

# AN7312

## Dual Recording / Playback Pre-Amplifier Circuit with ALC

### ■ Description

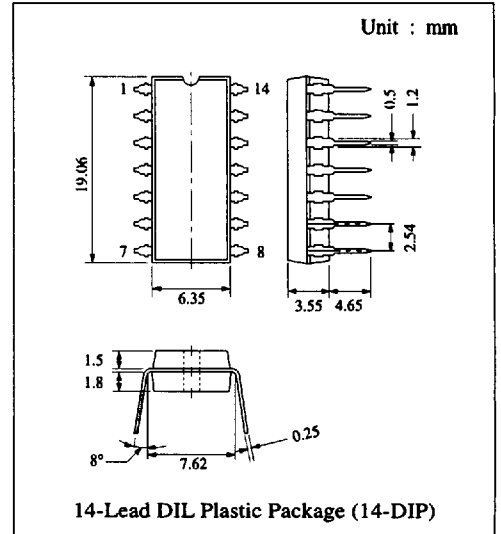
The AN7312 is a monolithic integrated circuit designed for dual pre-amplifier circuit with ALC for record/playback amplifier of cassette tape recorder.

### ■ Features

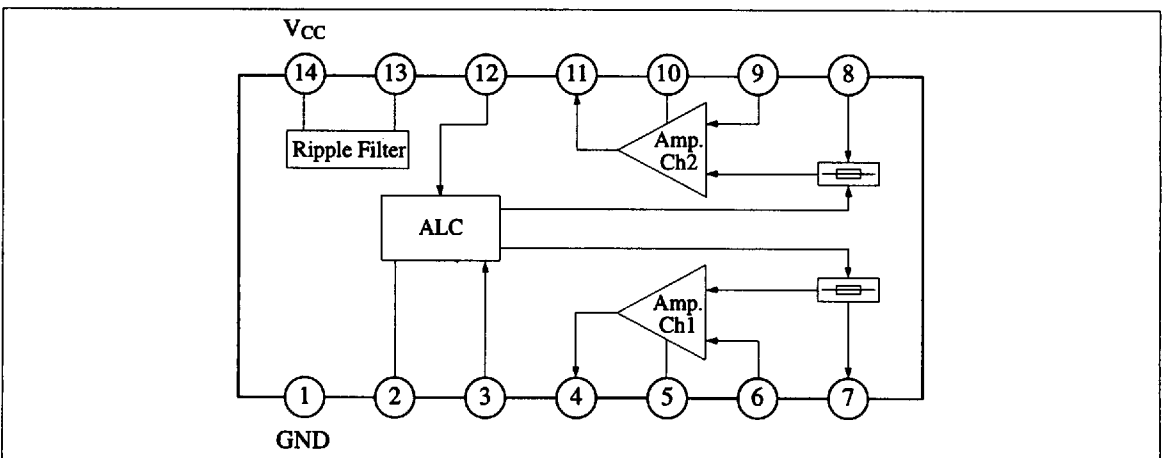
- High open loop gain
- Incorporates ALC detector circuit
- No input coupling condenser
- Low noise
- Low current consumption
- Wide ALC range
- Wide operating voltage range:  $V_{CC} = 5V \sim 12V$
- Low power ON shock noise

### ■ Pin

Pin No.	Pin Name	Pin No.	Pin Name
1	GND	8	Input Ch. 2
2	ALC Time Constant	9	N.F.B. Ch. 2
3	ALC Input Ch. 1	10	Phase Compensation Ch. 2
4	Output Ch. 1	11	Output Ch. 2
5	Phase Compensation Ch. 1	12	ALC Input Ch. 2
6	N.F.B. Ch. 1	13	Ripple Filter
7	Input Ch. 1	14	V <sub>CC</sub>



