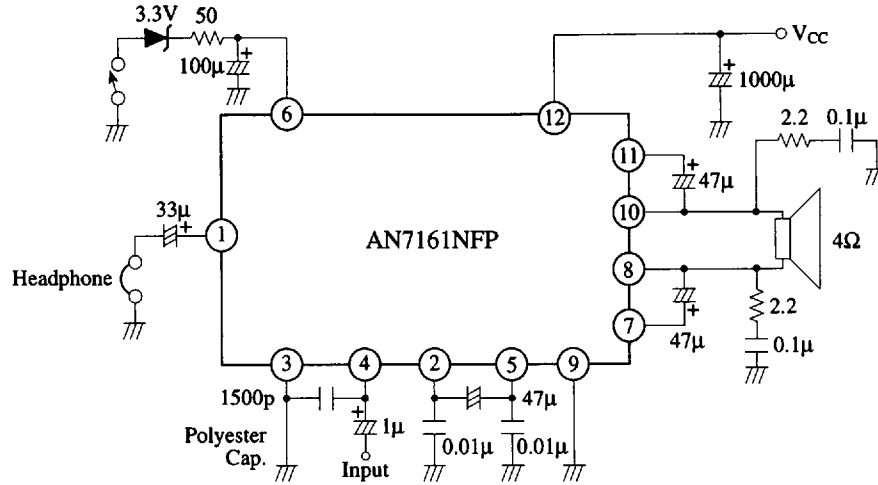
Note: For Power Amplifier, R_L = 4Ω
For Headphone Amp., R_L = 33Ω

■ Pin

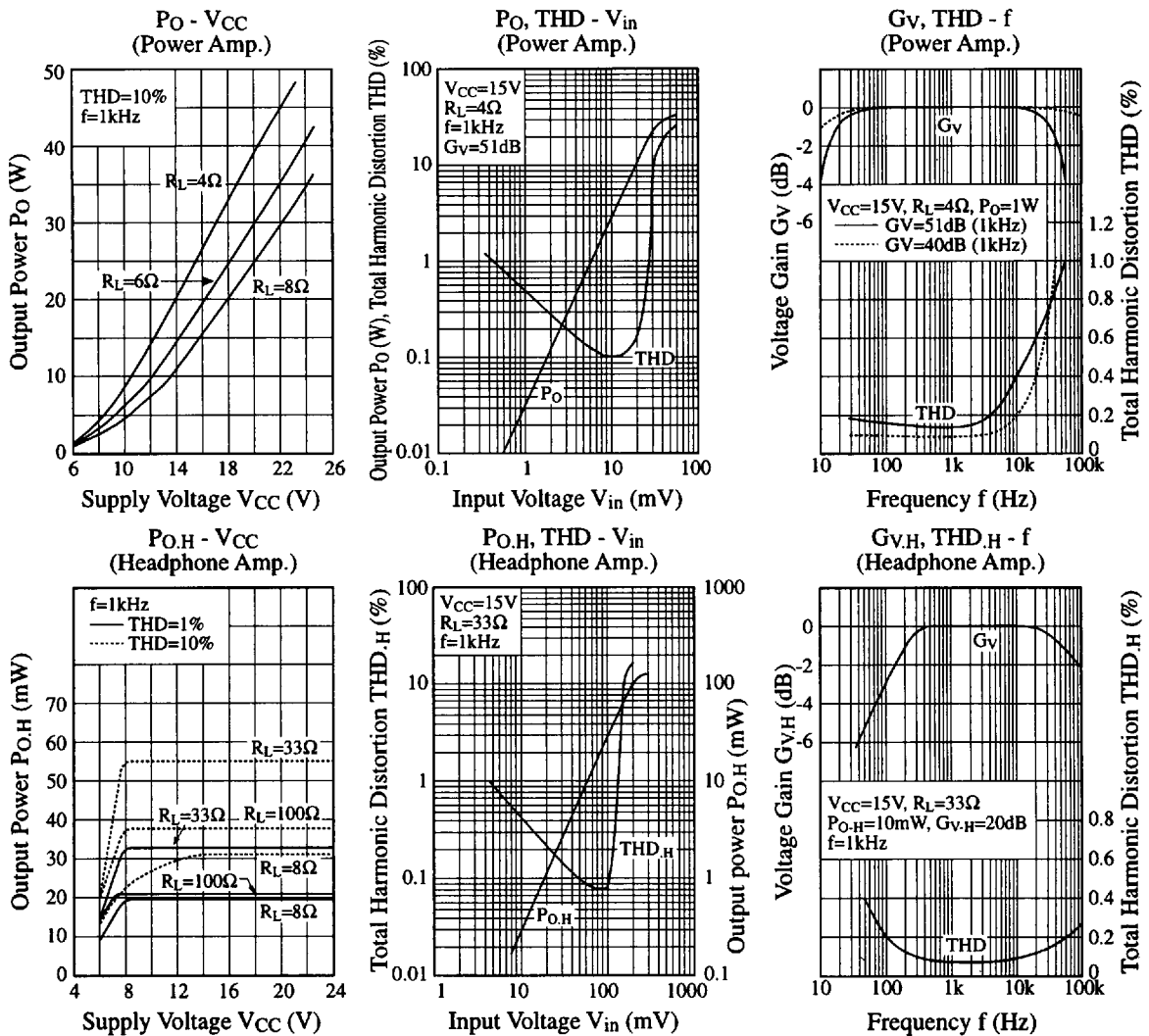
Pin No	Pin Name	Pin No	Pin Name
1	Output (Headphone)	7	Bootstrap Ch.1
2	N.F.B. Ch.2	8	Output Ch.1
3	GND (Input)	9	GND (Output)
4	Input	10	Output Ch.2
5	N.F.B Ch.1	11	Bootstrap Ch.2
6	Ripple Filter	12	V _{CC}

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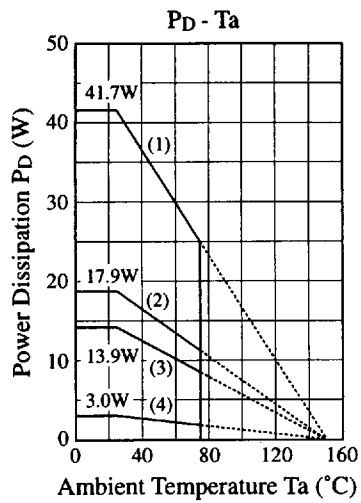
Application Circuit



Characteristics Curve



■ Characteristics Curve (Continue)



- (1) T_c=T_a ($\theta_{j-c}=3^{\circ}\text{C/W}$)
- (2) With a 100cm² x 3mm Al heat sink (black colour coated) or a 200cm² x 2mm Al heat sink (not lacquered)
- (3) With a 100cm² x 2mm Al heat sink (not lacquered)
- (4) Without heat sink

■ Printed Circuit Board Layout (Scale: 1:1)

