

AN7316

Dual Recording and Playback Pre-Amplifier IC for Single/Double Cassette

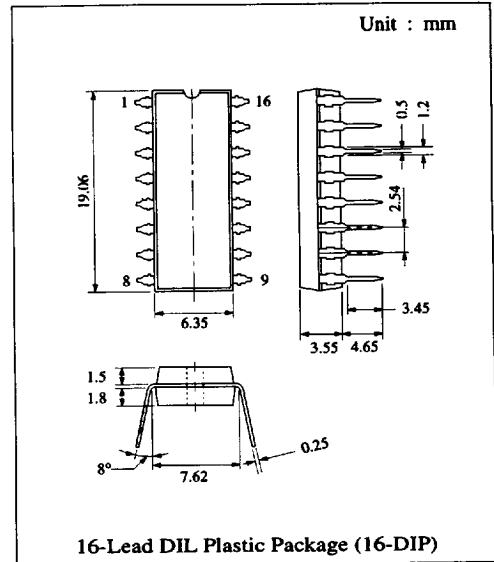
■ Description

The AN7316 is a monolithic integrated circuit for radio cassette recorder and built-in only fundamental function of Rec./playback pre-amp. with ALC function in 2-channel 16-lead DIL plastic package.

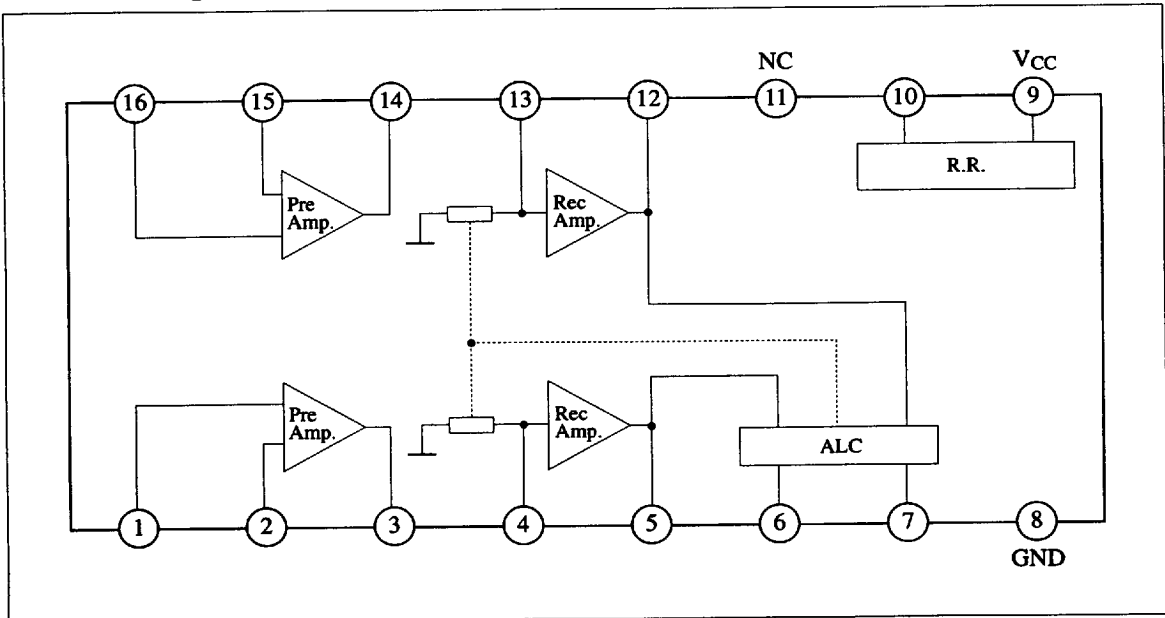
■ Features

- Built-in ALC LOW CUT function
- REC Amp. gain fixed and external parts reduced
- Wide operating supply voltage range:

$V_{CC} = 3.5V \sim 12V$



■ Block Diagram



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■ Absolute Maximum Ratings (Ta=25°C)

Item	Symbol	Rating	Unit
Supply Voltage	V _{CC}	14	V
Supply Current	I _{CC}	30	mA
Power Dissipation	P _D	1,000	mW
Operating Ambient Temperature	Topr	-20 ~ +75	°C
Storage Temperature	Tstg	-55 ~ +150	°C

Operating Supply Voltage Range: V_{CC} = 3.5V ~ 12.0V

■ Electrical Characteristics (V_{CC}=6V, f=1kHz, V_O=1V, Ta=25°C)

