

## KS-16607, L1 AMPLIFIER — DESCRIPTION

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### 1. GENERAL

1.01 This practice provides a description of a small, optional plug-in preamplifier used with the KS-16608, L1 and KS-16610, L1 Amplifiers. The latter are basic amplifiers and are discussed in detail in other sections in this division of practices. The preamplifier is designed to plug into an octal tube socket on the basic amplifier chassis. Hence, soldered or other external connections are not required for its use. A photograph of the amplifier is shown in Fig. 1.

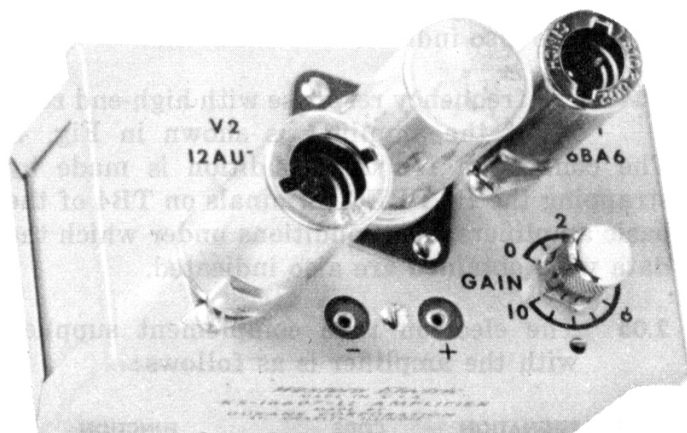


Fig. 1 — KS-16607, L1 Amplifier

1.02 The KS-16607, L1 Amplifier is a volume limiting device. It is designed to provide sufficient gain for low-level microphone inputs and is intended for speech applications only. However, its electrical characteristics are such that it may be used where there is need to play incidental low quality music over a paging system.

1.03 The circuit schematic drawing for the amplifier is SD-95271-01. The application schematic is SD-95275-01. Neither drawing is attached. The detailed description of the amplifier is in CD.95271-01.

### 2. ELECTRICAL CHARACTERISTICS

2.01 Typical electrical characteristics of the KS-16607, L1 Amplifier are listed below:

#### *DC Power Supply:*

300  $\pm$  10 volts dc, 8 ma with no more than 0.002 volt of ripple. (Obtained from basic amplifier.)

#### *AC Power Supply:*

Filament: 6.3 volts, 60 cps, 0.6 amp. (Obtained from basic amplifier.)

