

Power Amplifier and Oscillator

GENERAL CHARACTERISTICS

FORCED AIR COOLED TRIODE

ELECTRICAL

|                                                |                    |
|------------------------------------------------|--------------------|
| Filament                                       | Thoriated Tungsten |
| Starting current must never exceed 36 amps.    |                    |
| Voltage                                        | 7.5 volts          |
| Current                                        | 24 amperes         |
| Amplification Factor                           | 17                 |
| Transconductance (Grid to Plate) Ip = 1.0 amp. | 10,000 micromhos   |
| Direct Interelectrode Capacitances             |                    |
| Grid to Plate                                  | 10 $\mu\text{f}$   |
| Grid to Filament                               | 1 $\mu\text{f}$    |
| Plate to Filament                              | 1.3 $\mu\text{f}$  |
| Frequency for Maximum Ratings                  | 150 megacycles     |

MECHANICAL

|                                      |                         |
|--------------------------------------|-------------------------|
| Maximum Overall Dimensions           |                         |
| Length                               | 6 5/16 inches           |
| Diameter                             | 3 3/8 inches            |
| Mounting Position—Vertical           | Radiator Down           |
| Type of Cooling                      | Forced Air              |
| Plate Dissipation                    | 1.0 1.5 2.0 (KW)        |
| Air Flow to Radiator                 | 70 100 150 (CFM)        |
| Back Pressure                        | 0.4 1.0 2.0 (in. water) |
| Maximum Incoming Air Temperature     | 45°C                    |
| Maximum Glass Temperature            | 180°C                   |
| Net Weight (approx.)                 | 5 1/2 pounds            |
| Shipping Weight (approx.) (one tube) | 6 pounds                |

\*See Note No. 4 on following page.

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

A.F. Power Amplifier and Modulator—Class B

|                                                      | Maximum<br>Rating<br>per Tube | Typical<br>Operation<br>Two Tubes |
|------------------------------------------------------|-------------------------------|-----------------------------------|
| D.C. Plate Voltage                                   | 3500                          | 3500                              |
| D.C. Grid Voltage                                    | —                             | —200                              |
| Effective Load Resistance<br>(plate to plate) (ohms) | —                             | 3820                              |
| Zero Signal D.C. Plate Current (amps)                | —                             | 0.100                             |
| Peak A.F. Grid to Grid Voltage                       | —                             | 1200                              |
| Max. Signal D.C. Plate Current (amps) <sup>1</sup>   | 1.0                           | 1.9                               |
| Max. Signal Plate Input (kw) <sup>1</sup>            | 4.0                           | —                                 |
| Plate Dissipation (kw) <sup>1</sup>                  | 1.5                           | —                                 |
| Max. Signal Driving Power<br>(approx.) (watts)       | —                             | 380                               |
| Max. Signal Power Output (kw)                        | —                             | 4.7                               |

Plate Modulated R.F. Power Amplifier  
Class C—Telephony

(Carrier conditions per tube for use with a maximum modulation factor of 1.0)

|                                  | Maximum<br>Rating<br>per Tube | Typical<br>Operation<br>One Tube |
|----------------------------------|-------------------------------|----------------------------------|
| D.C. Plate Voltage               | 2750                          | 2500                             |
| D.C. Grid Voltage                | —600                          | —600                             |
| Grid Resistor (ohms)             | —                             | 2900                             |
| Cathode Resistor (ohms)          | —                             | 45                               |
| Peak R.F. Grid Voltage           | —                             | 950                              |
| D.C. Plate Current (amps)        | .800                          | .570                             |
| Plate Input (kw)                 | 2.0                           | —                                |
| Plate Dissipation (kw)           | 1.0                           | —                                |
| D.C. Grid Current (approx.) (ma) | 150                           | 100                              |
| Driving Power (approx.) (watts)  | —                             | 90                               |
| Power Output (kw)                | —                             | 1.0                              |

AMPEREX ELECTRONIC CORPORATION  
230 DUFFY AVE., HICKSVILLE, N.Y.

(Carrier conditions per tube for use with a maximum modulation factor of 1.0)

|                                              | <u>Maximum<br/>Rating<br/>per Tube</u> | <u>Typical<br/>Operation<br/>One Tube</u> |
|----------------------------------------------|----------------------------------------|-------------------------------------------|
| D.C. Plate Voltage                           | 3500                                   | 3500                                      |
| D.C. Grid Voltage                            | .....                                  | —200                                      |
| Peak R.F. Grid Voltage                       | .....                                  | 295                                       |
| D.C. Plate Current (amps)                    | 0.8                                    | 0.5                                       |
| Plate Input (kw)                             | 2.25                                   | ....                                      |
| Plate Dissipation (kw)                       | 1.5                                    | 1.2                                       |
| D.C. Grid Current                            | ....                                   | 0                                         |
| Driving Power (approx.) (watts) <sup>2</sup> | .....                                  | 82                                        |
| Power Output (kw)                            | .....                                  | .610                                      |

### R.F. Power Amplifier and Oscillator—Class C Telegraphy

(Key-down conditions per tube without amplitude modulation<sup>3)</sup>)

|                                     | <b>Maximum<br/>Rating<br/>per Tube</b> | <b>Typical<br/>Operation<br/>One Tube</b> |
|-------------------------------------|----------------------------------------|-------------------------------------------|
| D.C. Plate Voltage                  | 3500                                   | 3500                                      |
| D.C. Grid Voltage                   | —600                                   | —450                                      |
| Peak R.F. Grid Voltage              | .....                                  | 880                                       |
| D.C. Plate Current (amps)           | 1.0                                    | 860                                       |
| Plate Input (kw)                    | 3.0                                    | .....                                     |
| Plate Dissipation (kw) <sup>1</sup> | 1.5                                    | .....                                     |
| D.C. Grid Current (approx.) (ma)    | 150                                    | 150                                       |
| Driving Power (approx.) (watts)     | .....                                  | 120                                       |
| Plate Power Output (kw)             | .....                                  | 2.175                                     |

**NOTES:**

1. Averaged over any audio-frequency cycle of sine-wave form.
2. At crest of audio-frequency cycle with modulation factor of 1.0.
3. Modulation essentially negative may be used if the positive peak of the envelope does not exceed 115% of the carrier conditions.
4. The normal maximum plate dissipation is 1.5 kw. However, for industrial applications where low efficiencies may be expected, an extra margin of safety may be assured by increasing the air flow rate and, therefore, plate dissipation to 2.8 kw.



