

# AN7316

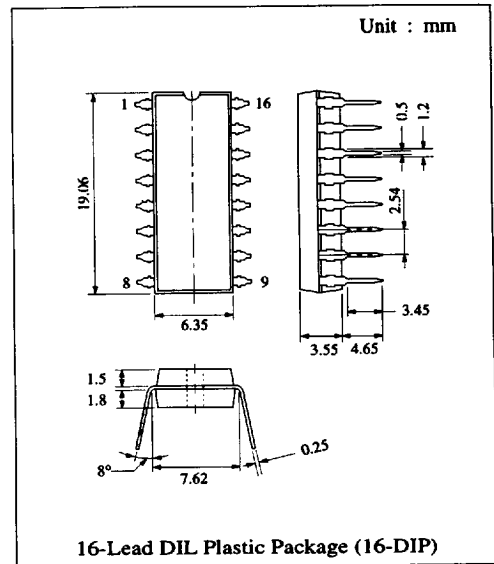
## Dual Recording and Playback Pre-Amplifier IC for Single/Double Cassette

### ■ Description

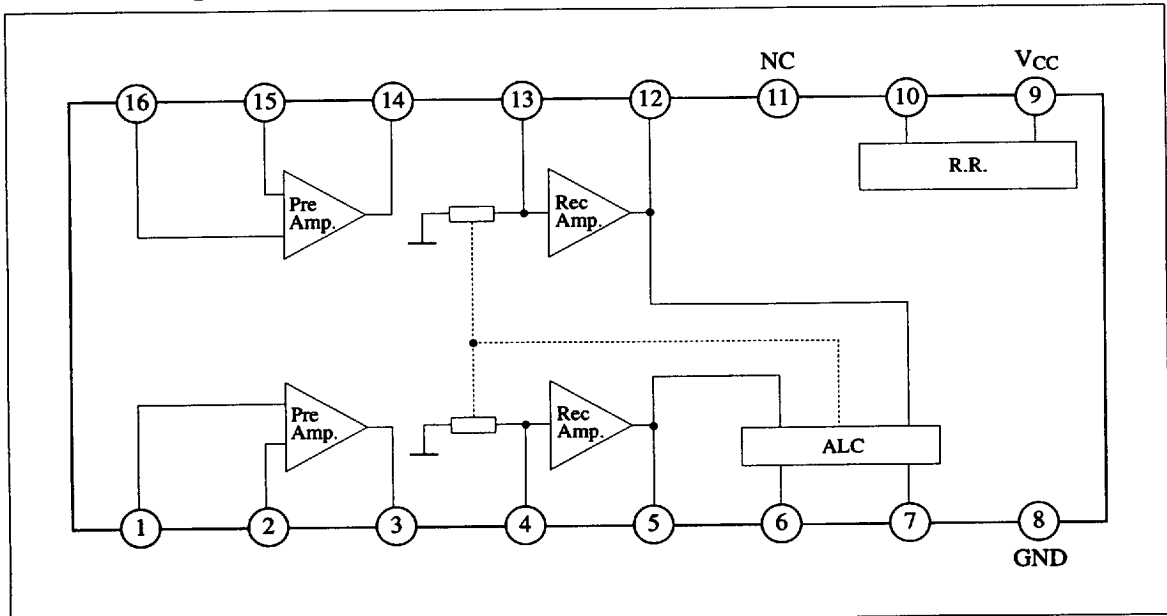
The AN7316 is a monolithic integrated circuit for radio cassette recorder and built-in only fundamental function of Rec./playback pre-amp. with ALC function in 2-channel 16-lead DIL plastic package.

