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ICs for Audio Common Use

**Panasonic**

# AN5275

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

### ■ Overview

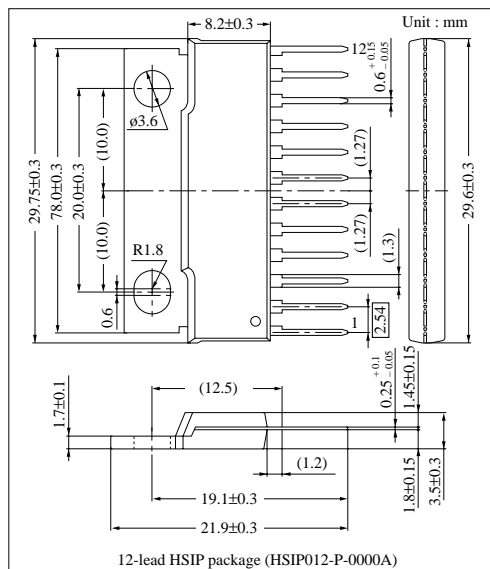
The AN5275 is an audio power IC developed for TV sound output (15W × 2Ch.).

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

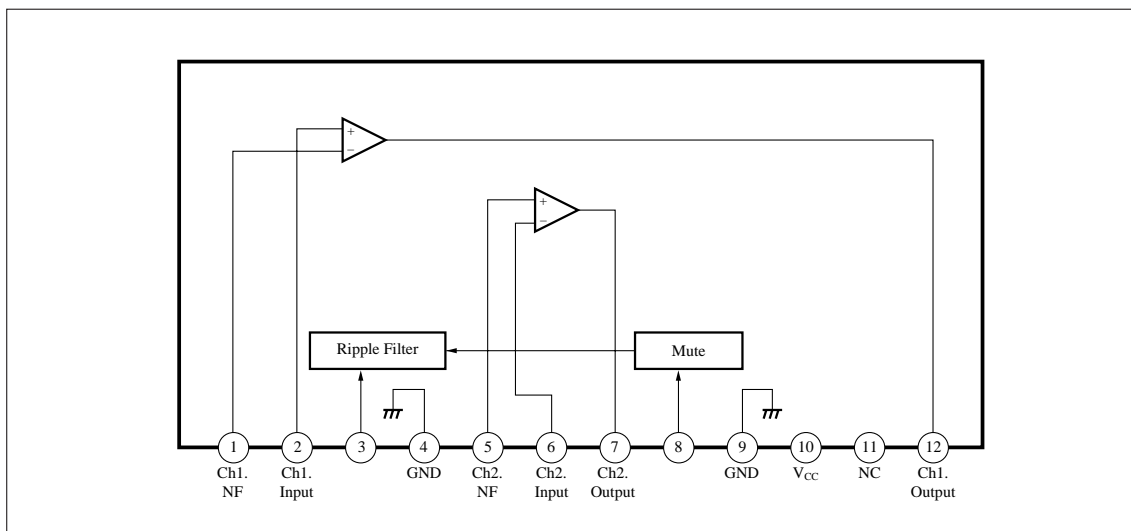
- Wide operating supply voltage range (10 to 40V)
- Little distortion and noise
- Fewer external components
  - BS (boot-strap) electrolytic capacitor not required
- Audio muting function built-in
- Very small shock noise at power ON/OFF
- Various protective circuits built-in
  - Load short-circuit protection.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



AN5275

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■ Absolute Maximum Ratings (Ta= 25°C)

Parameter	Symbol	Rating	Unit
Supply Voltage	V <sub>CC</sub>	4.5	V
Supply Current	I <sub>CC</sub>	4.0	A
Power Dissipation <sup>Note 1)</sup>	P <sub>D</sub>	25	W
Peak Supply Voltage <sup>Note 2)</sup>	V <sub>surge</sub>	60	V
Operating Ambient Temperature	T <sub>opr</sub>	- 25 ~ + 80	°C
Storage Temperature	T <sub>stg</sub>	- 55 ~ + 150	°C

Note 1) R<sub>θj-c</sub> = 2°C/W

Note 2) t = 0.2s

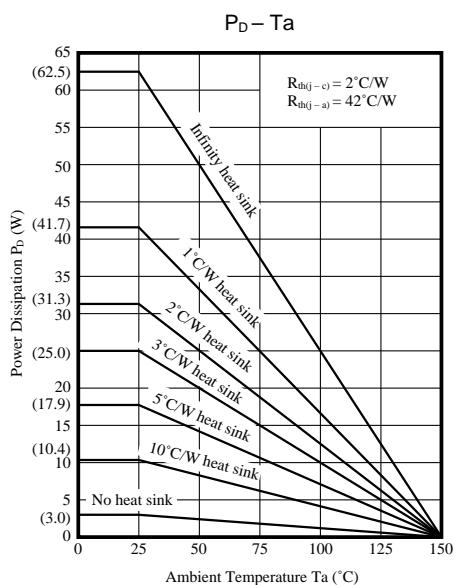
■ Recommended Operating Range (Ta = 25°C)

Parameter	Symbol	Range
Operating Supply Voltage Range	V <sub>CC</sub>	10.0V ~ 40.0V

■ Electrical Characteristics (V<sub>CC</sub>= 32V, f<sub>req.</sub>= 1kHz, Ta= 25±2°C)

Parameter	Symbol	Condition	min.	typ.	max.	Unit
Static Circuit Current	I <sub>CQ</sub>	V <sub>IN</sub> = 0mV, R <sub>L</sub> = 8Ω	—	100	200	mA
Output End Noise Voltage <sup>Note 1)</sup>	V <sub>NO</sub>	R <sub>g</sub> = 4.7kΩ, R <sub>L</sub> = 8Ω	—	0.12	0.4	mVrms
Voltage Gain	G <sub>V</sub>	V <sub>IN</sub> = 57mV, R <sub>L</sub> = 8Ω	32	34	36	dB
Total Harmonics Distortion	THD	V <sub>IN</sub> = 57mV, R <sub>L</sub> = 8Ω	—	0.05	0.40	%
Max. Output Power	P <sub>O</sub>	THD= 10%, R <sub>L</sub> = 8Ω	11	15	—	W
Ripple Rejection Ratio <sup>Note 1)</sup>	RR	R <sub>L</sub> = 8Ω, V <sub>r</sub> = 1Vrms f <sub>r</sub> = 120Hz, R <sub>g</sub> = 4.7kΩ	45	57	—	dB
Channel Balance	CB	V <sub>IN</sub> = 57mV, R <sub>L</sub> = 8Ω	-1	0	1	dB

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



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