#### *Output Load:*

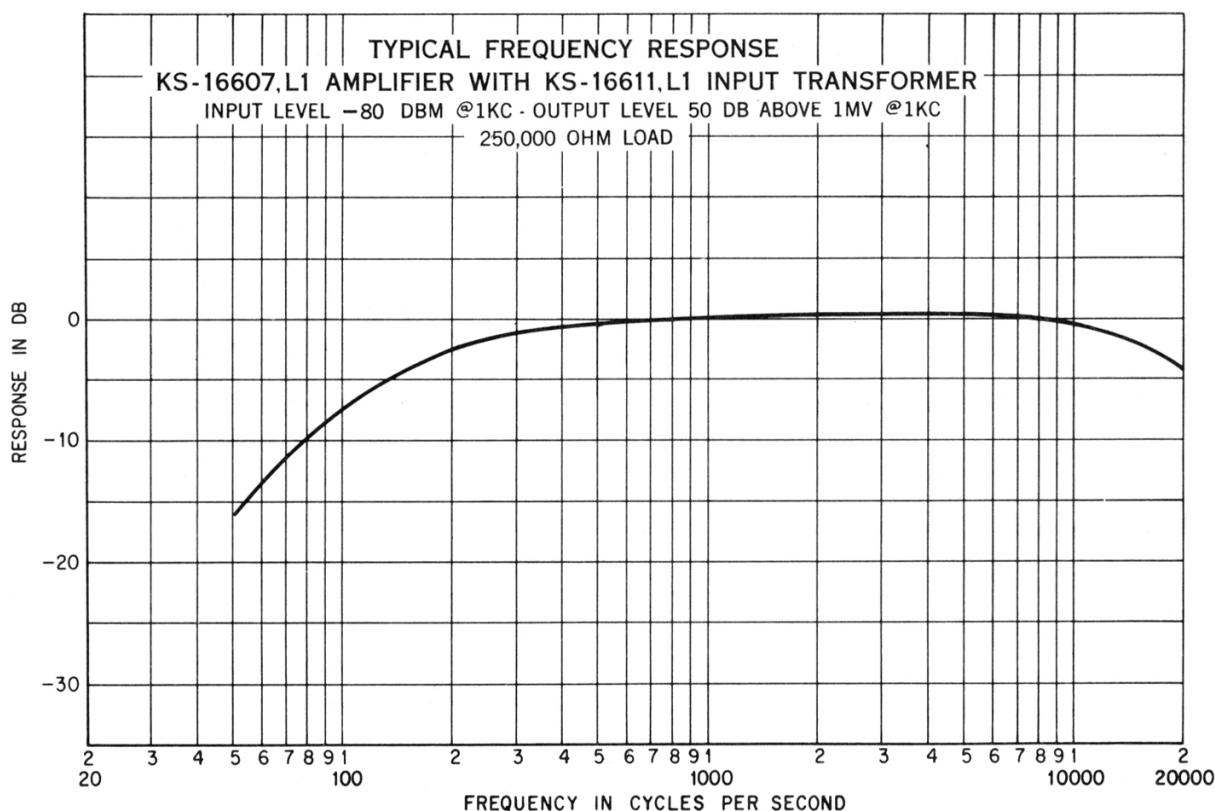
0.1 megohm or higher.

#### *Output:*

The "input-output" ratio is 1:1 for outputs up to about 1 volt. For higher input levels, the compression ratio is approximately 6:1 (6 db input increase results in 1 db output increase above the point at which gain reduction starts).

#### *Gain:*

An input of 0.0045 volt will produce about 1 volt out at 1000 cycles across a load of 0.25 megohm.



**Fig. 2 – Frequency Response**

**Frequency Response:**

See Fig. 2.

***Input Circuit:***

Unbalanced 0.25 megohm gain control. Designed to operate with KS-16611, L1 Transformer plugged into INPUT NO. 1-PREAMP socket of basic amplifier.

**Output Noise:**

50 db below 1-volt output (unweighted).

### Gain Control:

Screwdriver operated, continuously variable.

**Test Jacks:**

Provided to facilitate adjustment of input signal for correct limiter operation.

- 2.02** A typical frequency response curve for the amplifier for all input impedances is

