

AN5275

15W × 2Ch. Low Frequency Power Amplifier Circuit for TV

■ Overview

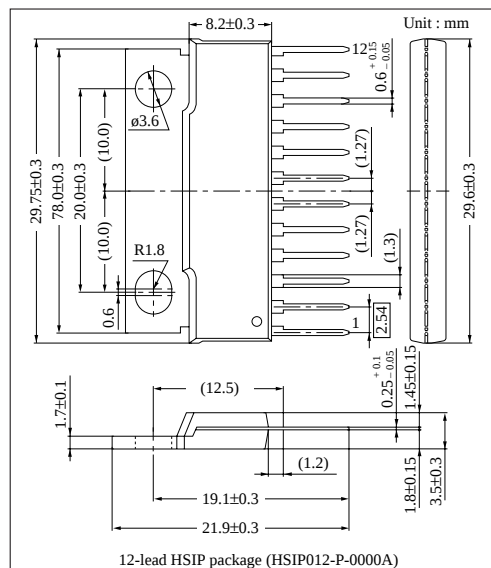
The AN5275 is an audio power IC developed for TV sound output (15W × 2Ch.).

High density mounting is possible and it can contribute to cost reduction, because it requires fewer external components.

It incorporates various protective circuits to provide high reliability and breakage resistance.

■ Features

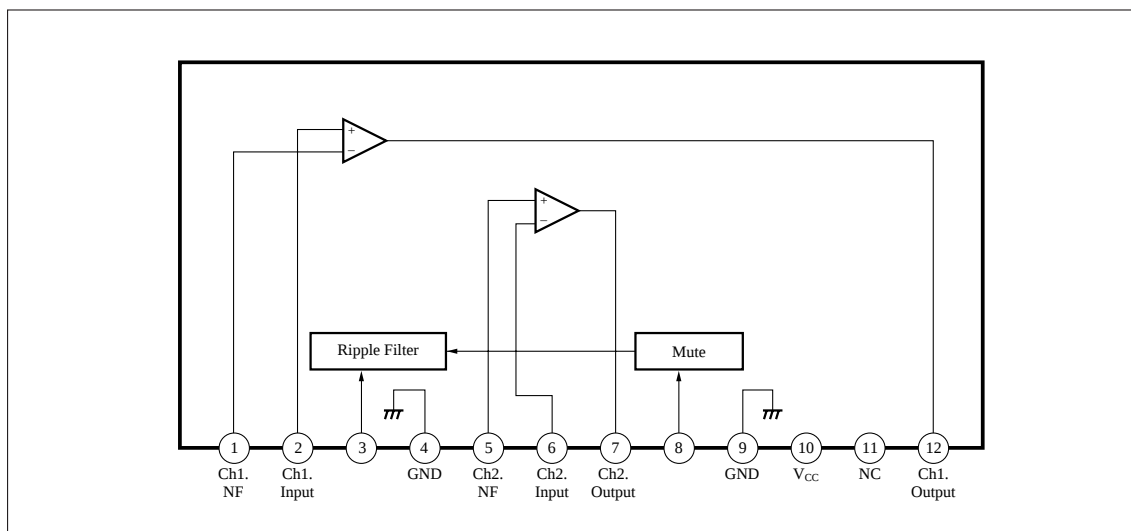
- Wide operating supply voltage range (10 to 40V)
- Little distortion and noise
- Fewer external components
 - BS (boot-strap) electrolytic capacitor not required
- Audio muting function built-in
- Very small shock noise at power ON/OFF
- Various protective circuits built-in
 - Load short-circuit protection. Protection against over-voltage and – current. Temperature protection



■ Pin Description

Pin No.	Pin Description	Pin No.	Pin Description
1	Ch.1 NF pin	7	Ch.2 output pin
2	Ch.1 input pin	8	Muting pin
3	Ripple filter pin	9	GND (sound output side)
4	GND (sound input side)	10	Supply voltage
5	Ch.2 input pin	11	NC
6	Ch.2 NF pin	12	Ch.1 output pin

■ Block Diagram



■ Absolute Maximum Ratings (Ta= 25°C)

Parameter	Symbol	Rating	Unit
Supply Voltage	V _{CC}	4.5	V
Supply Current	I _{CC}	4.0	A
Power Dissipation ^{Note 1)}	P _D	25	W
Peak Supply Voltage ^{Note 2)}	V _{surge}	60	V
Operating Ambient Temperature	T _{opr}	– 25 ~ + 80	°C
Storage Temperature	T _{stg}	– 55 ~ + 150	°C

Note 1) $R_{\theta j-c} = 2^{\circ}\text{C/W}$

Note 2) $t = 0.2\text{s}$

■ Recommended Operating Range (Ta = 25°C)

Parameter	Symbol	Range
Operating Supply Voltage Range	V _{CC}	10.0V ~ 40.0V

■ Electrical Characteristics (V_{CC}= 32V, f_{req.}= 1kHz, Ta= 25±2°C)

Parameter	Symbol	Condition	min.	typ.	max.	Unit
Static Circuit Current	I _{CQ}	V _{IN} = 0mV, R _L = 8Ω	—	100	200	mA
Output End Noise Voltage ^{Note 1)}	V _{NO}	R _g = 4.7kΩ, R _L = 8Ω	—	0.12	0.4	mVrms
Voltage Gain	G _V	V _{IN} = 57mV, R _L = 8Ω	32	34	36	dB
Total Harmonics Distortion	THD	V _{IN} = 57mV, R _L = 8Ω	—	0.05	0.40	%
Max. Output Power	P _O	THD= 10%, R _L = 8Ω	11	15	—	W
Ripple Rejection Ratio ^{Note 1)}	RR	R _L = 8Ω, V _r = 1Vrms f _r = 120Hz, R _g = 4.7kΩ	45	57	—	dB
Channel Balance	CB	V _{IN} = 57mV, R _L = 8Ω	–1	0	1	dB

Note 1) 15Hz to 30kHz (12dB/OCT) filter is used for measurement.