### ■ Features

- Built-in ALC LOW CUT function
- REC Amp. gain fixed and external parts reduced
- Wide operating supply voltage range:  
V<sub>CC</sub> = 3.5V ~ 12V



### ■ Block Diagram



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

Item	Symbol	Rating	Unit
Supply Voltage	V <sub>CC</sub>	14	V
Supply Current	I <sub>CC</sub>	30	mA
Power Dissipation	P <sub>D</sub>	1,000	mW
Operating Ambient Temperature	T <sub>opr</sub>	-20 ~ +75	°C
Storage Temperature	T <sub>stg</sub>	-55 ~ +150	°C

Operating Supply Voltage Range: V<sub>CC</sub> = 3.5V ~ 12.0V

### ■ Electrical Characteristics (V<sub>CC</sub>=6V, f=1kHz, V<sub>O</sub>=1V, Ta=25°C)

Item	Symbol	Condition	min.	typ.	max.	Unit
No Signal Current Consumption	I <sub>tot</sub>		8.8	11.4	15.3	mA

#### Playback Amp

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

#### Record Amp.

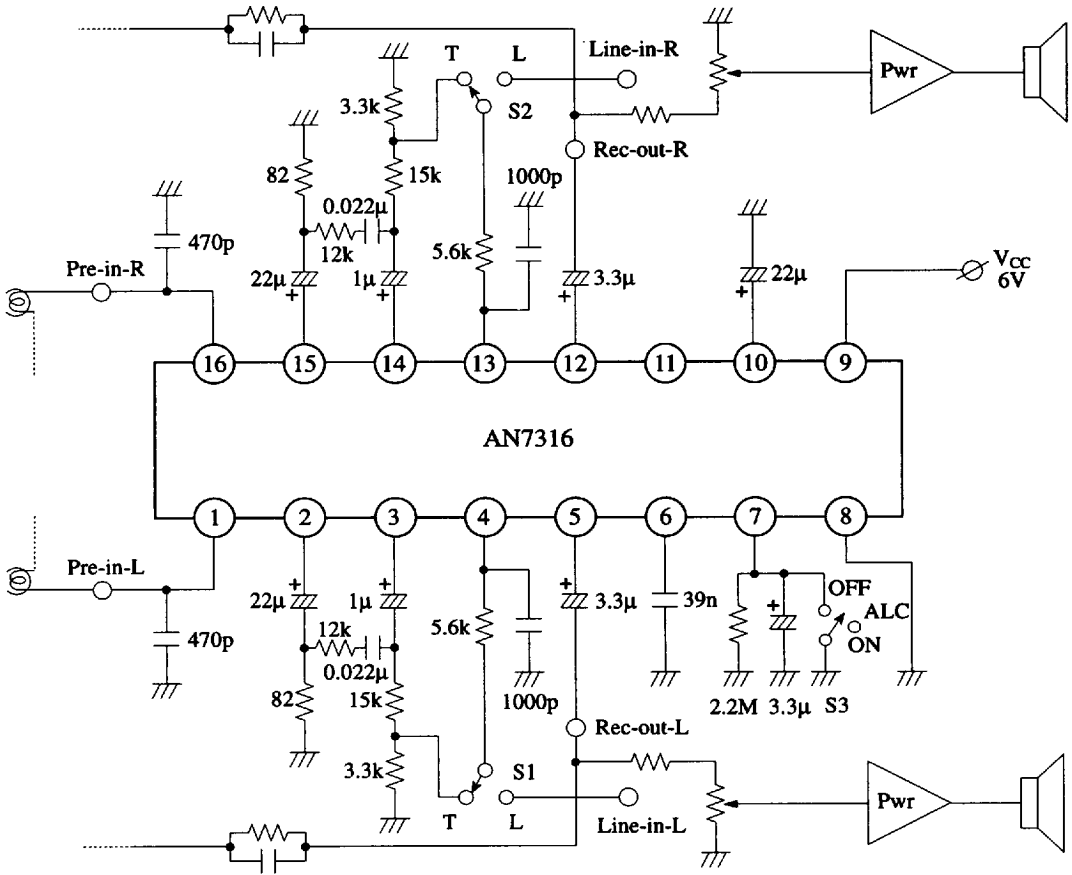
Closed Circuit Gain	G <sub>V-R</sub>		37	39	42.5	dB
Max. Output Voltage	V <sub>om-R</sub>	THD = 3%	1	1.9		V
Total Harmonic Distortion	THD <sub>R</sub>	400Hz ~ 80kHz filter		0.1	0.17	%
Output Noise Voltage	V <sub>no-R</sub>	R <sub>in</sub> = 3Ω, DIN/AUDIO		260	550	μV
Crosstalk between Channels	CT <sub>R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

