KS-16547, L1 AMPLIFIER — DESCRIPTION

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1. GENERAL

1.01 This practice provides descriptive information on the KS-16547, L1 Amplifier. This amplifier is designed for use in Announcement Systems such as the 3A, 4A, 6A, 8A and 9A, where large amounts of power are not required. It also has use in central office group alerting systems.

1.02 The circuitry and components used in the amplifier should provide long trouble-free operation with less power consumption.

1.03 The amplifier has a gain of 63 db and a nominal power output of 4 watts into a 600 or 4-ohm load. The circuit schematic Drawing SD-95257-01 (not attached to this practice) includes connecting information. The detailed circuit description is in CD-95257-01.

1.04 Fig. 1 shows a photograph of the front view of the amplifier with the cover mat in place.

1.05 Fig. 2 shows a photograph of the rear view of the amplifier with the electron tubes mounted in the sockets. The tubes are not furnished with the amplifier.

2. ELECTRICAL CHARACTERISTICS

2.01 The following are typical electrical characteristics for the amplifier:

Power Supply:

110-130 volts, 60 cps ac; 45 watts at 115 volts. Fused with 2-amp fuse.

Power Output:

4 watts into a nominal resistive load with less than 5% harmonic distortion from 100 to 5000 cps.

Fig. 1 – Front View

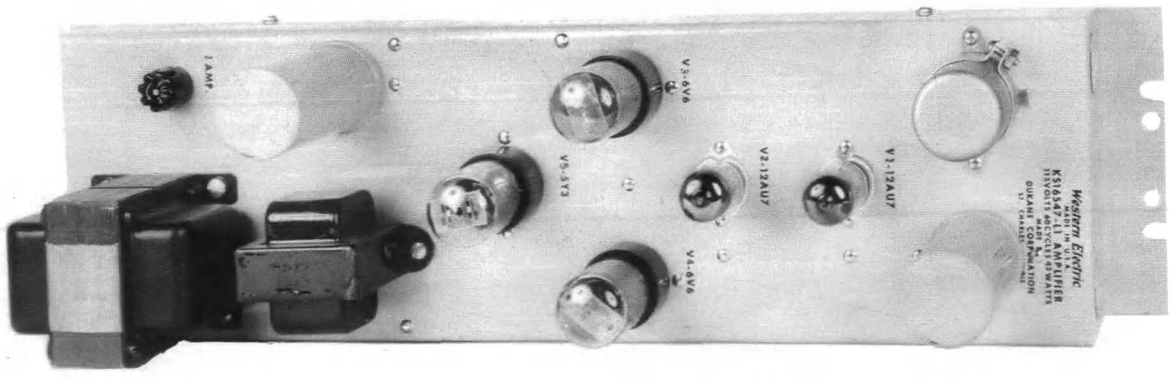

Fig. 2 – Rear View

Input Circuit:

600 ohms nominal source impedance (balanced). Internal input impedance approximately 900 ohms.

Output Circuit:

4 and 600 ohms with internal output impedance of approximately 1/4 of nominal load. 4-ohm output has center tap and half of the winding may be used for a 1-ohm load.

Maximum Gain:

Approximately 63 db.

Frequency Response:

See Fig. 3.

Output Noise:

−40 dbm maximum (unweighted and maximum gain).

Gain Control:

Continuously variable screwdriver operated potentiometer.

3. MECHANICAL CHARACTERISTICS

3.01 The mechanical characteristics of the amplifier are as follows:

Mechanical:

Width: 19" (Arranged for standard 19" relay rack mounting.)

Height: 5-1/4".

Depth: 6-3/4" (6" behind mounting surface.)

Weight: 10 pounds.

Mounting: Held in place by four No. 12-24 screws.

Finish: Light gray enamel panel and chassis.

Electron Tubes:

The electron tube complement (not furnished with amplifier) is as follows:

DESIGNATION	TUBE TYPE	FUNCTION
V1	12AU7	Amplifier
V2	12AU7	Amplifier and Phase Inverter
V3-V4	6V6GT	Push-Pull Output
V5	5Y3GT	Rectifier

4. MOUNTING AND MECHANICAL ARRANGEMENTS

4.01 The amplifier is equipped with a removable front cover held in place by four screws. The amplifier is fastened to the relay rack through holes in the mounting flange. The cover may be removed to provide access to the wiring side of the chassis.

4.02 The gain control and power switch are located on the front of the chassis. The gain control is slotted for screwdriver adjustment and is protected against accidental turning by means of a removable cap. The power switch is also protected against accidental operation by means of a guard.

4.03 The amplifier should operate satisfactorily in normal ambient room temperatures. However, if the ambient is above 100°F., trouble may be experienced if the amplifier is operated continuously.

4.04 There are two holes on the left side of the chassis 13/16" in diameter and one hole on the right side. Also on the right side of the chassis is a 7/8" diameter hole. All holes are provided with spun eyelets.

4.05 Terminal boards TB1, TB2 and TB3 are provided for external connections. They are located on the wiring side of the chassis and are identified.