### ■ Block Diagram



## ■ Absolute Maximum Ratings (Ta=25°C)

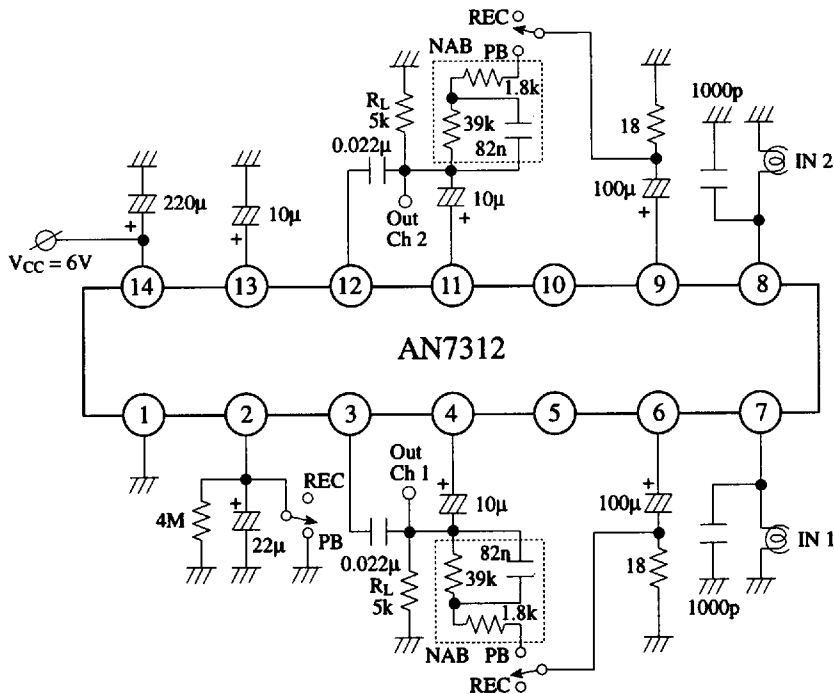
Item	Symbol	Rating	Unit
Supply Voltage	V <sub>CC</sub>	14	V
Supply Current	I <sub>CC</sub>	50	mA
Power Dissipation	P <sub>D</sub>	700	mW
Operating Ambient Temperature	Topr	-20 ~ +75	°C
Storage Temperature	Tstg	-55 ~ +150	°C

