

AN7142

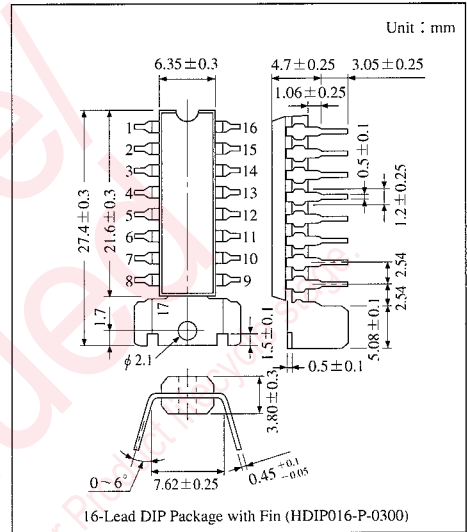
Dual 1.0W Audio Power Amplifier Circuit

Overview

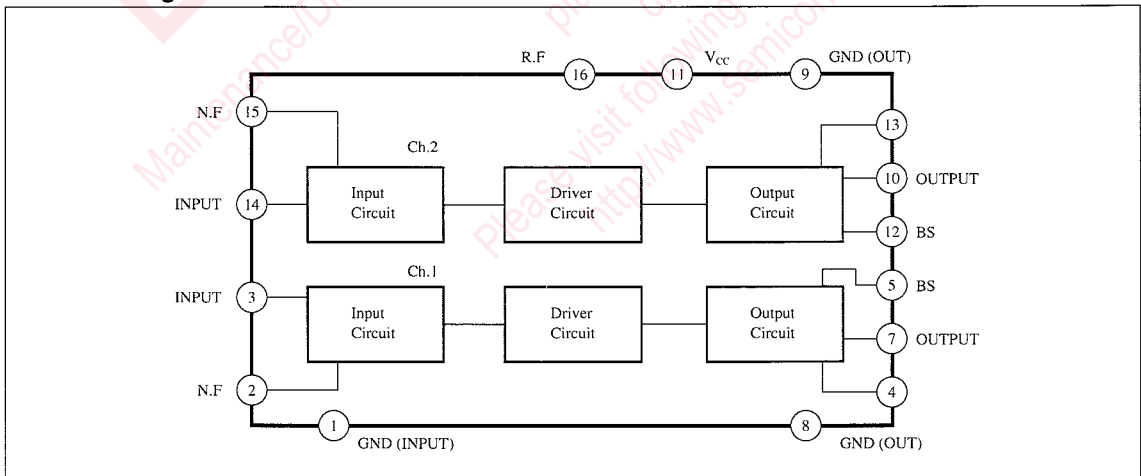
The AN7142 is an integrated circuit designed for power amplifier of 1.0W (6V, 4Ω) output. Stereo operation is enabled due to incorporating two amplifiers on one chip. As quiescent current is very few compared with current power amplifier, it is most suitably used for battery operated set such as radio cassette recorder. Low noise is realized and few external component have been realized. 16-pin DIL package has enabled compactness and high-density mounting of a set.

Features

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



Block Diagram



Pin Descriptions

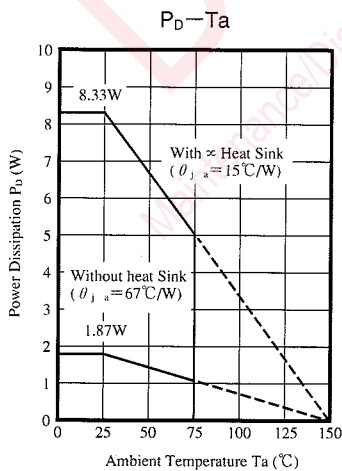
Pin No.	Pin Name	Pin No.	Pin Name
1	GND (Input)	9	GND (Output)
2	N.F.B Ch.1	10	Output Ch.2
3	Input Ch.1	11	V _{CC}
4	Crossover Distortion Suppression Ch.1	12	Bootstrap Ch.2
5	Bootstrap Ch.1	13	Crossover Distortion Suppression Ch.2
6	Non Connection	14	Input Ch.2
7	Output Ch.1	15	N.F.B Ch.2
8	GND (Output)	16	Ripple Filter

Absolute Maximum Ratings (T_a=25°C)

