

AN7168

Dual 5.7W Audio Power Amplifier

Description

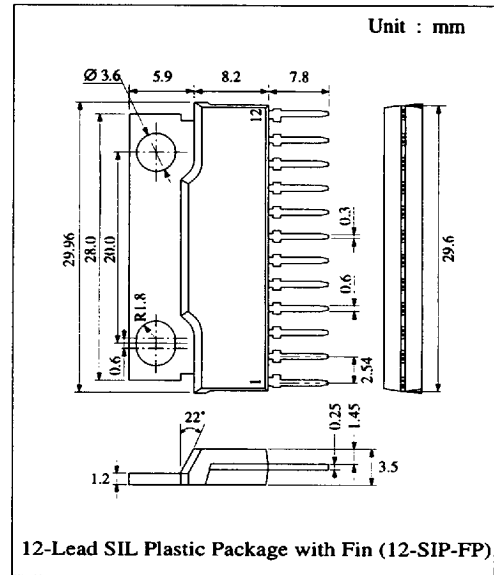
The AN7168 is a monolithic integrated circuit designed for dual 5.7W audio power amplifier. Stereo operation is possible due to the 2 built-in amplifiers and together with the muting circuit and the various protection circuits, high reliability and compactness can be realized.

Features

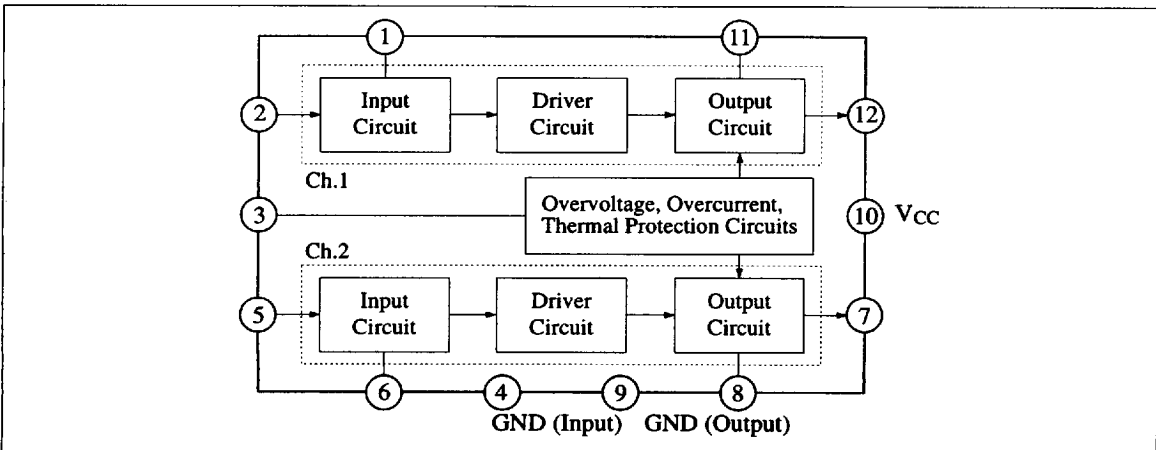
- High stable operation
- Low distortion
- Low quiescent current
- Low noise
- Low shock noise from power ON/OFF operation
- Built-in muting circuit
- Few external components
- Incorporating protection circuits

Pin

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 _{CC}
5	Input Ch.2	11	Bootstrap Ch.1
6	N.F.B. Ch.2	12	Output Ch.1



Block Diagram



■ 6932852 0013822 414 ■

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Panasonic

■ Absolute Maximum Ratings (Ta=25°C)

Item	Symbol	Rating	Unit
Supply Voltage	V _{CC}	24	V
Supply Current	I _{CC}	4	A
Power Dissipation*1	P _D	41.7	W
Surge Supply Voltage*2	V _{CC(surge)}	50	V
Operating Ambient Temperature	Topr	-30 ~ +75	°C
Storage Temperature	Tstg	-55 ~ +150	°C

