

# AN7147N

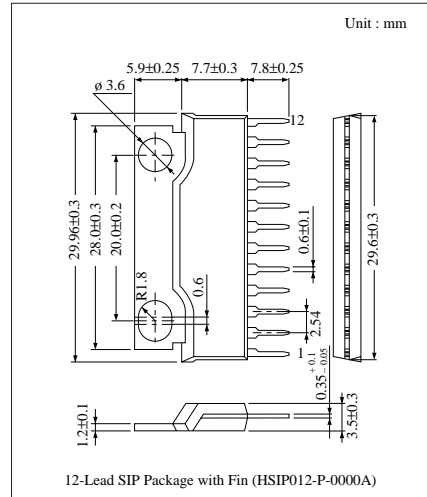
## Dual 5.3W Audio Power Amplifier Circuit

### ■ Overview

The AN7147N is an integrated circuit designed for power amplifier of 5.3W (12.0V, 3Ω) output. Stereo operation is enabled due to incorporating two amps. on one chip. It makes high reliability by smaller quiescent current compared with power amp. current and protectors built in. As quiescent circuit current is very small, it is most suitably used for battery operated set such as radio cassette recorder. Furthermore, low distortion and low noise are realized and external components are very few. 12-pin SIL package enabled compact and high integrated set.

### ■ Features

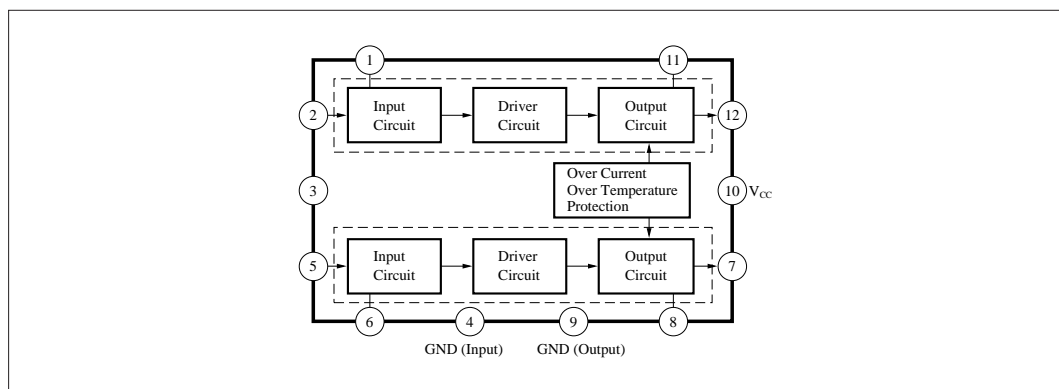
- Low quiescent current
- High operation stability
- Low radiation
- Low distortion
- Low noise
- Low shock noise from power ON/OFF operation
- Fewer external componetns



### ■ Pin Descriptions

Pin No.	Pin Name	Pin No.	Pin Name
1	N.F.B Ch.1	7	Output Ch.2
2	Input Ch.1	8	Bootstrap Ch.2
3	Ripple Filter	9	GND (Output)
4	GND (Input)	10	V <sub>CC</sub>
5	Input Ch.2	11	Bootstrap Ch.1
6	N.F.B Ch.2	12	Output Ch.1

### ■ Block Diagram



### ■ Absolute Maximum Ratings (Ta= 25°C)

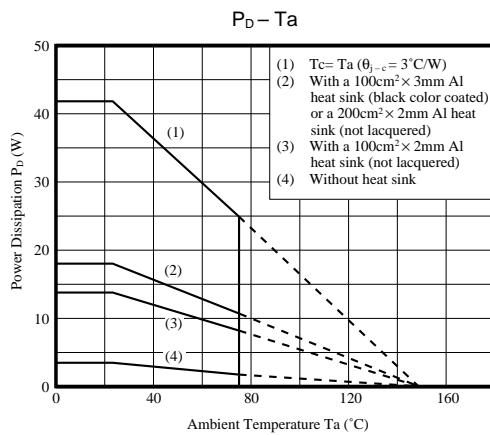
Parameter	Symbol	Rating	Unit
Supply Voltage	V <sub>CC</sub>	24	V
Supply Current	I <sub>CC</sub>	4	A
Power Dissipation *	P <sub>D</sub>	41.7	W
Operating Ambient Temperature	T <sub>opr</sub>	- 30 ~ + 75	°C
Storage Temperature	T <sub>stg</sub>	- 55 ~ + 150	°C