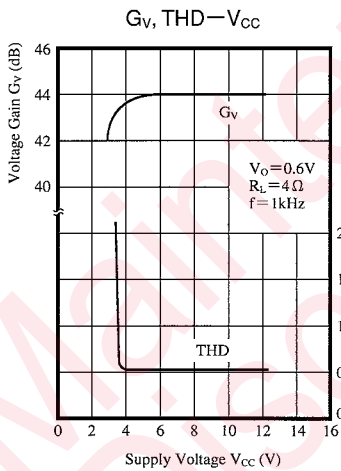
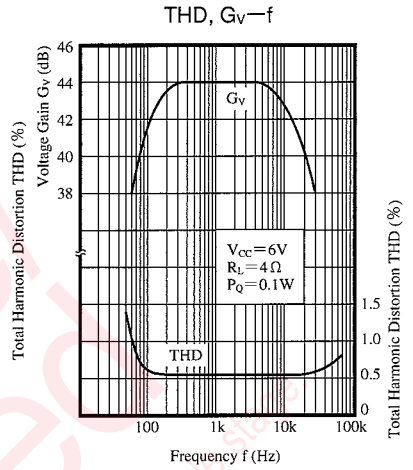
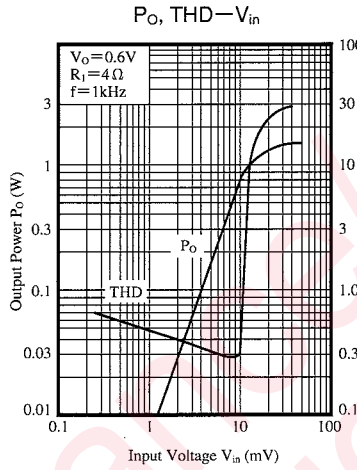
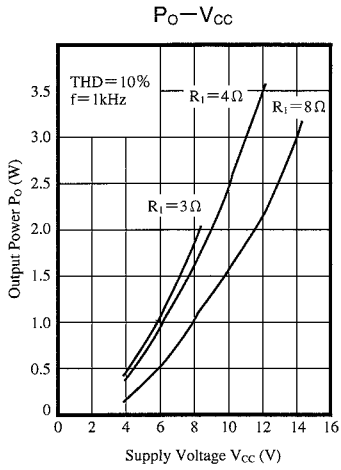
Parameter	Symbol	Rating	Unit
Supply Voltage	V _{CC}	18	V
Supply Current	I _{CC}	4	A
Power Dissipation	P _D	8.3	W
Operating Ambient Temperature	T _{opr}	-30 ~ +75	°C
Storage Temperature	T _{stg}	-55 ~ +150	°C

Electrical Characteristics (V_{CC}=6V, R_L=4Ω, f=1kHz, T_a=25°C)

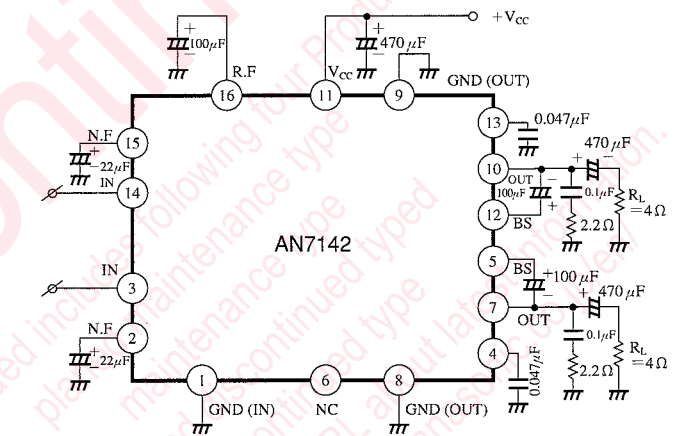
Parameter	Symbol	Condition	min.	typ.	max.	Unit
Quiescent Circuit Current	I _{CC}	V _{in} =0mV	9	14	21	mA
Output Noise Voltage	V _{no}	V _{in} =0mV, R _g =10kΩ, With filter as 15~30kHz (12dB/oct)	—	0.3	0.5	mV
Voltage Gain	G _V	V _O =0.5V	41.5	43.5	45.5	dB
Total Harmonic Distortion	THD	V _O =0.5V	—	0.6	1.1	%
Maximum Output Power	P _{O(max.)}	THD=10%	0.7	0.9	—	W
Channel Balance	CB	V _O =0.5V	—	—	1	dB



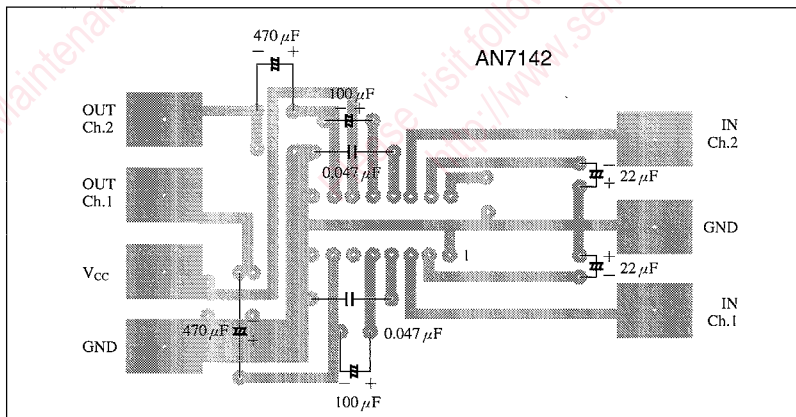
ICs for
Audio
Common
Use



Application Circuit



Printed Circuit Board Layout



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