5. EXTERNAL CONNECTIONS

5.01 All external connections are brought through the holes at the end of the chassis to terminal boards TB1, TB2 and TB3. The power connections should be brought through the 7/8" hole on the right side of the chassis and made to terminal board TB3. Table I shows the connections to TB3.

TABLE I

TERMINAL NO.	CONNECTION
17	Ungrounded Side of ac Line
18	Grounded Side of ac (110-120 volts)
19	Grounded Side of ac (120-130 volts)

5.02 The input connections to the amplifier may be brought through either of the two holes on the left side of the chassis. The second hole on the right side of the chassis (13/16" diameter) is provided for the output connections. The input and output connections should be made in accordance with Table II.

TABLE II

TERMINAL BOARD NO.	TERMINAL NO.	CONNECTION
TB1	1, 2 and 3	Not Used
TB1	4 and 5	600-ohm input
TB1	6 and 7	Not Used
TB1	8	Ground
TB2	9	Ground
TB2	10 and 12	4-ohm output
TB2	11	Center Tap of 4-ohm output
TB2	13 and 14	600-ohm output
TB2	15 and 16	Not Used

6. TRANSMISSION INFORMATION

6.01 The KS-16547, L1 Amplifier is designed for telephone line application and has a balanced 600-ohm input. The input transformer is provided with an electrostatic and electromagnetic shield and is sufficiently well balanced so that external repeating coils should not be required under normal circumstances.

6.02 Figs. 3 and 4 give typical performance curves for the KS-16547, L1 Amplifier.

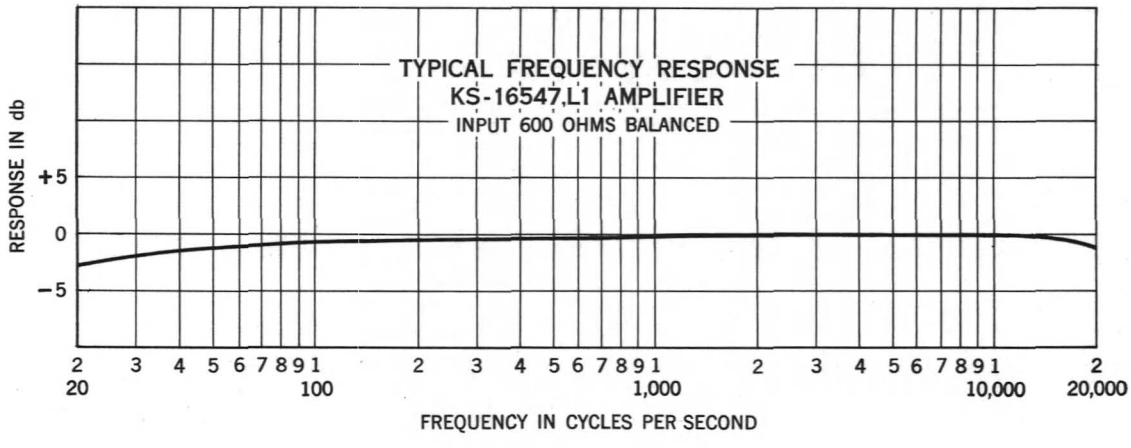

Fig. 3 – Typical Frequency Response

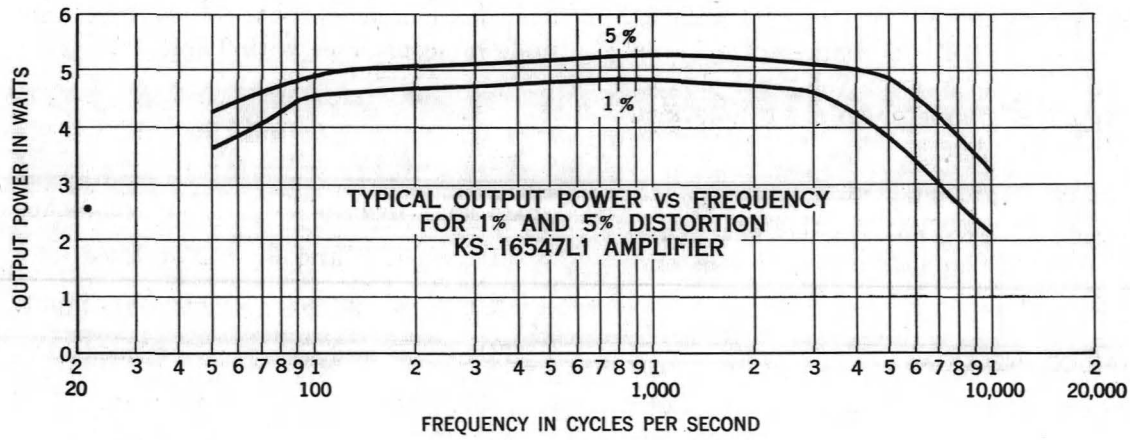

Fig. 4 – Distortion Characteristics