#### ALC

ALC Start Voltage	V <sub>S</sub>	R <sub>in</sub> = 5.6kΩ, Dual ch. input	0.75	0.9	1.37	V
ALC Effective Width	W <sub>ALC</sub>	R <sub>in</sub> = 5.6kΩ, Dual ch. input	35	46		dB
ALC Channel Balance	CB <sub>a</sub>	R <sub>in</sub> = 5.6kΩ, Dual ch. input	-2	0.1	2	dB

■ Application note, please refer to AN7317

■ Application Circuit

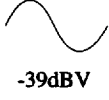
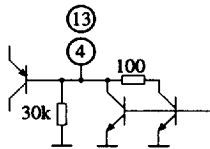
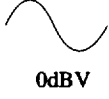
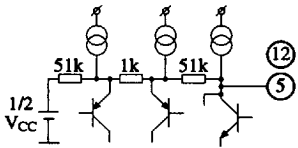
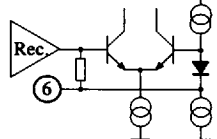
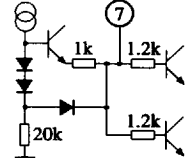
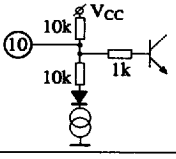


■ Pin Descriptions

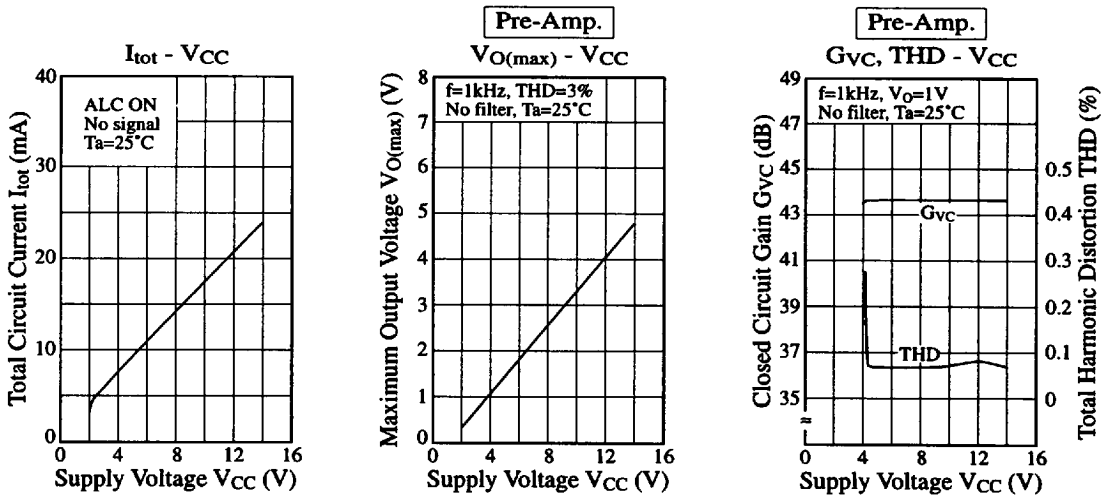
Pin No	Pin Name	Typ. Waveform	Equivalent Circuit	Description
1	CH1 Playback Amp. Input	 -43.6dBV		Playback amp. input.
16	CH2 Playback Amp. Input			Playback amp. feedback.
2	CH1 Playback Amp. Negative Feedback	 DC 0.7V		Playback amp. feedback.
15	CH2 Playback Amp. Negative Feedback			Playback amp. output.
3	CH1 Playback Amp. Output	 0dBV		Playback amp. output.
14	CH2 Playback Amp. Output			