Item	Symbol	Condition	min.	typ.	max.	Unit
No Signal Current Consumption	I _{tot}		8.8	11.4	15.3	mA

Playback Amp

Open Circuit Gain	G _{VO-P}	R _{NF} short	75	84		dB
Closed Circuit Gain	G _{VC-P}	NAB	40	43	46	dB
Max. Output Voltage	V _{om-P}	THD = 3%	1.4	1.7		V
Total Harmonic Distortion	THD _P	400Hz ~ 80kHz filter		0.038	0.1	%
Noise Voltage Referred to Input	V _{ni-P}	R _{in} = 2.2kΩ, DIN/AUDIO		1.1	2	μV
Crosstalk between Channels	CT _P	R _{in} = 2.2kΩ, DIN/AUDIO	64	71.5		dB
Channel Balance	CB _P		-1.5	0	1.5	dB

Record Amp.

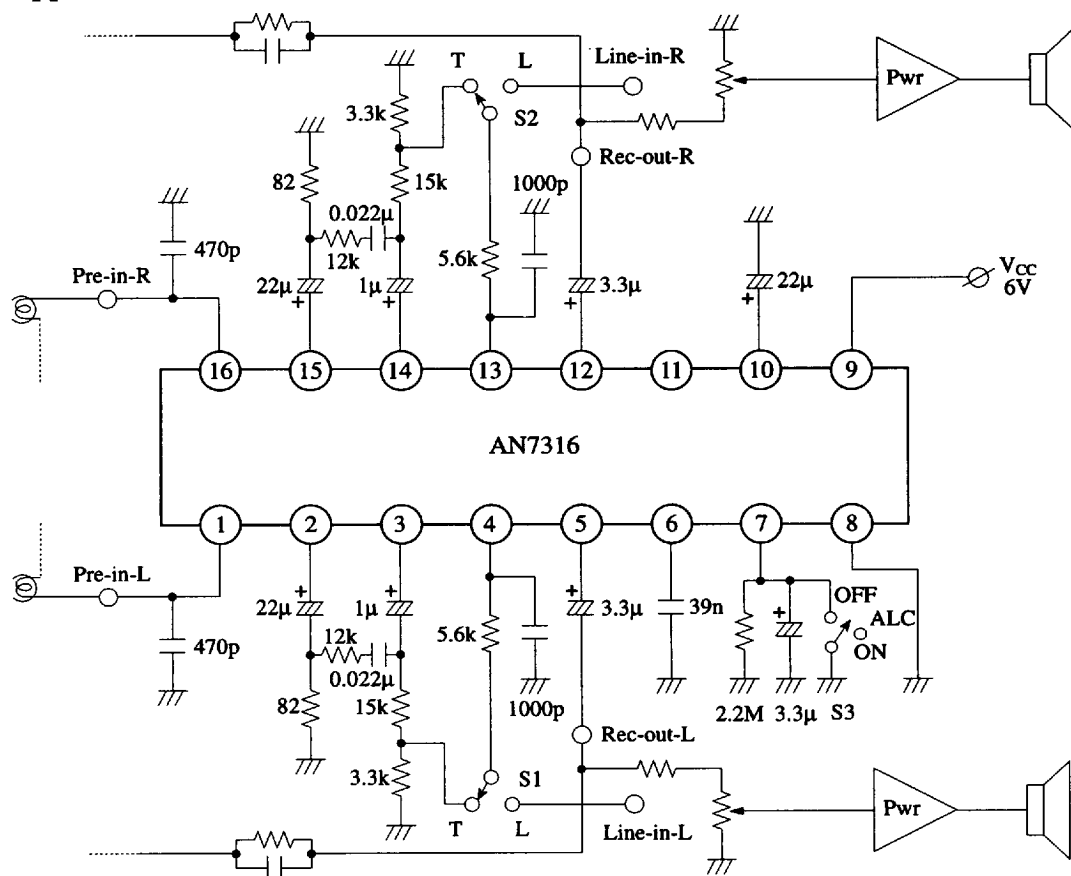
Closed Circuit Gain	G _{V-R}		37	39	42.5	dB
Max. Output Voltage	V _{om-R}	THD = 3%	1	1.9		V
Total Harmonic Distortion	THD _R	400Hz ~ 80kHz filter		0.1	0.17	%
Output Noise Voltage	V _{no-R}	R _{in} = 3Ω, DIN/AUDIO		260	550	μV
Crosstalk between Channels	CT _R	R _{in} = 3Ω, DIN/AUDIO	50	57		dB
Channel Balance	CB _R		-1.5	0	1.5	dB

