

AN7158N

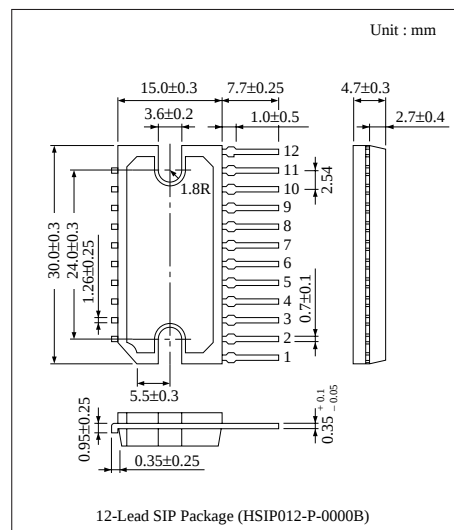
Dual 7.5W Audio Power Amplifier Circuit

■ Overview

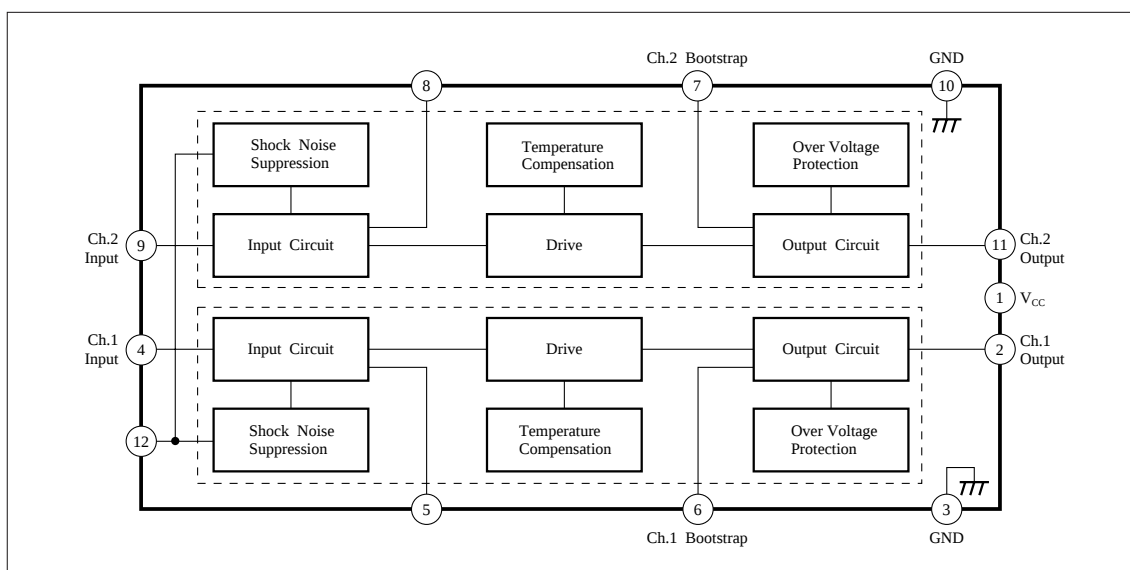
The AN7158N is an integrated circuit designed for power amplifier of 7.5W (16V, 4Ω) output with low noise and low distortion, and it suits TV set with multi-sound. Stereo operation is enabled due to incorporating two amplifiers on one chip. 12-pin SIL package enabled compact and high-densely mounted set.

■ Features

- Incorporating protection circuits (surge, thermal protection and etc.)
- Automatic operating point stabilizer circuit
- Low distortion, low 1/f noise
- Low shock noise from power ON/OFF operation
- Better channel separation
- Fewer external components



■ Block Diagram



■ Absolute Maximum Ratings (Ta= 25°C)

Parameter	Symbol	Rating	Unit
Supply Voltage Note 1)	V_{CC}	24	V
Supply Voltage Note 2)	V_{CC}	20	V
Supply Current	I_{CC}	4	A
Power Dissipation (Ta= 45°C)	P_D	30	W
Operating Ambient Temperature	T_{opr}	- 30 ~ + 75	°C
Storage Temperature	T_{stg}	- 55 ~ + 150	°C

Note 1) Without signal $V_{CC} = 24V$ (For non-stabilized supply)

Note 2) Operation $V_{CC} = 20V$ (For stabilized supply)

