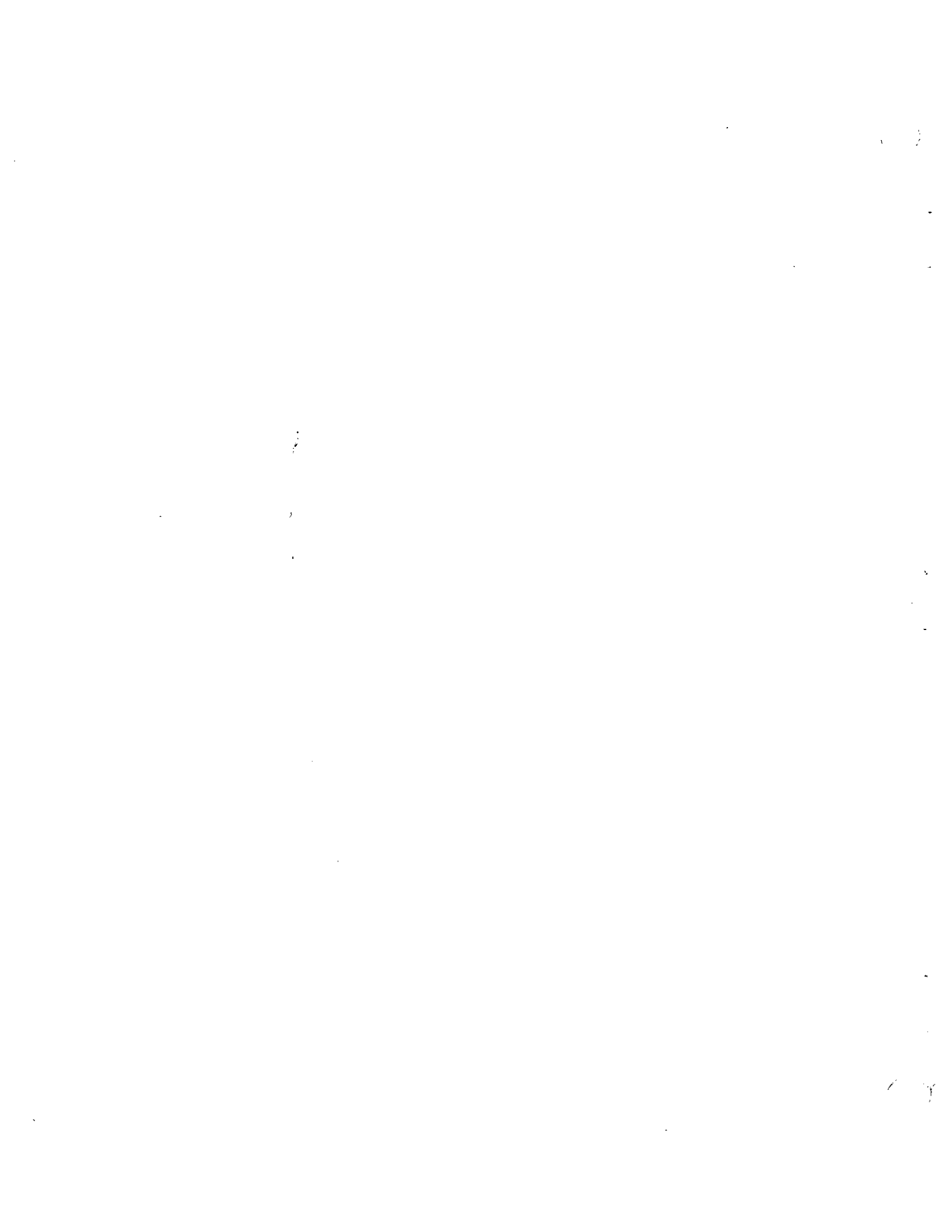


audio~metrics®

preamplifier

from
Radio Systems Design Inc.
1400 Mill Creek Road, Gladwyne, PA 19035
(215) 649-3530



INSTALLATION AND OPERATION

Your "Audio-Metrics" turntable pre-amp can be mounted in any position. While pre-amps are generally installed along side the turntable, keep in mind that close proximity to a conventional turntable motor can cause some hum pick-up. Direct drive motors, however, are not hum sources.

The pre-amp input loading is 180 P.F. Because correct cartridge loading is important, you should check your individual cartridge specifications for recommended loading. Conventional shielded tone arm cables present a load of about 27 PF/FT. If you must reduce your cartridge load, consider shorter cable runs or low capacity cable. Do not attempt to adjust loading by removing the pre-amp input capacitor (C2). This will defeat RF rejection.

The high audio quality achieved in "Audio-Metrics" pre-amps dictates the omission of output transformers. For this reason, careful consideration should be given to grounding schemes that may have been designed for older, transformer type pre-amps. Contact Radio Systems with any special problems or questions.