ALC

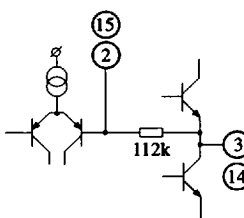
ALC Start Voltage	V _S	R _{in} = 5.6kΩ, Dual ch. input	0.75	0.9	1.37	V
ALC Effective Width	W _{ALC}	R _{in} = 5.6kΩ, Dual ch. input	35	46		dB
ALC Channel Balance	CB _a	R _{in} = 5.6kΩ, Dual ch. input	-2	0.1	2	dB

■ Application note, please refer to AN7317

■ Application Circuit

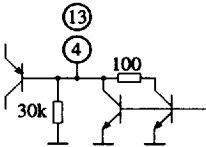
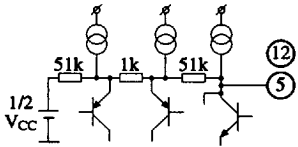
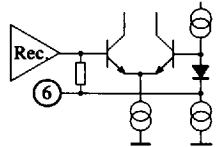
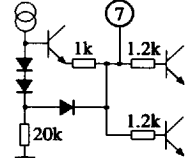
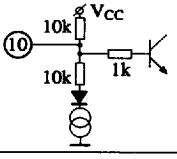


■ Pin Descriptions

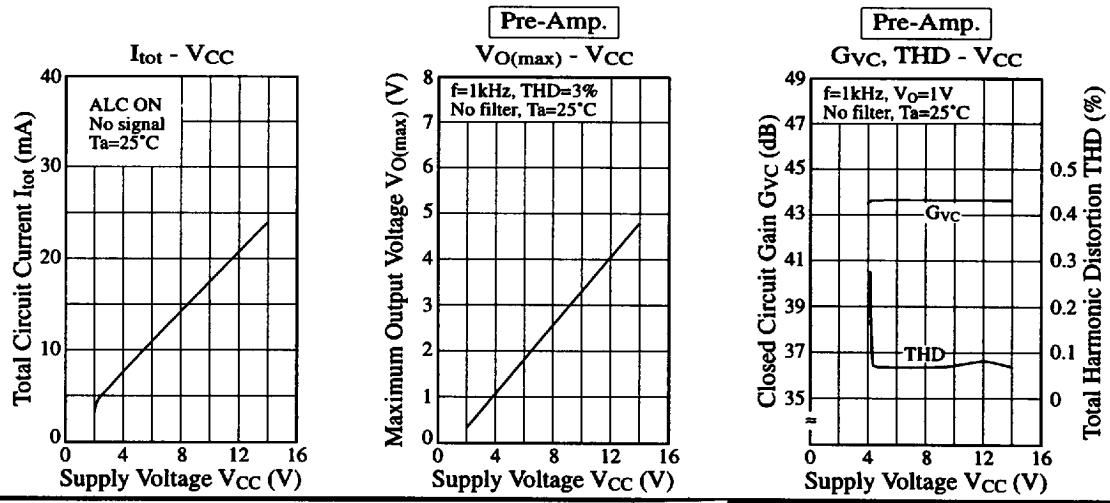
Pin No	Pin Name	Typ. Waveform	Equivalent Circuit	Description
1	CH1 Playback Amp. Input			Playback amp. input.
16	CH2 Playback Amp. Input			
2	CH1 Playback Amp. Negative Feedback	DC 0.7V		Playback amp. feedback.
15	CH2 Playback Amp. Negative Feedback			
3	CH1 Playback Amp. Output			Playback amp. output.
14	CH2 Playback Amp. Output			

