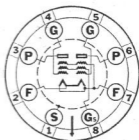
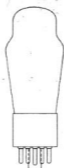


Sylvania

TYPE 1E7G

DOUBLE PENTODE
POWER AMPLIFIER



CHARACTERISTICS

Filament Voltage DC	2.0 Volts
Filament Current	0.240 Ampere
Over-all Length	4 1/4"
Maximum Diameter	1 3/8"
Bulb	ST-12
Base-Small Octal 8-Pin	8-C

Rating and Characteristics:

Filament Voltage	2.0 Volts
Plate Voltage	135 Volts
Screen Voltage	135 Volts
Grid Voltage*	-4.5 Volts
Plate Current‡ (per section)	7.5 Ma.
Screen Current‡ (per section)	2.1 Ma.
Plate Resistance	220000 Ohms
Mutual Conductance	1600 μmhos
Amplification Factor	350

Typical Operating Conditions and Characteristics:

Filament Voltage	2.0 Volts
Plate Voltage	135 Volts
Screen Voltage	135 Volts
Grid Voltage*	-7.5 Volts
Plate Current (total for both sections)‡	6.5 Ma. (Approx.)
Screen Current (total for both sections)‡	2.0 Ma. (Approx.)
Load Resistance (plate-to-plate)	24000 Ohms
Power Output†	0.650 Watt
Total Harmonic Distortion	5 Per Cent

*Negative filament return.

‡With zero signal.

†With 12 r-m-s volts input signal grid to grid. See Circuit Application notes.

CIRCUIT APPLICATION

Sylvania 1E7G is a double pentode power amplifier designed especially for use in the output stage of battery operated receivers. This tube, equipped with an octal base, has high power sensitivity and readily provides Class A push-pull operation with considerable power output at low distortion. These characteristics along with reduced filament current (240 ma. as compared with 260 ma. for Types 19 and 33) and low plate and screen current consumption (8.5 ma.) make possible an economical output system.

When transformer coupled to a Type 1H6G, Type 1E7G will deliver the rated power output under Class A conditions. Although the optimum load resistance per section is 16,000 ohms, the recommended plate-to-plate load for push-pull operation is 24,000 ohms. However, this value is not critical since the load characteristic is rather flat up to 30,000 ohms.

If additional power is desired the 1E7G may be over-driven to a limited extent. For example, under Class AB conditions, an output of approximately 1.1 watts with less than 10% total distortion is delivered for a total grid current of about 200 micro-amperes. No additional audio stage is required for this type of service since the 1H6G is capable of furnishing sufficient input signal to secure such performance.

It may be desirable to employ a Type 1H4G as a driver tube for the 1E7G. This would of course affect the design of the inter-stage transformer since the plate impedance of Type 1H6G is about three times that of the 1H4G. When a 1H6G driver is used the grids cannot be driven very far positive before excessive distortion is experienced, due to the effects of grid current. However, with a 1H4G driver stage this condition would not be encountered as soon.