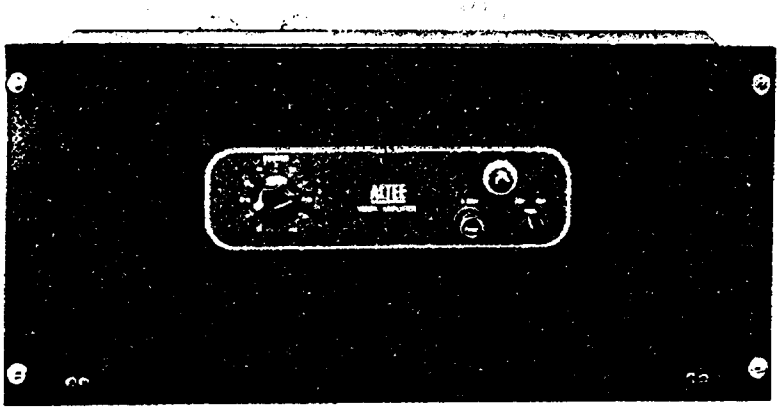
ALTEC LANSING

1568A AMPLIFIER

OPERATING INSTRUCTIONS



SPECIFICATIONS

Type:	Power Amplifier
Gain:	65 dB
Input Sensitivity:	0.9 volt
Power Output:	40 watts at less than 2% THD, 40 to 20,000 Hz
Frequency Response:	±1 dB, 5 to 30,000 Hz; ±4 dB, 1 to 100,000 Hz
Input Impedance:	70,000 ohm potentiometer
Source Impedance:	150 or 600 ohms with 15095 Plug-in Transformer
Load Impedance:	4 (12.6V), 8 (18V), 16 (25V), 124 (70V) ohms ungrounded
Output Impedance:	Less than 15% of nominal load impedance
Noise Level:	80 dB below rated output
Controls:	Volume control, continuously variable, composition
Power Supply:	117V ac, 50/60 Hz, 125 watts
External Power Available:	117 volt ac receptacle on chassis
Tubes:	2 - 6CG7, 2-6CA7/EL34, 1 - 5U4GB
Dimensions:	8-3/4" H x 19" W x 7-3/4" D
Color:	Dark Green
Weight:	22 pounds
Special Feature:	Two stage high-pass-filter for protection of horn loaded drivers
Accessory:	15095 Plug-in Transformer

Specifications and components subject to change without notice. Overall performance will be maintained or improved.

ALTEC LANSING

1515 S. Manchester Ave., Anaheim, Calif. 92803

42-02-012686-07 Price $0.14

DESCRIPTION

The 1568A Amplifier is a rack mounted, ac operated power amplifier intended for use in sound reinforcing, paging, music distribution, or any application requiring low distortion, wide frequency range, complete stability with any type of load, reliability of operation, ease of servicing or low cost.

At 40 watts distortion is less than 2% at any frequency from 40 to 20,000 Hz. The frequency response is within 4 dB of mid-range value from 1 Hz to 100 kHz. The feedback circuit is designed for stability under conditions of varying line voltage, varying tube characteristics, and all types of loads including long unloaded speaker lines having considerable capacitance. The tubes are conservatively operated under CCS (continuous commercial service) ratings of their manufacturer, and the amplifier has been shown to withstand "hot switching" and other punishment which might be encountered in the hands of untrained operators.

The amplifier occupies five units of rack space (8-3/4") and has a hinged front panel on which are mounted the power switch, fuse, pilot light and a continuously variable gain control. All circuitry is completely accessible for servicing when the front panel is open. The amplifier is equipped with a 3-wire power cord terminating in a 3-pin cap. Input and output terminals are provided in the form of barrier-type terminal blocks mounted on the outer surface of the chassis.

INSTALLATION

INPUT CONNECTIONS

The 1568A Amplifier is equipped with two pairs of input connections. Terminals 1 and 2, connecting directly to the input potentiometer, are provided for unbalanced high impedance sources, and to bridge unbalanced low impedance lines having a signal voltage of 0.9 volt or higher.

Terminals 3 and 4 connect to a standard octal socket which accommodates the accessory plug-in transformer. With the 15095 Transformer, balanced or unbalanced lines of 150 or 600 ohms up to a level of +15 dBm may be connected to input 3-4. The octal socket is normally connected for 500/600 ohm operation; 150 ohms impedance may be obtained by strapping the terminals in accordance with the diagram shown on the schematic.

OUTPUT CONNECTIONS

Outputs accommodate nominal loads of 4, 8, 16 and 124 ohms, the corresponding full-drive output voltages being 12.6, 18, 25 and 70 volts.

