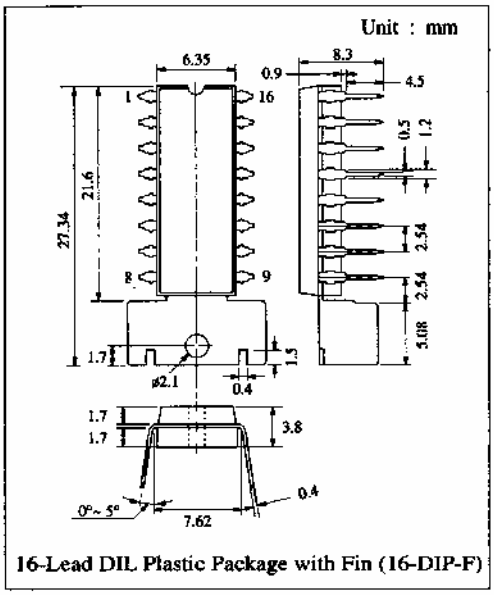
AN7142

0.9W Dual Audio Power Amplifier



16-Lead DIL Plastic Package with Fin (16-DIP-F)

■ Description

The AN7142 is a monolithic integrated circuit designed for dual audio power amplifiers in consumer applications. It is suitable for portable stereo radio/cassette recorders.

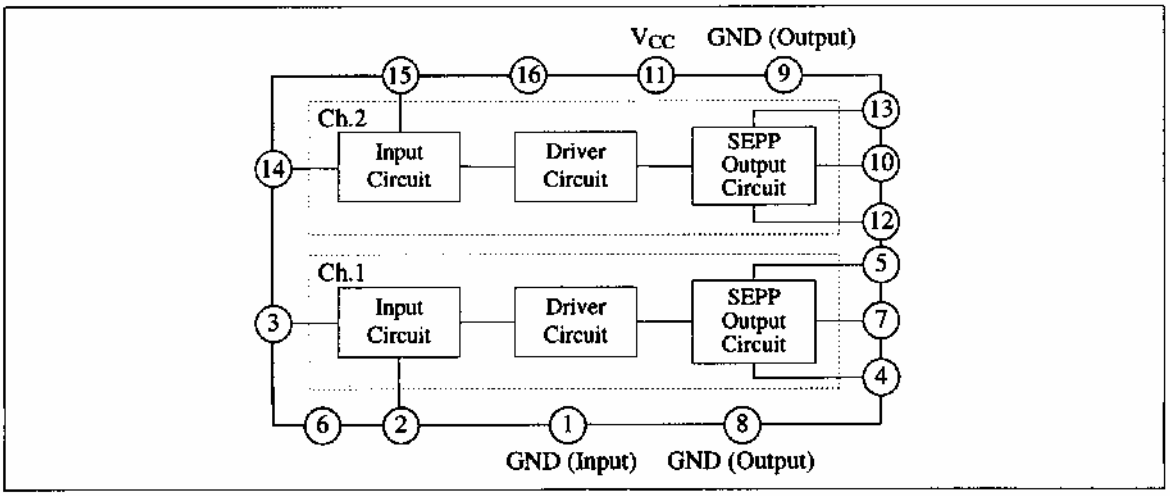
■ Features

- Wide operating voltage range: V_{CC} = 3.9V~18V
- Dual channel operation in a single DIP package
- Large maximum output power: P_O = 0.9W at V_{CC} = 6V, R_L=4Ω

■ Pin

Pin No	Pin Name	Pin No	Pin Name
1	GND (Input)	9	GND (Output) Ch.2
2	Negative Feedback 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	N.C.	14	Input Ch.2
7	Output Ch.1	15	Negative Feedback Ch.2
8	GND (Output) Ch.1	16	Ripple Filter

■ Block Diagram



■ Absolute Maximum Ratings (Ta=25°C)

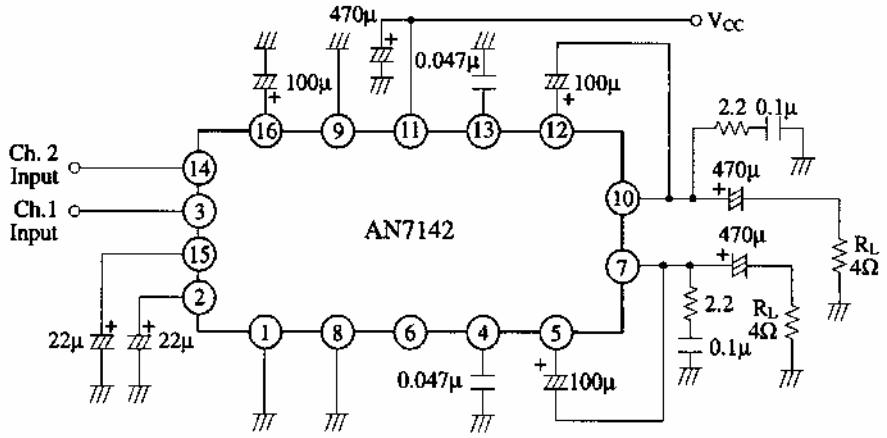
Item	Symbol	Rating	Unit
Supply Voltage	V_{CC}	18	V
Supply Current	I_{CC}	4	A
Power Dissipation	P_D	8.3	W
Operating Ambient Temperature	Topr	-30 ~ +75	°C
Storage Temperature	Tstg	-55 ~ +150	°C

