POWER AMPLIFIER TRIODE TYPE WL-5986

The WL-5986 is a three-electrode tube designed for use as an oscillator or amplifier. The anode is water cooled and is capable of dissipating 70 kilowatts. The cathode is a thoriaated tungsten filament. Maximum ratings apply up to 15 megacycles.

**ELECTRICAL:**
- Cathode: Thoriaated Tungsten Filament
- Filament: Min. Baggy Max.
- Voltage: 11.5 12.0 12.5 Volts
- Current at Baggy Voltage: 275 300 315 Amperes
- Heating Time: 15 Secs
- Amplification Factor with Plate Amps=1.0 & Grid Volts= -200:
  - Grid to Plate: 37 µµ
  - Grid to Filament: 90 µµ
  - Plate to Filament: 6 µµ

**MECHANICAL:**
- Mounting Position: Vertical, Anode Down
- Type of Cooling: Water
- Minimum Water Flow: 30 GPM
- Maximum Outlet Water Temperature: 70 °C
- Air Flow to Filament and Grid Seal: 30 CFM
- Maximum Bulb Temperature: 180 °C
- Maximum Seal Temperature: 165 °C
- Net Weight (approx.): 28 Pounds

Radio Frequency Power Amplifier and Oscillator Class C Telegraphy
(Key down conditions pertube without modulation)

**MAXIMUM RATINGS**

**Absolute Maximum Values:**
- DC Plate Voltage: 17500 max. Volts
- DC Grid Voltage: -2400 max. Volts
- DC Plate Current: 15.0 max. Amperes
- DC Grid Current: 2.0 max. Amperes
- Plate Power Input: 200 max. Kilowatts
- Plate Dissipation: 70 max. Kilowatts

**Typical Operating Characteristics:**
- DC Plate Voltage: 1700 Volts
- DC Grid Voltage: -1500 Volts
- Peak RF Grid Voltage: 2290 Volts
- DC Plate Current: 10.6 Amperes
- DC Grid Current (approx.): 1.95 Amperes
- Driving Power (approx.): 4.25 Kilowatts
- Power Output (approx.): 136 Kilowatts

Maximum ratings apply up to 15 megacycles. The tube may be operated at higher frequencies with reduced maximum plate voltage and plate power input as shown below. At the higher frequencies, special attention must be given to cooling. Increased air flow as high as 250 CFM may be required to maintain bulb and seal temperatures.

**Frequency Derating Chart**
- Frequency: 15 20 30 Megacycles
- Maximum Permissibles:
  - DC Plate Voltage: 100 90 78 Percent
  - Plate Power Input: 100 90 78 Percent

WESTINGHOUSE ELECTRIC CORPORATION, ELECTRONIC TUBE DIVISION, ELMIRA, NEW YORK

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AVERAGE CONSTANT CURRENT CHARACTERISTICS

Rated Filament Conditions:
- Anode Amperes
- Grid Amperes

Grid Volts vs. Anode Kilovolts

Anode Kilovolts

Grid Volts

0  2  4  6  8  10  12  14