Warranty

Radio Systems warrants for one year from date of purchase, parts and labor on any unit returned to us for repair. Please ship the unit prepaid with a note detailing the malfunction and reason for return. Repair and return of the unit will be made promptly. Within the warranty period, there is no charge for this service on units which show no sign of misuse or unauthorized alterations.

CIRCUIT DESCRIPTION

Power Supply:

Two full wave rectifiers and two three terminal regulators provide the ± 18 volts that's used throughout. This type of supply assures the clean DC that's imperative for low noise and distortion.

Input Stages:

A monolithic matched transistor pair and high speed IC combine to give excellent performance in the front end. High open loop gain and high speed components provide very low THD, TIM and SID. Noise is also maintained to near theoretical minimums.

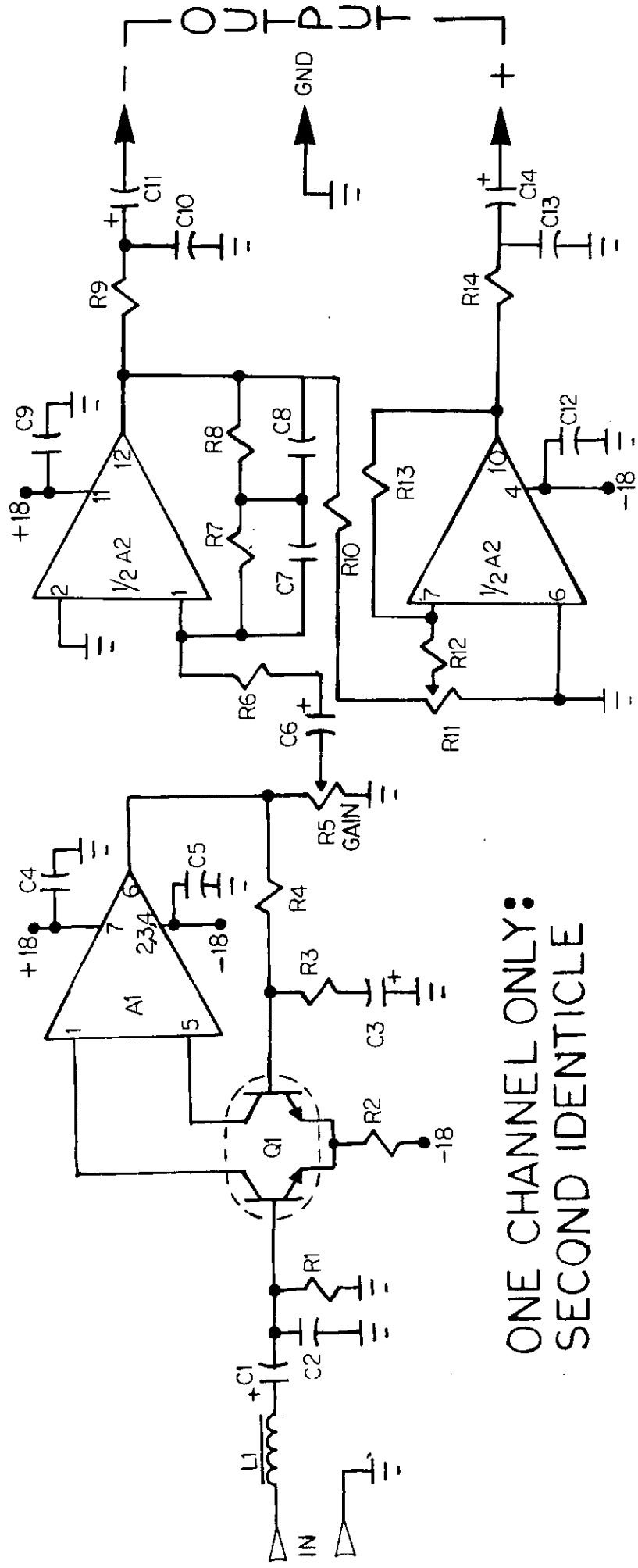
Since no equalization is used in the input stage, cartridge loading is constant throughout the audio spectrum. Level control follows the input stage and therefore stage gains are held constant.

An effective input filter inductor gives good RF rejection even in the AM band without resorting to large input capacitance which adversely affect cartridge loading.

