

# AN7164N

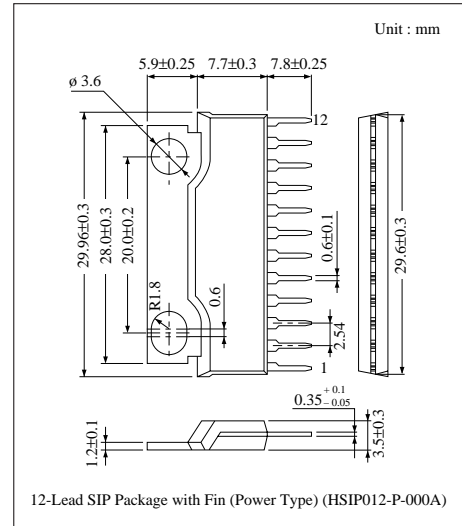
## BTL 47W Audio Power Amplifier Circuit

### ■ Overview

The AN7164N is an integrated circuit designed for 47W ( $V_{CC} = 26.4V$ ,  $8\Omega$ ) 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

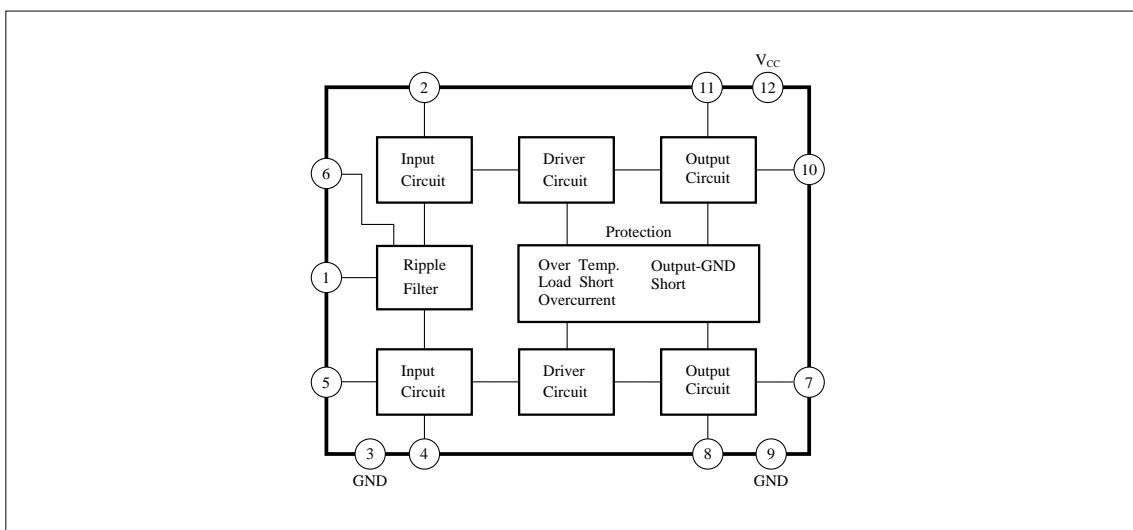
- High output power
- Low distortion, low noise
- Low shock noise from power ON/OFF operation
- Incorporates stand-by circuits
- Incorporates protection circuits (Temperature, Overcurrent, Load Short, Output – GND Short)



### ■ 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 <sub>CC</sub>	32 <sup>Note)</sup>	V
Supply Current	I <sub>CC</sub>	5	A
Peak Supply Voltage	V <sub>CC(surge)</sub>	55	V
Power Dissipation	P <sub>D</sub>	62.5	W
Operating Ambient Temperature	T <sub>opr</sub>	- 30 ~ + 75	°C
Storage Temperature	T <sub>stg</sub>	- 55 ~ + 150	°C

Note) Non-Signal

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

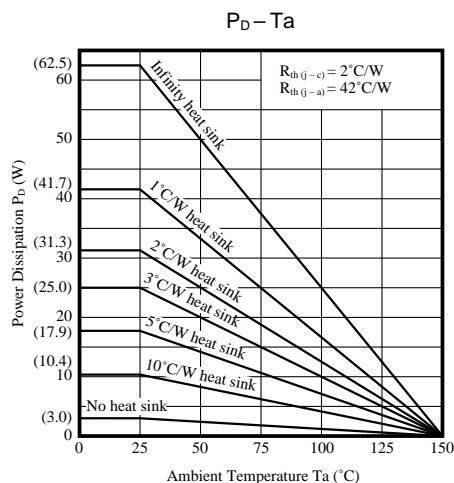
Parameter	Symbol	Range
Operating Supply Voltage Range	V <sub>CC</sub>	8.3V ~ 30V

### ■ Electrical Characteristics (V<sub>CC</sub>= 26.4V, R<sub>L</sub>= 8Ω, f= 1kHz, BTL Operation, Ta= 25°C)

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

Note) With DIN/AUDIO filter

### ■ Characteristics Curve



■ Characteristics Curve