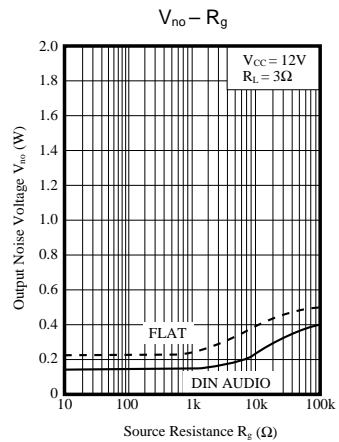
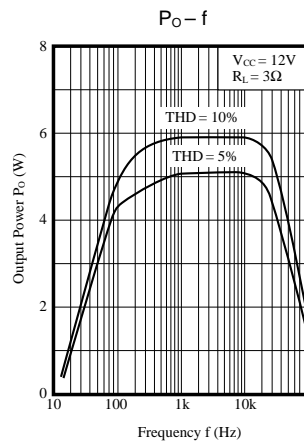
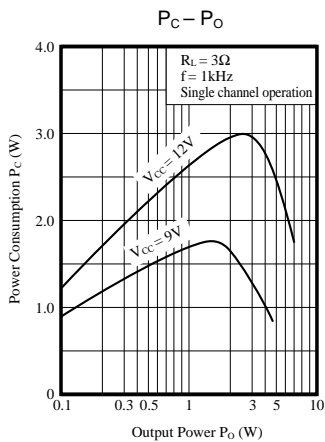
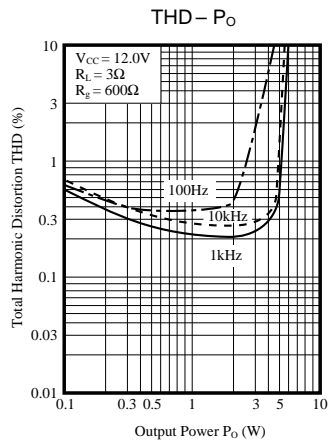
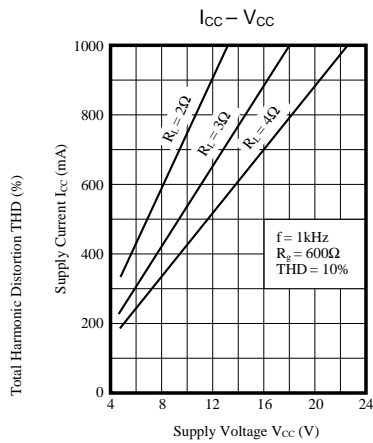
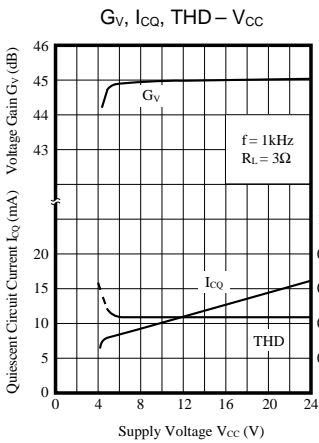
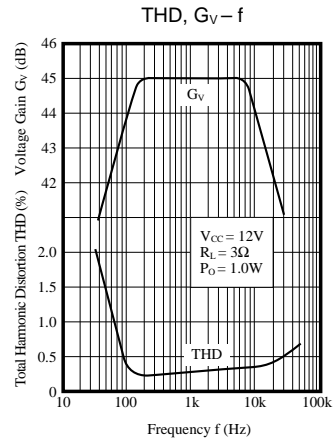
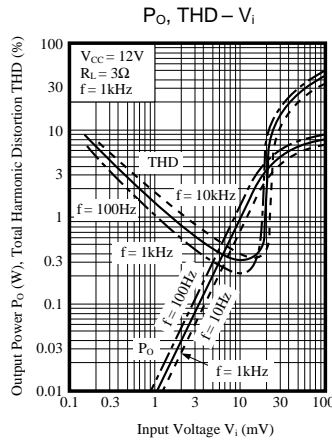
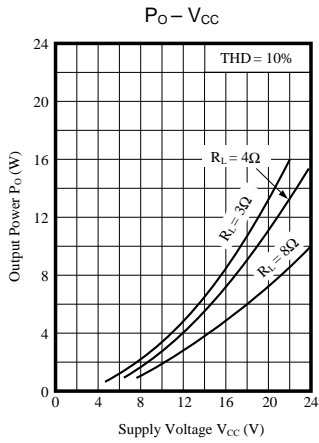
\* R<sub>θj-c</sub> = 3°C/W

