

ELECTRONICS DEPARTMENT
GENERAL  ELECTRIC

Transmitting Tube 5710--Description and Rating

The 5710 is a three-electrode tube designed for use as a Class C radio-frequency pulse amplifier and oscillator. The anode is forced-air-cooled. The cathode is a thoriated-tungsten filament. Maximum ratings apply up to a frequency of 20 megacycles.

TECHNICAL INFORMATION

GENERAL

| <u>Electrical Data</u> | Minimum | Bogey | Maximum | |
|--|---------|-------|---------|-----------|
| Filament Voltage* | --- | 10 | 10.5 | Volts |
| Filament Current at Bogey Voltage | 400 | 420 | 440 | Amperes |
| Filament Starting Current | --- | --- | 630 | Amperes |
| Filament Cold Resistance | 0.002 | --- | --- | Ohms |
| Amplification Factor, $I_b = 0.5$ amp, $E_c = -70$ volts | --- | 95 | --- | |
| Grid Plate Transconductance, $I_b = 0.5$ amp, $E_c = -70$ volts | --- | 14500 | --- | Micromhos |
| Interelectrode Capacitances | | | | |
| Grid-Plate | 31 | 36 | 41 | uuf |
| Grid-Filament | 56 | 66 | 76 | uuf |
| Plate-Filament | --- | --- | 1.0 | uuf |

Mechanical Data

Mounting Position - Vertical, Anode Down
 Type of Cooling - Forced Air
 Maximum Incoming Air Temperature 45 C

Required Air Flow on Anode

| | 5 | 4 | 3 |
|-----------------------------------|-----|-----|-----|
| Plate Dissipation - Kilowatts | 5 | 4 | 3 |
| Air Flow - Cubic Feet per Minute | 450 | 400 | 350 |
| Static Pressure - Inches of Water | 1.5 | 1.0 | 0.8 |

Required Air Flow

Filament and Grid Seals, Air Directed Downward from a 4-inch Diameter Nozzle 200 CFM
 Maximum Glass Temperature 150 C
 Net Weight, approximate 40 Pounds

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

Grid-pulsed Radio-frequency Amplifier and Oscillator - Class C

Maximum Ratings, Absolute Values

| | | |
|----------------------------|------------|--------------|
| D-C Plate Voltage | 20,000 max | Volts |
| D-C Grid Voltage | -1,000 max | Volts |
| Peak Plate Current | 300 max | Amperes |
| D-C Grid Current, average | 0.10 max | Ampere |
| Peak Grid Current | 150 max | Amperes |
| Peak Cathode Current | 400 max | Amperes |
| Duty | 0.004 max | |
| Pulse Width | 100 max | Microseconds |
| Plate Dissipation, average | 5,000 max | Watts |

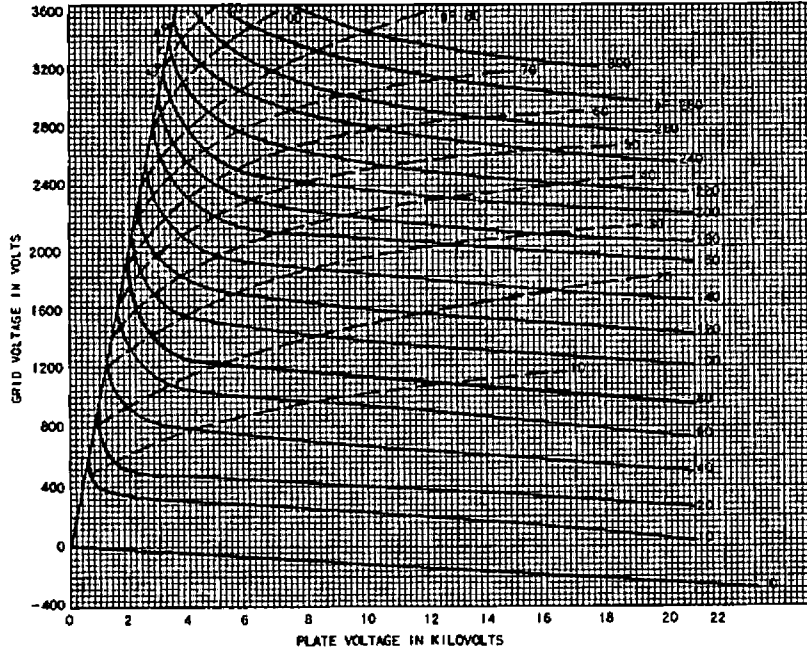
* The filament supply should be continuously variable. It is recommended that the filament voltage be increased gradually during starting.