Speaker Matching

Use the output tap which most nearly equals the total speaker impedance. If the load impedance falls between two output terminal values, favor the terminal of lower impedance.

70 Volt Line

The 70 volt distribution system permits connection to a large number of speakers, each to operate at its own power level as required, without the necessity for computing impedances. In this system each speaker is equipped with a transformer containing a number of taps rated in terms of power, and the tap is selected which gives the power desired for that speaker. The total of the power settings for all speakers should be equal to or less than the amplifier system power rating. The 1568A Amplifier is equipped with outputs to drive both a 70 volt line and a 25 volt line.

Protection of Horn Loaded Drivers

Driver loudspeakers coupled to horns are used in paging or voice reinforcing systems where excellent intelligibility is required in the presence of high noise levels, effects of wind, and other disturbances. When a loudspeaker system dividing network is not available the diaphragm of the driver loudspeaker may be protected from low frequency power by the use of the R-C low frequency cut-off filter in V1 grid circuit (see schematic). As shipped, capacitors C1 and C2 are strapped out. By cutting one or both of these straps attenuation is introduced as shown in the table, depending upon the impedance of the source.

CONTROLS

The only controls on this amplifier intended for normal operation are the power switch and the gain control. Potentiometer P2, which establishes the bias voltage for the output tubes, is set at the factory and will probably not require readjustment over a long period of operation. If, due to aging of the rectifier, the bias voltage should drop below the value indicated on the schematic, it will be desirable to reset P2. Measurement should be made with an accurate voltmeter, at a line voltage of 117 volts, and with no signal applied.

Effect of High Pass Filter

Source Impedance	Strapping	250 Hz	500 Hz	1000 Hz	2000 Hz
100,000 ohms	One strap cut	-6.5 dB	-3 dB	-1 dB	-0.2 dB
	Both straps cut	-16 dB	-8 dB	-3.5 dB	-1.2 dB
Low	One strap cut	-13 dB	-8 dB	3.5 dB	-1.2 dB
	Both straps cut	-22 dB	-12 dB	-4.2 dB	-1.5 dB

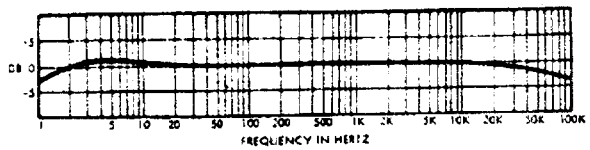


Figure 1. 1568A Amplifier, Typical Frequency Response

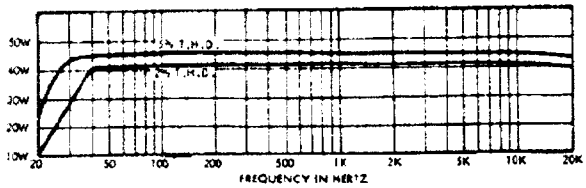


Figure 2. 1568A Amplifier, Frequency vs Power at Selected THD

PARTS LIST

Reference Designator	Ordering Number	Name and Description
C1	15-02-100047-01	Cap., 0.002 µF ±10%, 500V
C2	15-02-100042-01	Cap., 0.001 µF ±10%, 500V
C3	15-01-100229-01	Cap., 50 µF, 6V
C4	15-02-100018-01	Cap., 47 pF ±10%, 500V
C6,7	15-06-100133-01	Cap., 0.22 µF, 400V
C8	15-01-100240-01	Cap., 50 µF, 50V
C9A,B,10A,B	15-01-100222-01	Cap., 40-40 µF, 500V
C11	15-01-100125-01	Cap., 0.5 µF, 400V
F1	51-04-100468-01	Fuse 3A 250V 3AG
P1	47-06-012435-02	Pot., 200K
P2	47-05-100812-01	Pot., 5K
PL1	39-01-100535-01	Lamp GE 44 Mazda
R1,8,12,13	47-01-102379-01	Res., 100K Ω ±10%, 1/2W
R2	47-04-100503-01	Res., 47.5 Ω ±1%, 1/2W
R3	47-01-102358-01	Res., 1.8K Ω ±10%, 1/2W
R4	47-01-100666-01	Res., 100K Ω ±10%, 1W

