

WESTINGHOUSE

ELECTRON TUBE TYPE 899-A

MODULATOR, AMPLIFIER AND OSCILLATOR

GENERAL CHARACTERISTICS

| | |
|-----------------------------|-------------|
| Water-Cooled Triode # | |
| Filament Voltage # | 14.5 Volts |
| Filament Current* | 180 Amperes |
| Amplification Factor | 27 |
| Capacitance, Grid-Plate | 23 uuf |
| Capacitance, Grid-Filament | 10 uuf |
| Capacitance, Plate-Filament | 5 uuf |
| Net Weight | 25 lbs. |
| Shipping Weight | 125 lbs. |

MAXIMUM RATINGS AND TYPICAL OPERATION CONDITIONS

R-F Power Amplifier, Class B

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

Maximum Ratings

| | |
|---------------------------------|-------|
| Plate Volts, D-C | 18000 |
| Plate Current, D-C, Ampere | 2.5 |
| Plate Input, Watts | 30000 |
| Plate Dissipation, Watts | 20000 |
| Plate Volts and Input for 5 MC | 100% |
| Plate Volts and Input for 15 MC | 75% |
| Plate Volts and Input for 60 MC | 50% |

Typical Operation

| | | |
|-----------------------------|-------|-------|
| Plate Volts, D-C | 10000 | 15000 |
| Plate Current, D-C, Amperes | 1.65 | 1.70 |
| Grid Volts, D-C* | -200 | -400 |
| Grid Volts, Peak R-F | 800 | 900 |
| Grid Current, D-C, Ampere | 0.10 | 0.07 |
| Driving Power, Watts ** | 540 | 660 |
| Power Output, Watts | 5000 | 8000 |

Plate-Modulated R-F Power Amplifier, Class C

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

Maximum Ratings

| | |
|---------------------------------|-------|
| Plate Volts, D-C | 10000 |
| Plate Current, D-C, Amperes | 2.5 |
| Plate Input, Watts | 15000 |
| Plate Dissipation, Watts | 15000 |
| Plate Volts and Input for 5 MC | 100% |
| Plate Volts and Input for 15 MC | 75% |
| Plate Volts and Input for 60 MC | 50% |
| Grid Volts, D-C | -3000 |
| Grid Current, D-C, Amperes | 0.5 |

ELECTRON TUBE TYPE 899-A (Continued)

Typical Operation

| | | |
|-----------------------------------|-------|-------|
| Plate Volts, D-C | 8000 | 10000 |
| Plate Current, D-C, Amperes | 1.35 | 1.25 |
| Grid Volts, D-C | -1500 | -1600 |
| Grid Volts, Peak R-F | 2600 | 2700 |
| Grid Current, D-C, Ampere | 0.28 | 0.33 |
| Driving Power, Watts | 730 | 850 |
| Power Output, Watts | 8000 | 10000 |

R-F Power Amplifier and Oscillator, Class C

Key-down conditions per tube without modulation ##

Maximum Ratings

| | |
|---------------------------------------|-------|
| Plate Volts, D-C | 18000 |
| Plate Current, D-C, Ampere | 5.0 |
| Plate Input, Watts | 60000 |
| Plate Dissipation, Watts | 30000 |
| Plate Volts and Input for 5 MC | 100% |
| Plate Volts and Input for 15 MC | 75% |
| Plate Volts and Input for 60 MC | 50% |
| Grid Volts, D-C | -3000 |
| Grid Current, D-C, Ampere | 0.6 |

Typical Operation

| | | | |
|-----------------------------------|-------|-------|-------|
| Plate Volts, D-C | 10000 | 15000 | 18000 |
| Plate Current, D-C, Amperes | 2.0 | 2.8 | 2.8 |
| Grid Volts, D-C | -1400 | -1800 | -2000 |
| Grid Volts, Peak R-F | 2700 | 3200 | 3600 |
| Grid Current, D-C Amp | 0.30 | 0.25 | 0.15 |
| Driving Power, Watts | 800 | 800 | 480 |
| Power Output, Watts | 15000 | 25000 | 35000 |

NOTES:

Water flow of 8 to 16 gallons per minute must be provided for cooling of the anode. Water temperatures must not exceed 70° C under any conditions of operation. The filament and the grid stem can be properly cooled by supplying five cubic feet of air per minute to each. Both the water and air cooling must be applied before application of any voltages and continue for at least 10 minutes after they are removed.

‡ This tube can often be operated with reduced filament voltage when the load conditions are lower than maximum. When the filament voltage is to be removed, it should be reduced gradually in six equal steps over a period of three minutes.

° With A-C filament supply. When D-C is used, the grid voltage value should be reduced by 10 volts.

** At crest of audio-frequency cycle with modulation factor of 1.0.

Modulation essentially negative may be used if the positive peak of the audio-frequency envelope does not exceed 115% of the carrier conditions.

899A