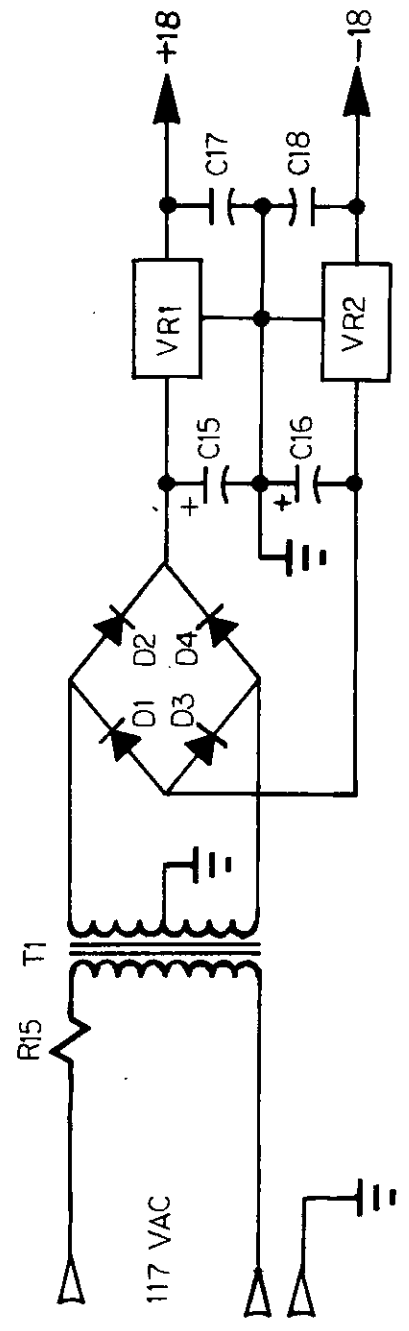
Output Stage:

The output stage consists of a single IC package containing two OP amps. One OP amp is used as an inverter equalizer providing the RIAA response, the second OP amp inverts the output of the first. The output is taken between the two for a balanced system, or either can drive unbalanced loads. This type of circuit gives a 6dB headroom increase in balanced systems. Each OP amp can drive 600 ohms to full output up to 200kHz.

In keeping with the overall audio integrity of this unit, no output transformers were used.



ONE CHANNEL ONLY:
SECOND IDENTICAL

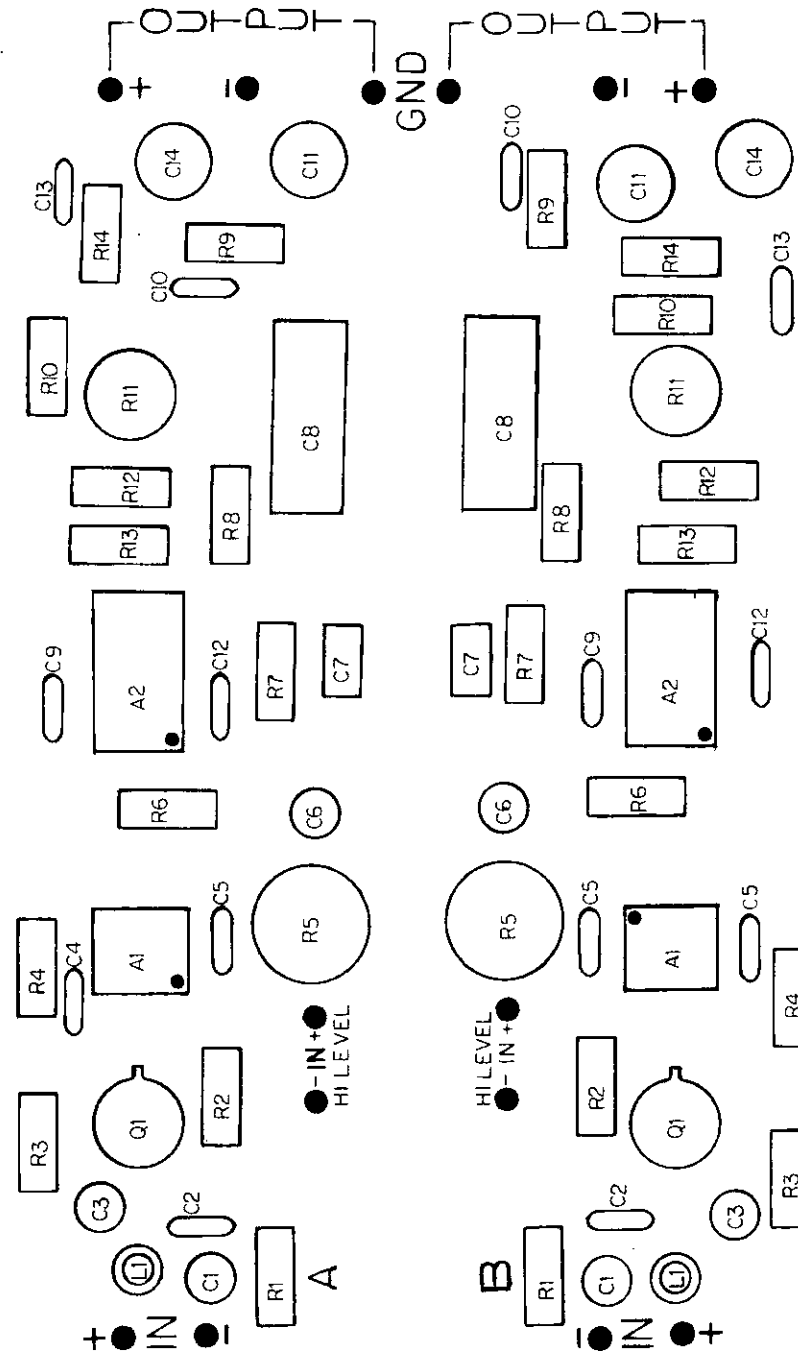
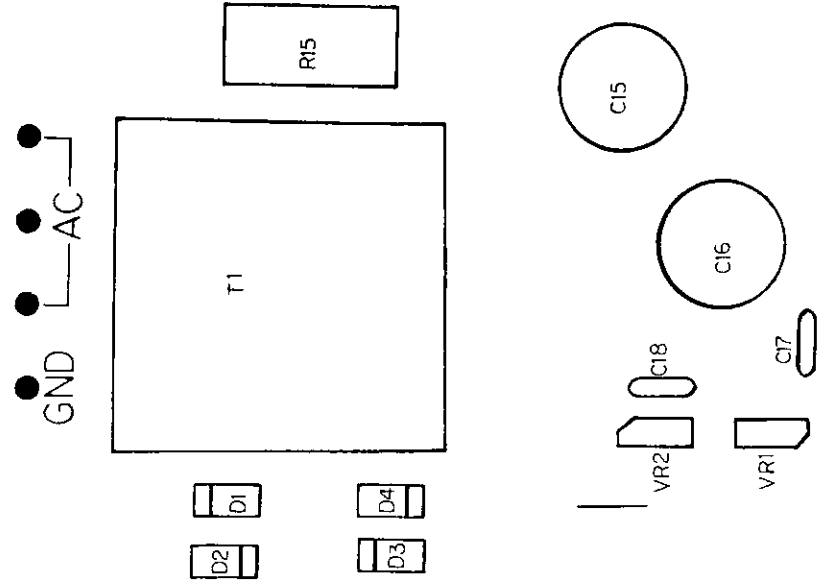