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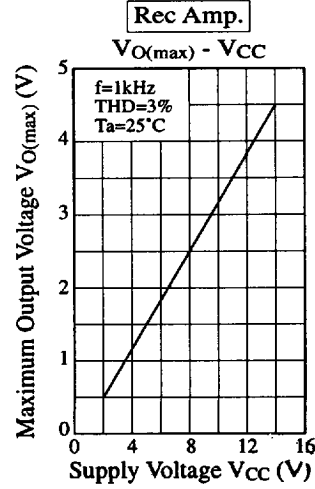
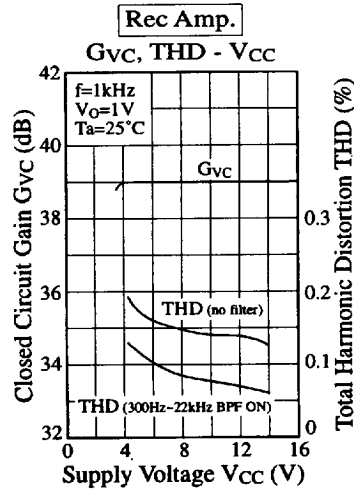
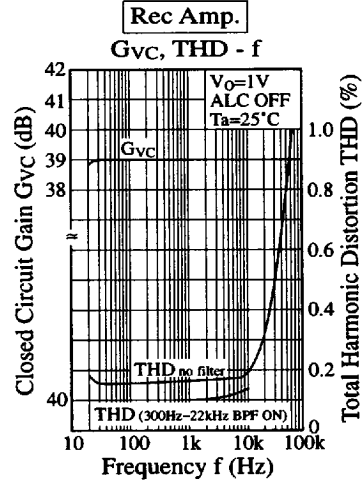
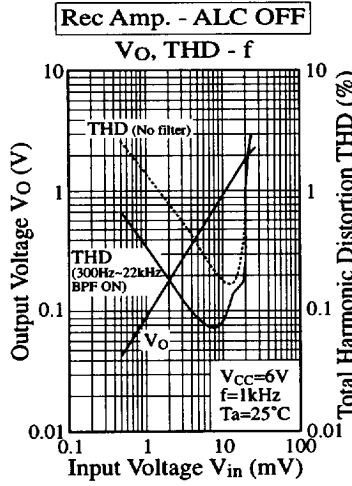
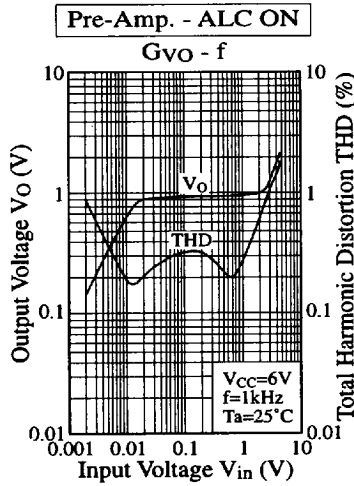
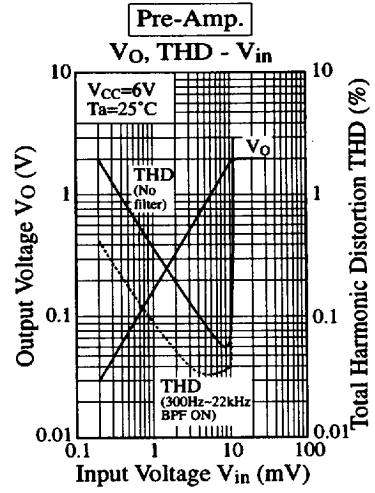
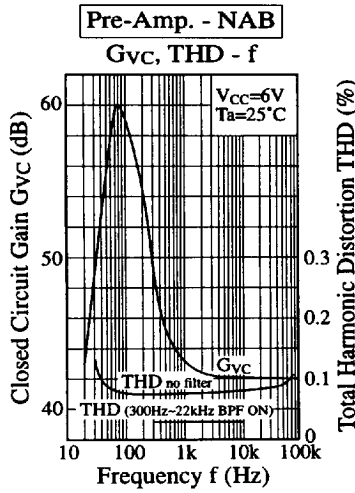
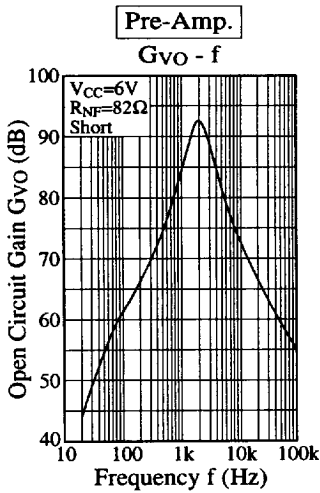
■ Pin Descriptions (Continue)

Pin No	Pin Name	Typ. Waveform	Equivalent Circuit	Description
4	CH1 Rec. Amp. Input	 -39dBV		Rec. amp. input.
13	CH2 Rec. Amp. Input			
5	CH1 Rec. Amp. Output	 0dBV		Rec. amp. output.
12	CH2 Rec. Amp. Output			
6	Low CUT	DC $\approx$ 2.5V		AGC comparator circuit reference voltage.
7	ALC Time Constant	Follow input signal		Low-pass filter pin.
8	GND			Main circuit GND.
9	V _{CC}	DC 6V		Main circuit +V _{CC} .
10	V _{REF}	DC 3.7V		
11	NC			

■ Characteristics Curve



■ Characteristics Curve (Continue)



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