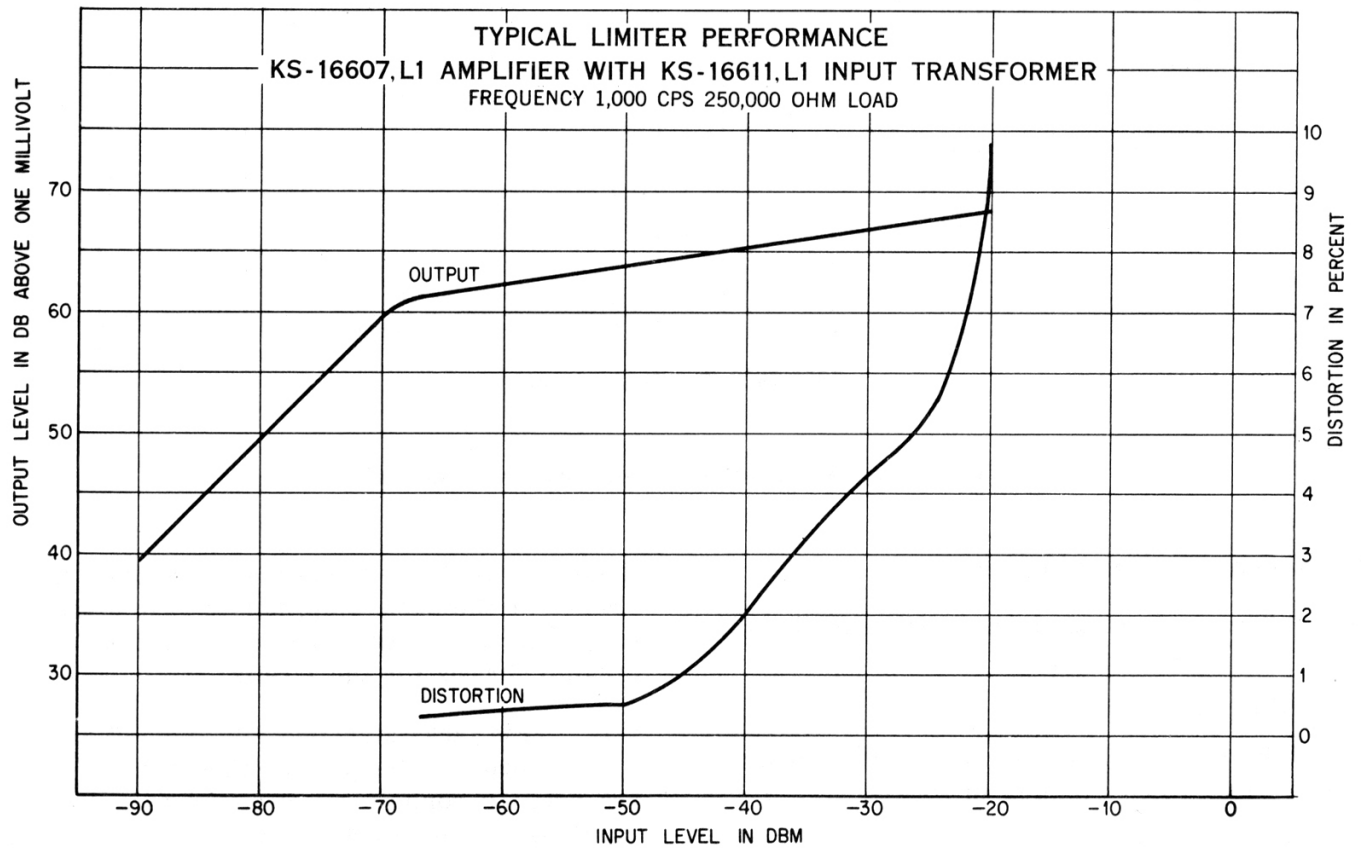
shown in Fig. 2. The conditions under which the response data were obtained are also indicated.

- 2.03** The distortion and limiting characteristics of the amplifier are shown in Fig. 3. The conditions under which the data were obtained are also indicated.

- 2.04** The frequency response with high-end roll-off of the amplifier is shown in Fig. 4. The connection for this condition is made by strapping the HI FREQ terminals on TB4 of the basic amplifiers. The conditions under which the data were obtained are also indicated.

- 2.05** The electron tube complement supplied with the amplifier is as follows:

TUBE DESIGNATION	CODE	FUNCTION
(V1)	1 — 6BA6	Control stage
(V2)	1 — 12AU7	Second stage and control amplifier