Reference Designator	Ordering Number	Name and Description
R5,6	47-01-102377-01	Res., 68K Ω ±10%, 1/2W
R7	47-01-100746-01	Res., 1M Ω ±10%, 1/2W
R9	47-01-100660-01	Res., 18K Ω ±10%, 1W
R10,11,18	47-01-100663-01	Res., 47K Ω ±10%, 1W
R14,15	47-01-102342-01	Res., 100 Ω ±10%, 1/2W
R16	47-01-100719-01	Res., 600 Ω 5W
R17	47-04-100550-01	Res., 1.5K Ω ±1%, 1/2W
R19	47-01-100656-01	Res., 4.7K Ω ±10%, 1W
R20	47-01-102346-01	Res., 220 Ω ±10%, 1/2W
S1	51-02-012536-01	Switch
SR1	48-02-100886-01	Rectifier, 1N1491.40A 500V
T1	56-07-016432-13	Transformer
T2	56-08-006288-18	Transformer
V1,2	57-01-101121-01	Tube, 6-CG-7 RCA
V3,4	57-01-101120-01	Tube, 6CA7/EL34 Amprex
V5	57-01-101116-01	Tube, 5U4G8 RCA

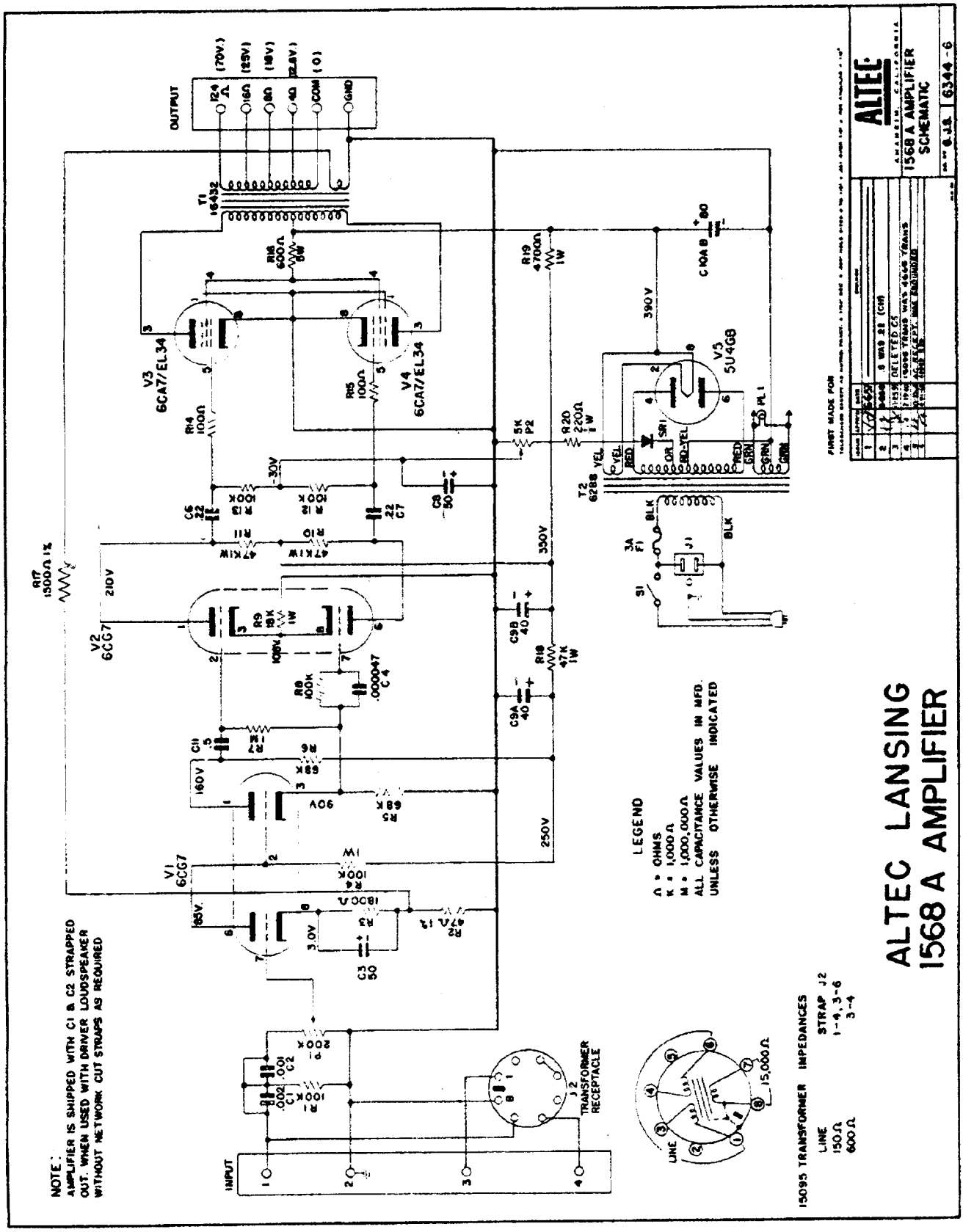


Figure 3. Schematic, 1568A Amplifier