POWER SUPPLY

For units with
S/m's - 8010
thru 8110

PRE-AMP PARTS LIST

R1	47K	2%	MF	D1	IN4001
R2	47K	2%	MF	D2	IN4001
R3	160	2%	MF	D3	IN4001
R4	4.7K	2%	MF	D4	IN4001
R5	10K	Pot	Cermet	Q1	LM394CH
R6	5.6K	2%	MF	A1	LM318N
R7	51K	2%	MF	A2	NE5533N
R8	750K	2%	MF	VR1	LM341P-18
R9	100	5%	½w	VR2	LM320MLP-18
R10	1K	5%	½w	T1	ST-4-48
R11	10K	Pot			
R12	4.7K	5%	½w		
R13	10K	5%	½w		
R14	100	5%	½w		
R15	470	5%	2w		
C1	33mf.	Al.			
C2	180pf.	DISC.			
C3	33mf.	5% TANT.			
C4	.1mf.	DISC			
C5	.1mf.	DISC			
C6	33mf.	Al.			
C7	1500 pf.	2.5% Polystyrene			
C8	5600pf.	2.5% Polystyrene			
C9	.1mf.	DISC			
C10	.001 mf.	DISC			
C11	100 mf.	Al.			
C12	.1mf.	DISC			
C13	.001mf.	DISC			
C14	100mf.	Al.			
C15	470mf.	Al. 35v			
C16	470mf.	Al. 35v			
C17	.1mf.	DISC			
C18	.1mf.	DISC			



**AUDIO-METRIC PREAMP
SPECIFICATIONS**

INPUT:	—	47k Ohms Parallel 180pf.
MAXIMUM INPUT	—	350mv Any Frequency
MAXIMUM GAIN	—	5mv at 1kHz = + 5dBm Single Ended Out
	—	= +10dBm Balanced Out
MAXIMUM OUTPUT	—	+22 dBm Single Ended Into 600 Ohms
	—	+27 dBm Balanced Into 600 Ohms
OUTPUT IMPEDANCE	—	100 Ohms Single Ended
	—	200 Ohms Balanced
FREQUENCY RESPONSE	—	$\pm .25$ dB RIAA (using new curve, specifying low end roll off)
THD	—	.03% +18dBm Into 600 Ohms
IM DISTORTION	—	.04% +18dBm Into 600 Ohms SMPTE
SIGNAL TO NOISE	—	80dB Relative 5mv at 1kHz
		Input Terminated 620 Ohms
		Measured: Unweighted - Broadband
	—	96dB Relative 12mv at 1kHz
		Input Shorted
		Measured: A Weighted
CHANNEL SEPARATION	—	90dB