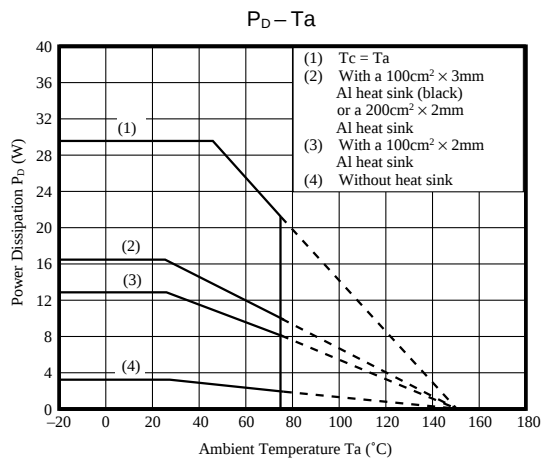
■ Electrical Characteristics (Ta= 25°C)

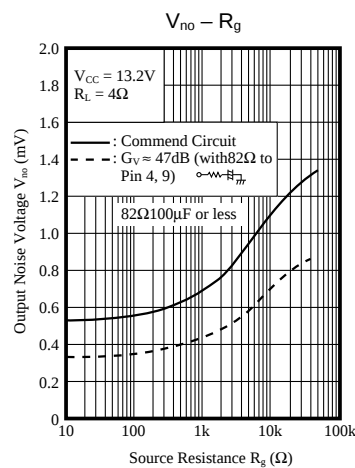
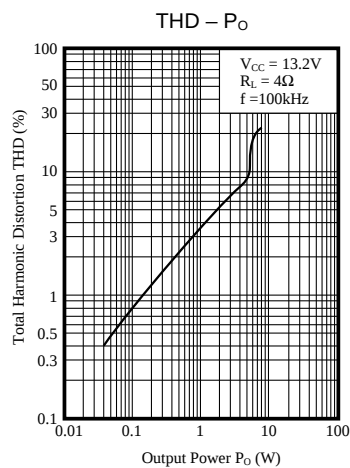
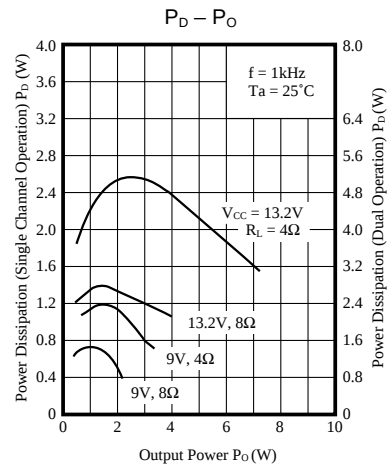
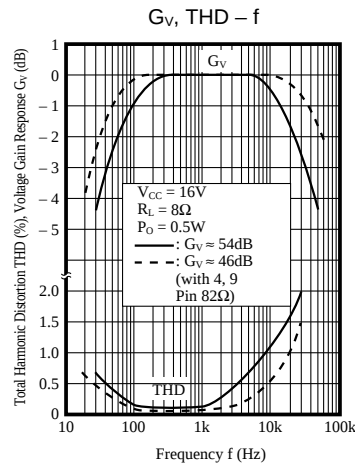
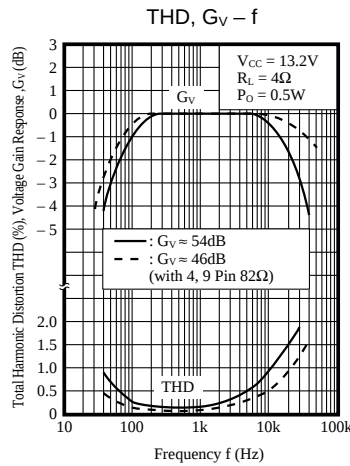
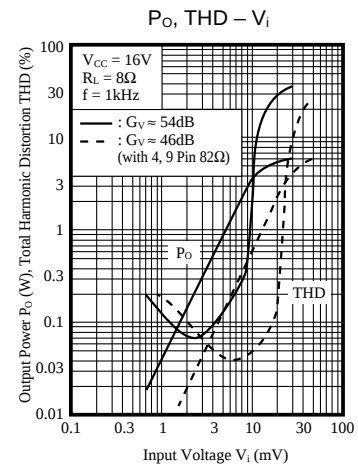
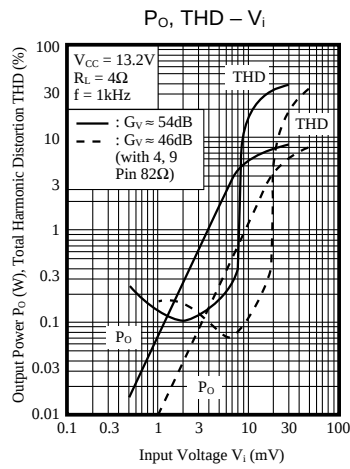
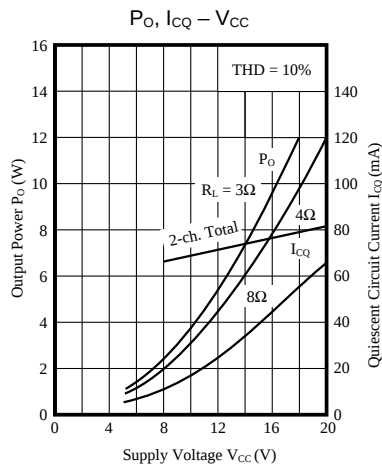
• $V_{CC}=13.2V$, $R_L= 4\Omega$, $f=1kHz$