**Fig. 3 – Distortion and Limiting Characteristics**

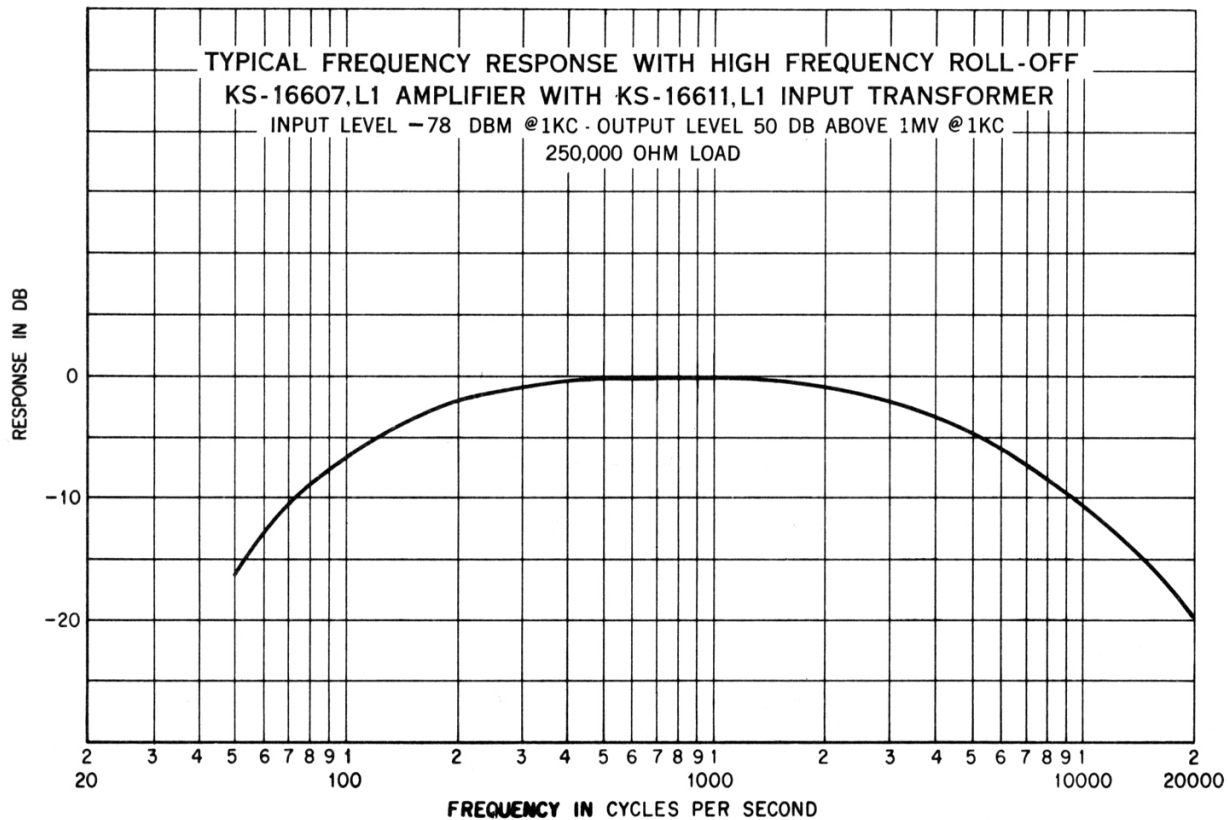


Fig. 4 – Frequency Response with High-end Roll-off

### 3. MECHANICAL CHARACTERISTICS

**3.01** The mechanical characteristics of the amplifier are as follows:

Width: 2-3/4"

Height: 2-3/8" (4-3/4" to top of capacitor and tubes when plugged in socket)

Length: 4-5/8"

Mounting: Plugs into an octal socket on basic amplifier

Clamping arrangement: 2 screws

Weight: 1-1/4 pounds

Finish: Light gray enamel

### 4. INSTALLATION AND ADJUSTMENT

**4.01** The preamplifier plugs into a standard octal-type socket stenciled PREAMPLIFIER which is located on the basic amplifier

chassis. Two tapped holes are provided in the chassis of the basic amplifier to fasten the unit in place. Clearance holes are provided in the preamp chassis for the screws.

**4.02** Test jacks stenciled "+" and "-" are provided on the preamplifier chassis. These are used to connect a voltmeter to adjust the input signal for proper limiting action by means of the gain control on the preamp chassis stenciled GAIN.

**4.03** When a carbon microphone is used, it is desirable to attenuate the high frequencies at the output of the preamplifier to compensate for the rising characteristics of the microphone. The high frequency roll-off can be obtained by using the shorting bar provided with the KS-16608, L1 and KS-16610, L1 Amplifiers. This connection is made on terminal board TB4 of the basic amplifier and is discussed in more detail in the practices pertaining to those amplifiers.