

AN7164N

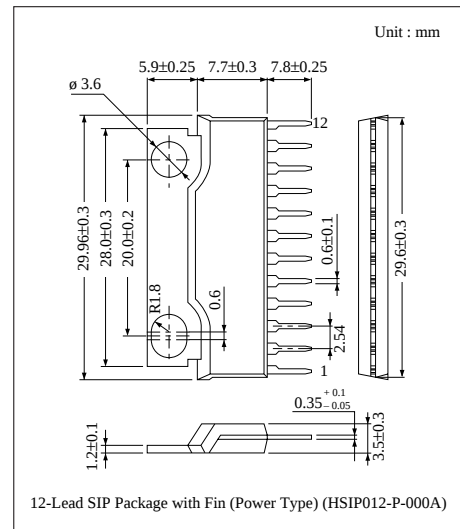
BTL 47W Audio Power Amplifier Circuit

Overview

The AN7164N is an integrated circuit designed for 47W ($V_{CC} = 26.4V$, 8Ω) output power amplifier. High power output (BTL 47W), low distortion and low noise are realized. High reliability is obtained due to same kinds of protectors built in. Furthermore, ON/OFF is enabled even if power is supplied to power supply pin by stand-by circuit.

Features

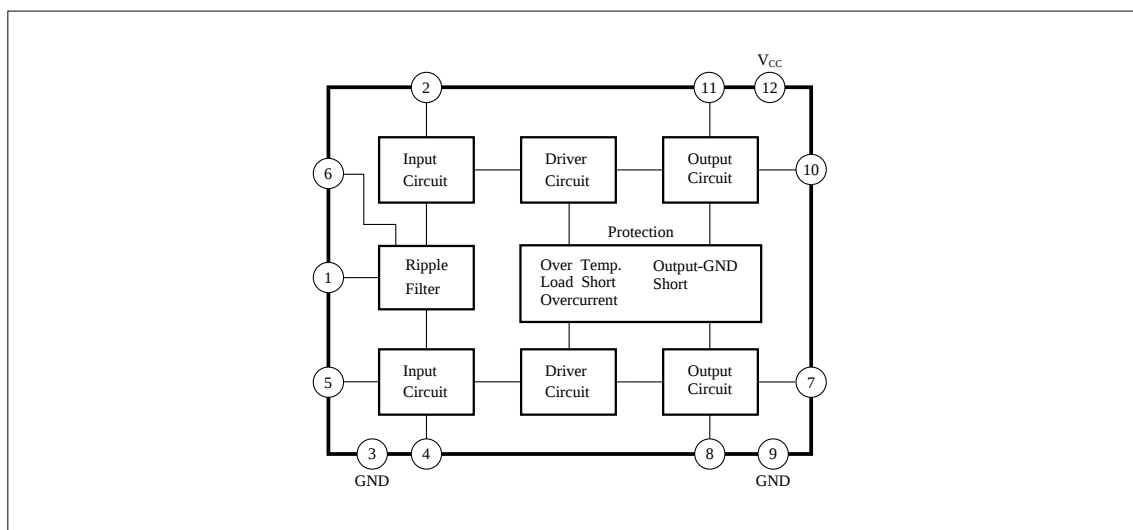
- High output power
- Low distortion, low noise
- Low shock noise from power ON/OFF operation
- Incorporates stand-by circuits
- Incorporates protection circuits (Temperature, Overcurrent, Load Short, Output – GND Short)



Pin Descriptions

Pin No.	Pin Name	Pin No.	Pin Name
1	Ripple Filter	7	Output Ch.1
2	NFB Ch.2	8	Bootstrap Ch.1
3	GND (Input)	9	GND (Output)
4	NFB Ch.1	10	Output Ch.2
5	Input	11	Bootstrap Ch.2
6	Stand-by	12	V_{CC}

Block Diagram



■ Absolute Maximum Ratings (Ta= 25°C)

Parameter	Symbol	Rating	Unit
Supply Voltage	V _{CC}	32 ^{Note)}	V
Supply Current	I _{CC}	5	A
Peak Supply Voltage	V _{CC (surge)}	55	V
Power Dissipation	P _D	62.5	W
Operating Ambient Temperature	T _{opr}	− 30 ~ + 75	°C
Storage Temperature	T _{stg}	− 55 ~ + 150	°C

Note) Non-Signal

■ Recommended Operating Range (Ta= 25°C)

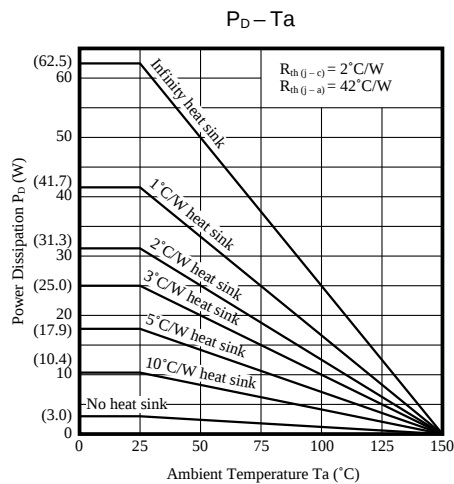
Parameter	Symbol	Range
Operating Supply Voltage Range	V _{CC}	8.3V ~ 30V

■ Electrical Characteristics (V_{CC}= 26.4V, R_L= 8Ω, f= 1kHz, BTL Operation, Ta= 25°C)

Parameter	Symbol	Condition	min.	typ.	max.	Unit
Quiescent Circuit Current	I _{CQ}	V _{in} = 0V	—	55	100	mA
Output Noise Voltage	V _{no}	R _g = 10kΩ ^{Note)}	—	0.9	1.5	mV
Output Offset Voltage	V _{O (offset)}	V _{in} = 0V	—	0	300	mV
Total Harmonic Distortion	THD	P _O = 1W	—	0.06	0.3	%
Voltage Gain	G _V	P _O = 1W	49.5	51.5	53.5	dB
Maximum Output Power	P _O	THD= 10%	40	47	—	W
Ripple Rejection Ratio	RR	R _g = 0Ω, Supply Ripple 1Vrms, 120Hz Sine Wave ^{Note)}	45	48	—	dB
Stand-by Current	I _{STB}	Piny Open	—	0.1	30	μA
Stand-by Threshold Voltage	V _{th (STB)}	DC Voltage of Piny at I _{CQ} = less than 1mA	—	2.7	—	V

Note) With DIN/AUDIO filter

■ Characteristics Curve



Characteristics Curve