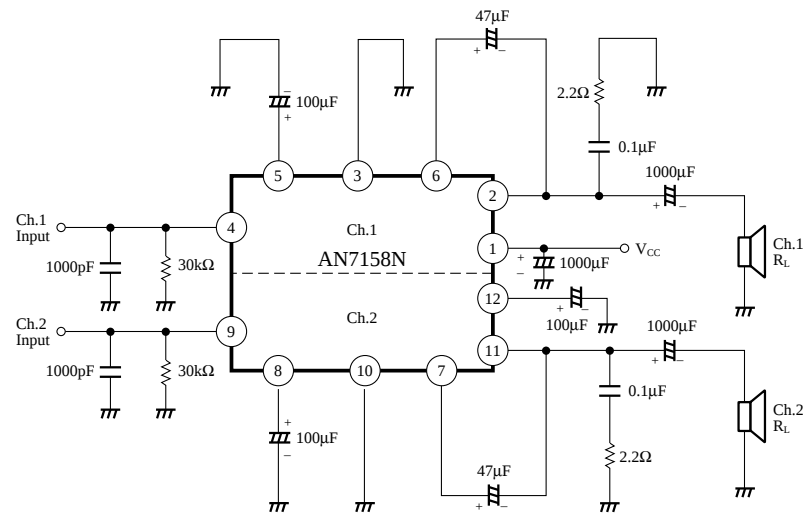
Parameter	Symbol	Condition	min.	typ.	max.	Unit
Quiescent Circuit Current	I_{CQ}	$V_i = 0mV$	40	70	120	mA
Voltage Gain	G_V	$V_i = 3mV$	52	54	56	dB
Output Power	P_O	THD = 10%	4.8	5.5	—	W
Total Harmonic Distortion	THD	$V_i = 3mV$	—	0.15	1	%
Output Noise Voltage	V_{no}	$R_g = 10k\Omega$	—	1	3	mV
Channel Balance	CB	$V_i = 3mV$	—	0	1	dB
Separation	Sep.		45	50	—	dB
Ripple Rejection Ratio	RR	$f = 60Hz$, $R_g = 600\Omega$	—	40	—	dB

• $V_{CC}=16V$, $R_L= 8\Omega$, $f=1kHz$

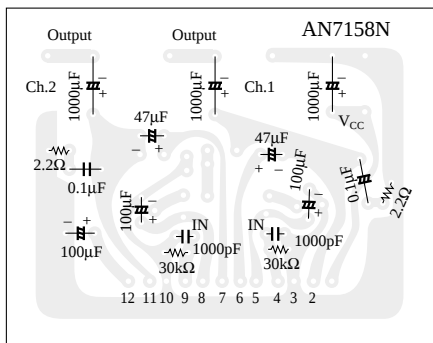
Parameter	Symbol	Condition	min.	typ.	max.	Unit
Quiescent Circuit Current	I_{CQ}	$V_i = 0mV$	40	80	140	mA
Voltage Gain	G_V	$V_i = 4mV$	52	54	56	dB
Output Power	P_O	THD = 10%	4	4.5	—	W
		$R_L = 4\Omega$, THD = 10%	—	7.5	—	W
Total Harmonic Distortion	THD	$V_i = 4mV$	—	0.1	1	%
Output Noise Voltage	V_{no}	$R_g = 10k\Omega$	—	1	3	mV
Crosstalk	CT	$V_i = 4mV$, $R_g = 10k\Omega$	45	—	—	dB







■ Printed Circuit Board Layout



■ Pin Descriptions

Pin No.	Pin Name	Pin No.	Pin Name
1	V _{CC}	7	Bootstrap Ch.2
2	Output Ch.1	8	N.F.B Ch.2
3	GND	9	Input Ch.2
4	Input Ch.1	10	GND
5	N.F.B Ch.1	11	Output Ch.2
6	Bootstrap Ch.1	12	Ripple Filter