### ■ Electrical Characteristics (V<sub>CC</sub> = 12V, R<sub>C</sub> = 3Ω, f = 1kHz, Ta = 25°C)

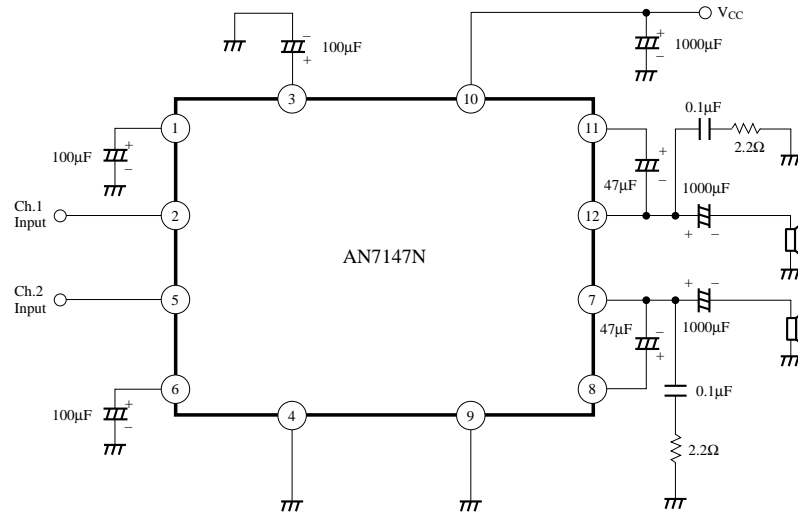
Parameter	Symbol	Condition	min.	typ.	max.	Unit
Quiescent Circuit Current	I <sub>CQ</sub>	V <sub>i</sub> = 0mV	—	13	19	mA
Voltage Gain	G <sub>v</sub>	P <sub>O</sub> = 1.0W	42.5	44.5	46.5	dB
Total Harmonic Distortion	THD	P <sub>O</sub> = 1.0W, f = 1kHz	—	0.2	0.75	%
		P <sub>O</sub> = 1.0W, f = 100Hz	—	0.4	—	
		P <sub>O</sub> = 1.0W, f = 10kHz	—	0.3	—	
Maximum Output Power	P <sub>O</sub>	THD = 10%, R <sub>L</sub> = 3Ω	4.7	5.3	—	W
		THD = 10%, R <sub>L</sub> = 4Ω	—	4.3	—	
		THD = 10%, V <sub>CC</sub> = 9V, R <sub>L</sub> = 3Ω	—	2.9	—	
Output Noise Voltage	V <sub>no</sub>	R <sub>g</sub> = 10kΩ, f = 15Hz ~ 30kHz, 12dB/OCT	—	0.25	—	mV
		R <sub>g</sub> = 10kΩ, Without Filter	—	0.40	0.5	
Channel Balance	CB	P <sub>O</sub> = 0.5W	—	0	1	dB
Channel Separation	CS	P <sub>O</sub> = 0.5W	40	50	—	dB
Ripple Rejection Ratio	RR	P <sub>O</sub> = 0.5W	45	50	—	dB
Output Offset Voltage	V <sub>O (offset)</sub>	V <sub>i</sub> = 0	—	0	200	mV

Note) Operating Supply Voltage Range : 5V to 22V





### ■ Application Circuit



### ■ Printed Circuit Board Layout