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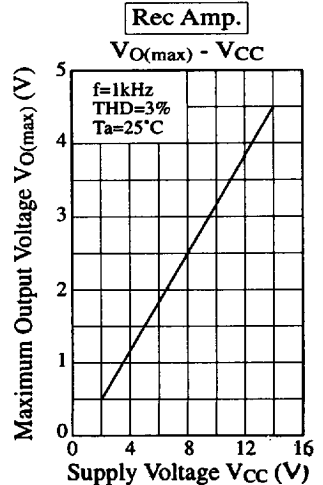
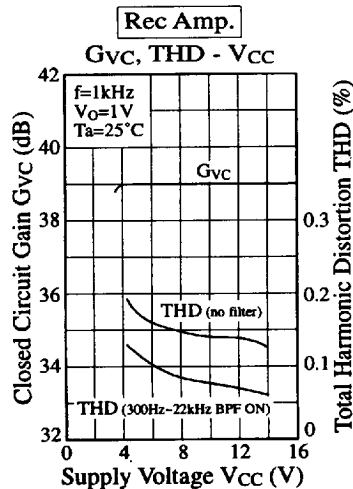
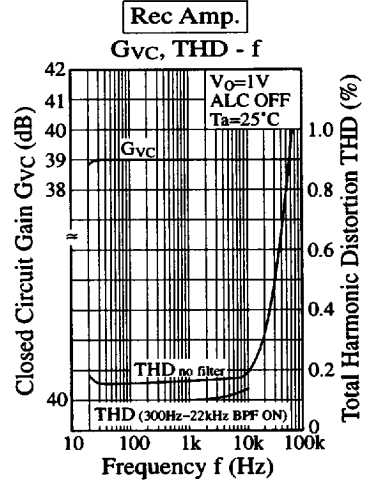
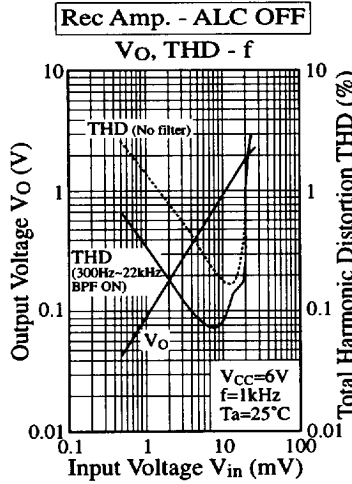
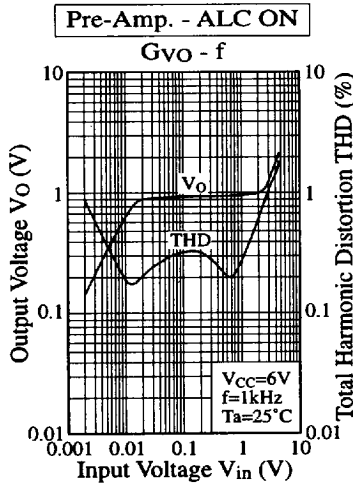
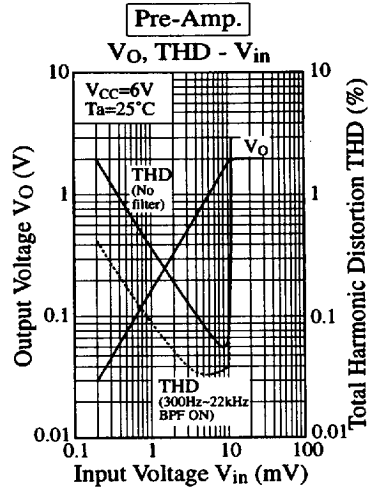
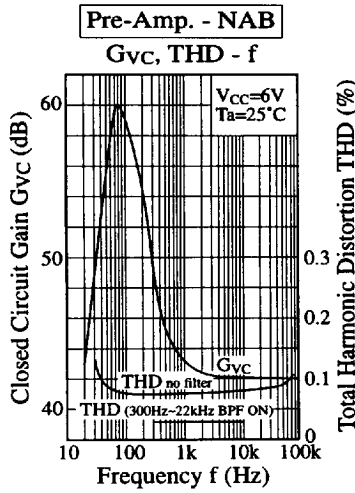
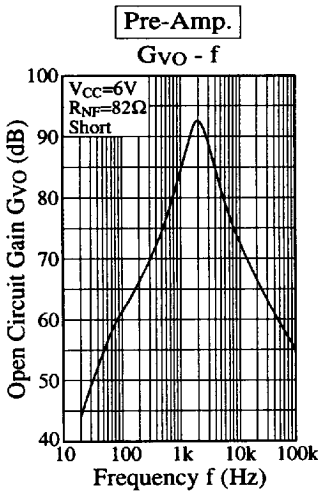
■ Pin Descriptions (Continue)