Operating Supply Voltage Range: V<sub>CC</sub> = 5.0V ~ 12.0V

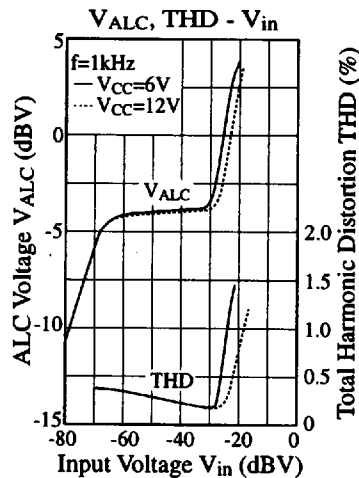
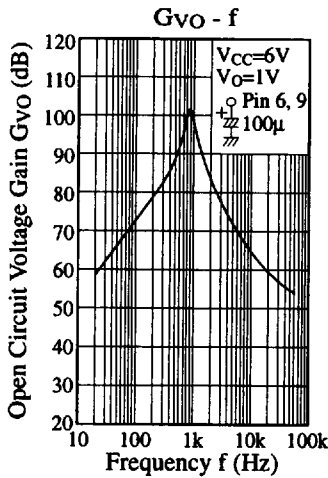
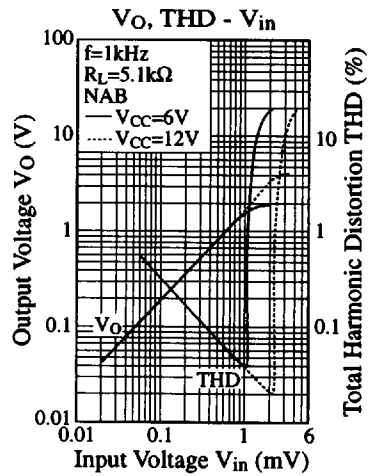
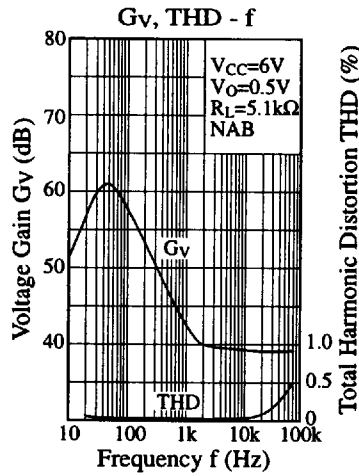
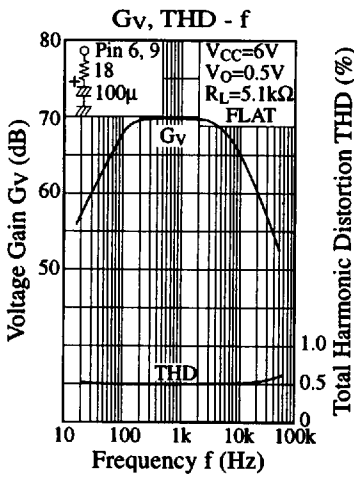
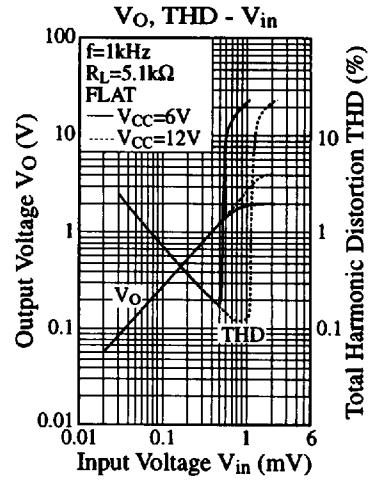
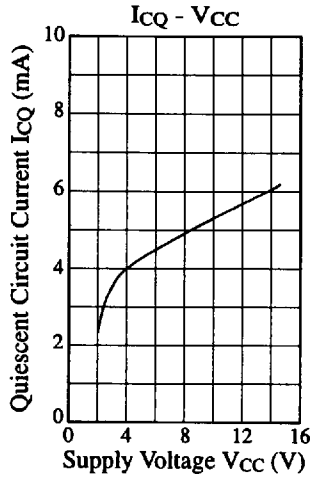
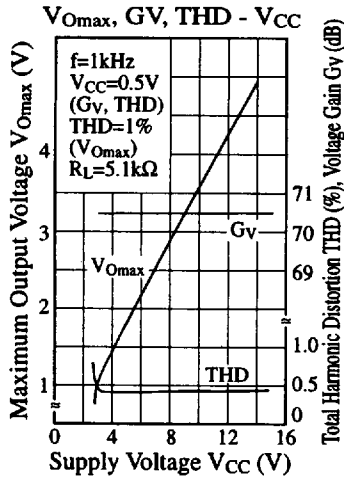
## ■ Electrical Characteristics (V<sub>CC</sub>=6V, f=1kHz, R<sub>L</sub>=5.1kΩ, Ta=25±2°C)

Item	Symbol	Condition	min.	typ.	max.	Unit
Quiescent Current	I <sub>CQ</sub>	V <sub>in</sub> = 0μV	2.5	4.5	8.0	mA
Closed-loop Voltage Gain	G <sub>VC</sub>	V <sub>O</sub> = 0.5V	66	69	72	dB
Total Harmonic Distortion	THD	V <sub>O</sub> = 0.5V		0.5	1.0	%
Output Voltage	V <sub>O</sub>	THD = 1%	1.2	1.6		V
Output Noise Voltage	V <sub>no</sub>	R <sub>g</sub> = 0Ω (Internal resistance 1.5kΩ) DIN/AUDIO		2.0	5.0	mV
ALC Voltage	V <sub>ALC</sub>	V <sub>in</sub> = 400μV	0.55	0.63	0.7	V
ALC Width	W <sub>ALC</sub>	Beginning 0dB to 3dB	35	47		dB
Channel Balance	CB	V <sub>O</sub> = 0.5V, CB = G <sub>V1</sub> - G <sub>V2</sub>	-1	0	+1	dB

## ■ Application Circuit



■ Characteristics Curve





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