Operating Supply Voltage Range: V_{CC} = 3.9V ~ 18V

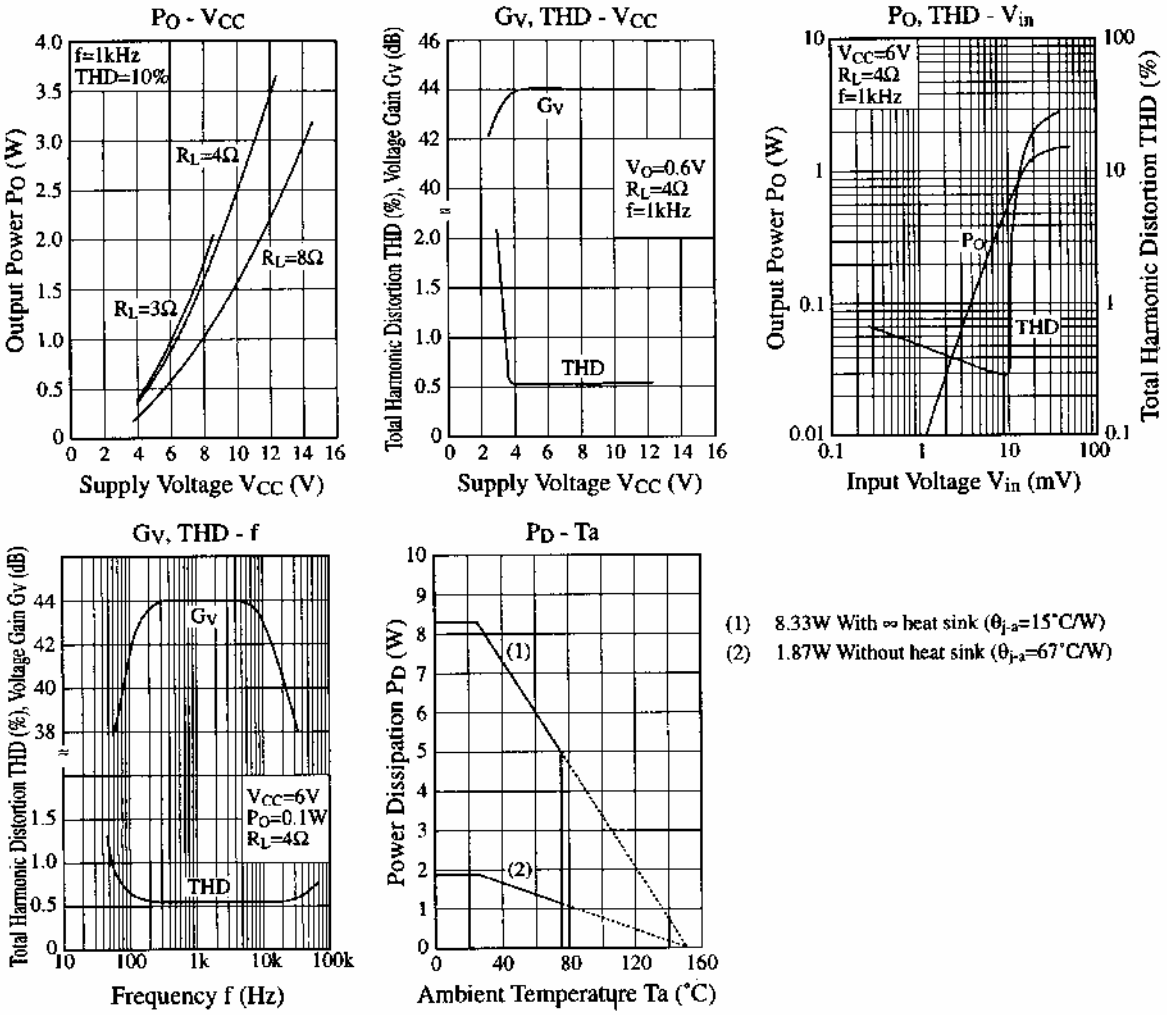
■ Electrical Characteristics (V_{CC}=6V, R_L=4Ω, f=1kHz, Ta=25°C)

Item	Symbol	Condition	min.	typ.	max.	Unit
Quiescent Current	I_{CQ}	V_{in} = 0mV	9	14	21	mA
Output Noise Voltage	V_{no}	V_{in} = 0mV, R_g = 10kΩ, With filter 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	%
Maxmium Output Power	$P_{O(max)}$	THD = 10%	0.7	0.9		W
Channel Balance	CB	V_O = 0.5V			1	dB

■ Application Circuit



■ Characteristics Curve



(1) 8.33W With ∞ heat sink ($\theta_{j\text{-}a}$=15°C/W)
(2) 1.87W Without heat sink ($\theta_{j\text{-}a}$=67°C/W)

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