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 ≈ 2.5V		AGC comparator circuit reference voltage.
7	ALC Time Constant	Follow input signal		Low-pass filter pin.
8	GND			Main circuit GND.
9	Vcc	DC 6V		Main circuit +Vcc.
10	VREF	DC 3.7V		
11	NC			

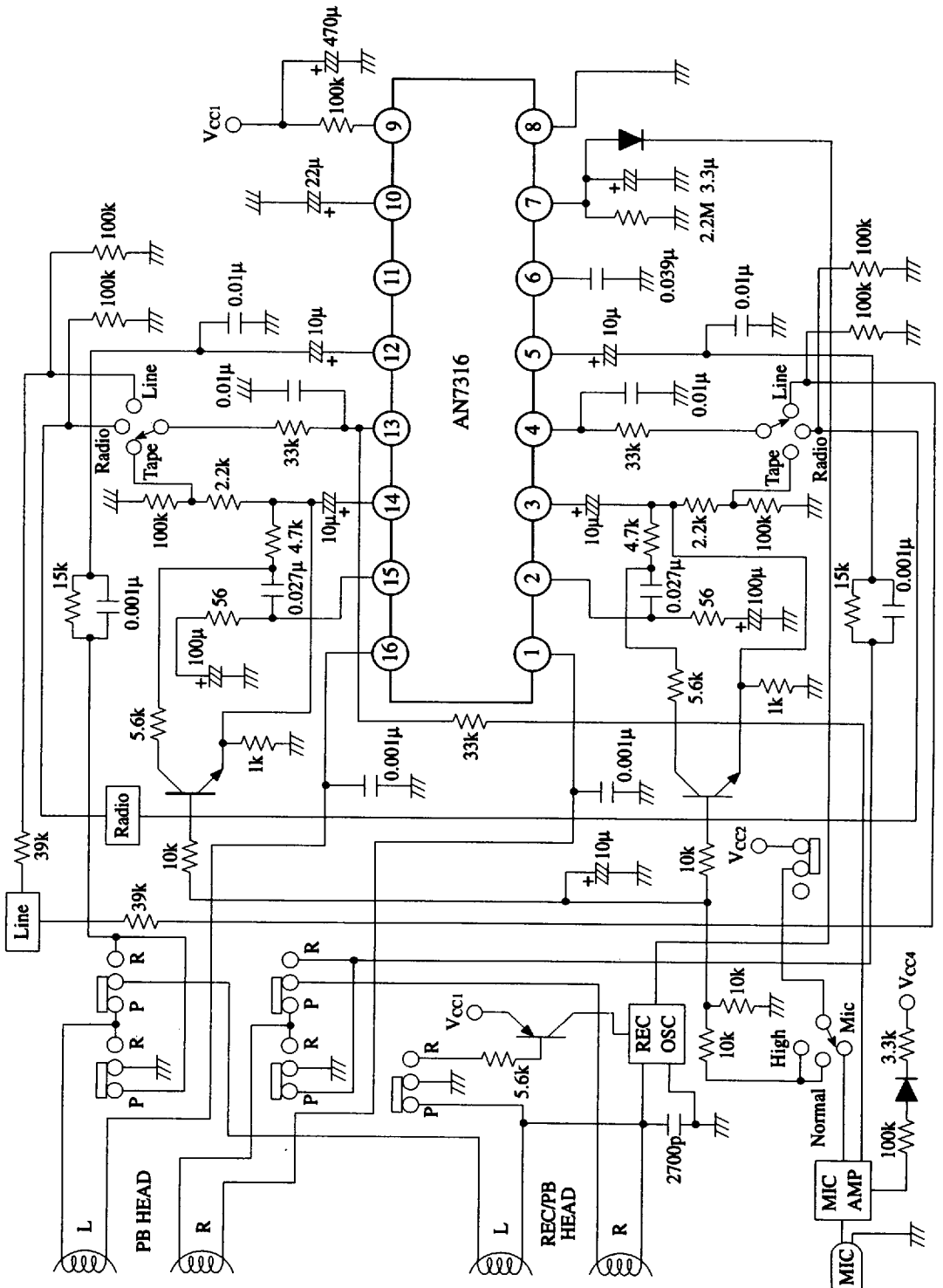
■ Characteristics Curve



■ Characteristics Curve (Continue)



■ Double Deck Application Circuit



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