Operating supply voltage range: V_{CC} = 7.0V ~ 20.0V

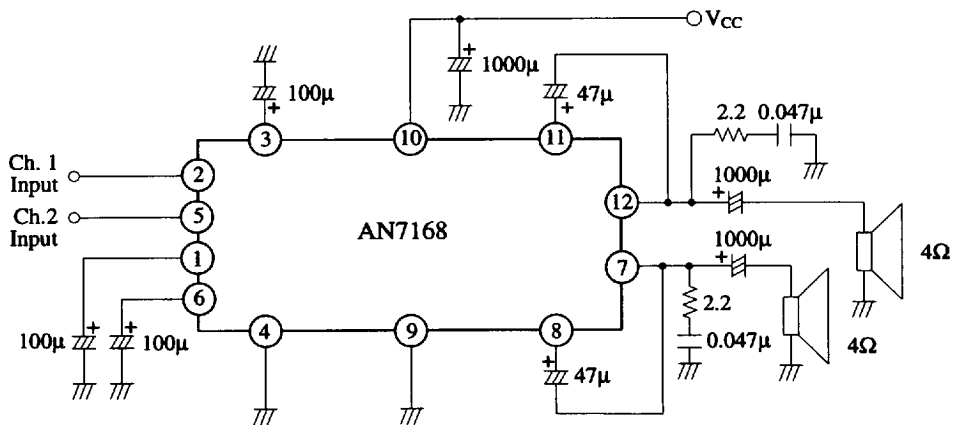
*1 R_{θj-c} = 3°C/W

*2 Voltage applied time = 0.2s

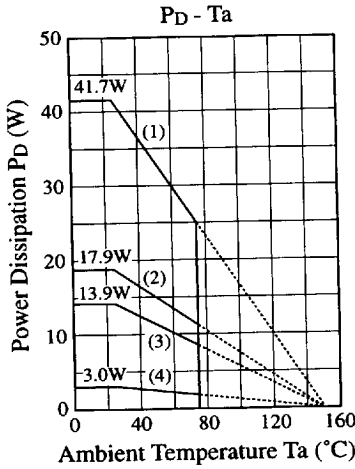
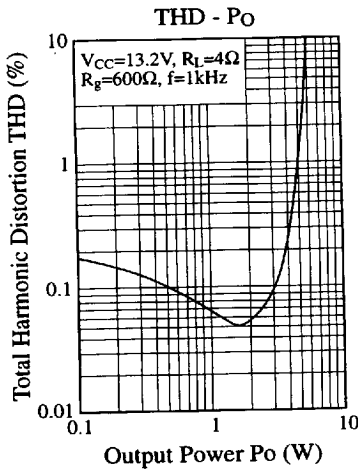
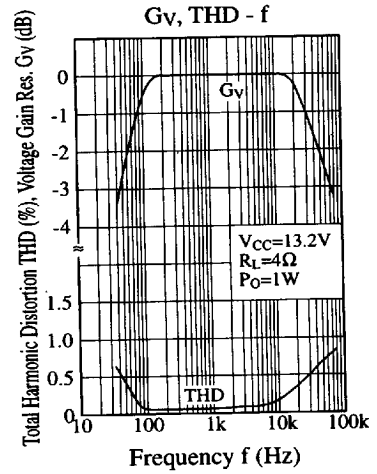
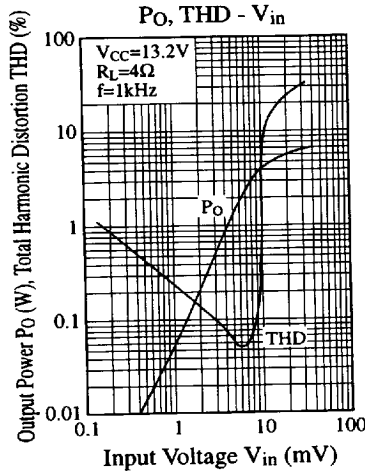
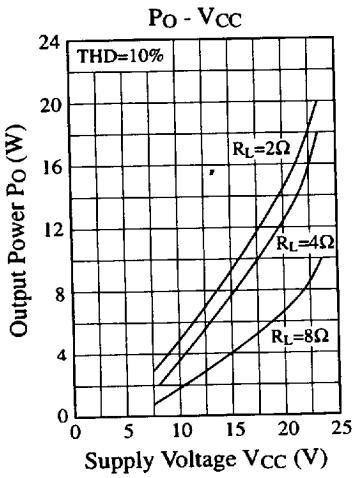
■ Electrical Characteristics (V_{CC}=13.2V, R_L=4Ω, f=1kHz, Ta=25°C)

Item	Symbol	Condition	min.	typ.	max.	Unit
Quiescent Current	I _{CQ}	V _{in} = 0mV	30	55	100	mA
Total Harmonic Distortion	THD	P _O = 0.5W, f = 1kHz		0.1	0.5	%
		P _O = 0.5W, f = 100Hz		0.1		
		P _O = 0.5W, f = 10kHz		0.2		
Maximum Output Power	P _O	THD = 10%	5.0	5.7		W
		THD = 10%, R _L = 2Ω		8.9		
		THD = 10%, R _L = 8Ω		3.1		
Voltage Gain	G _V	P _O = 0.5W	52	54	56	dB
Output Noise Voltage	V _{no}	R _g = 10kΩ, 1000pF, f = 15Hz ~ 30kHz, 12dB/OCT		0.8	1.5	mV
		R _g = 10kΩ, 1000pF, Without filter		1.1		
Channel Balance	CB	P _O = 0.5W		0	1	dB
Channel Separation	CS	P _O = 0.5W	40	50		dB
Ripple Rejection	RR	R _g = 10kΩ, V _r = 280mV, f _r = 120Hz	35	45		dB
Offset Voltage	V _{O(offset)}	V _{in} = 0mV		0	200	mV

■ Application Circuit



■ Characteristics Curve



- (1) T_c=T_a (θ_c=3°C/W)
- (2) With a 100cm² x 3mm Al heat sink (black colour coated) or a 200cm² x 2mm Al heat sink (not lacquered)
- (3) With a 100cm² x 2mm Al heat sink (not lacquered)
- (4) Without heat sink

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