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS (CONTINUED)

Grid-pulsed Radio-frequency Amplifier and Oscillator - Class C (Continued)

Typical Operation

| | | |
|---------------------------------|--------|-----------|
| D-C Plate Voltage | 17,500 | Volts |
| D-C Grid Voltage | -400 | Volts |
| Peak R-F Grid Voltage | 3,700 | Volts |
| Peak Plate Current | 240 | Amperes |
| Peak Grid Current | 110 | Amperes |
| Peak Driving Power, approximate | 80 | Kilowatts |
| Peak Power Output, approximate | 825 | Kilowatts |

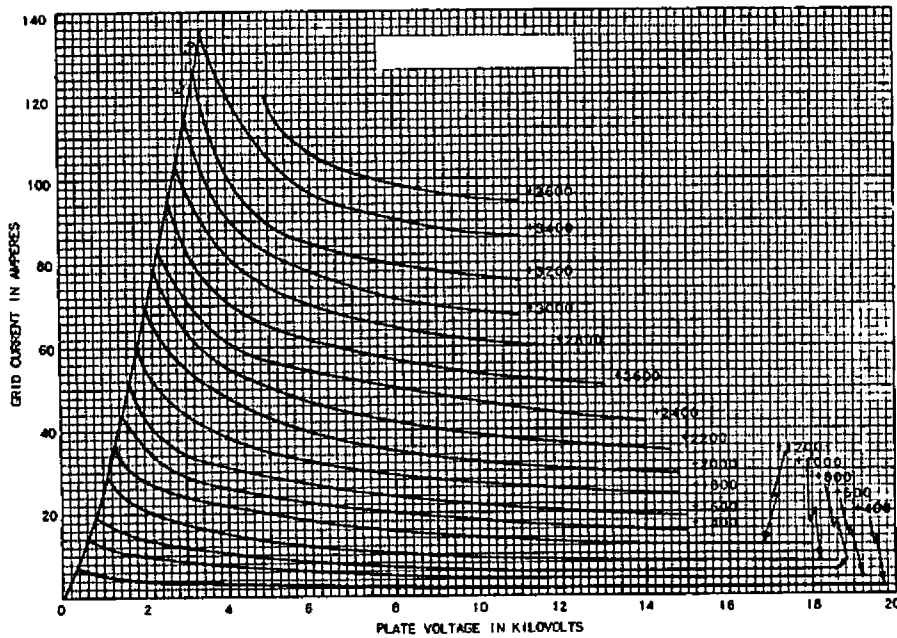


K-69087-72A190

March 3, 1948

5710

Constant Current Characteristics

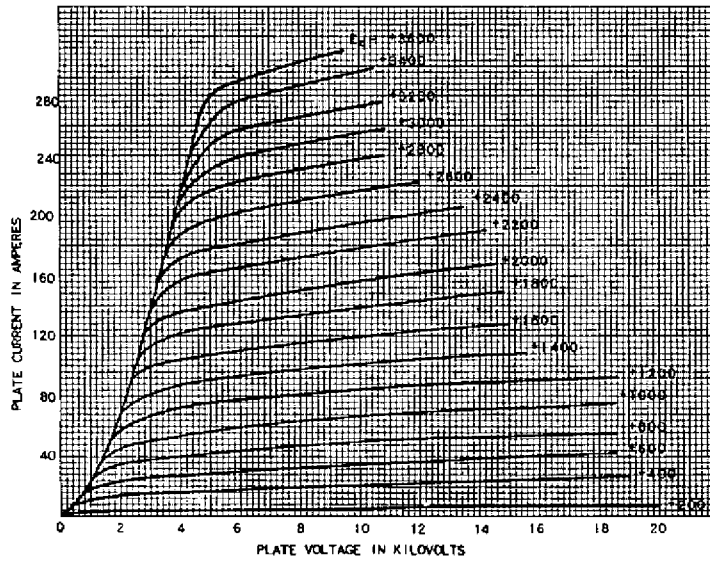


K-69087-72A191

March 3, 1948

5710

Grid Characteristics

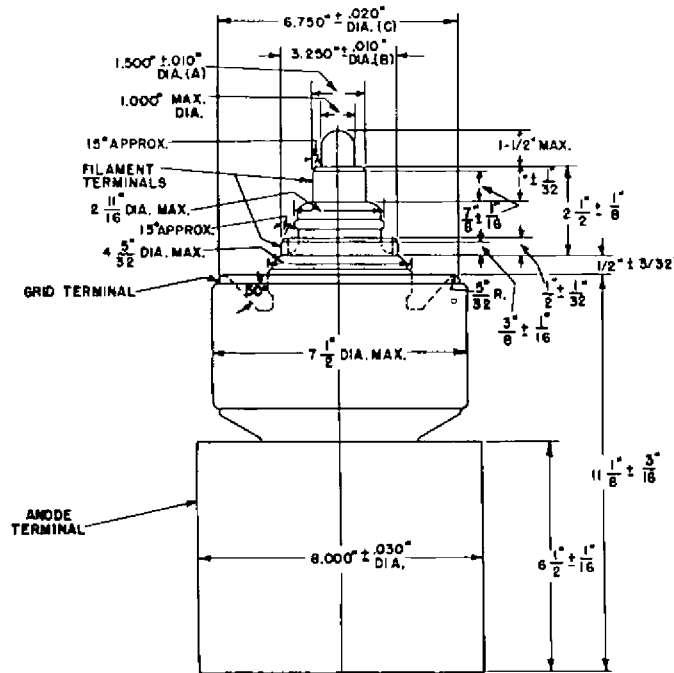


K-69067-72A192

March 3, 1946

5710

Plate Characteristics



| | MAX. ECCENTRICITY |
|----|-------------------|
| A* | .040" |
| B* | .040" |
| C* | .060" |

* MEASURED WITH RESPECT TO ANODE &
 * MEASURED WITH RESPECT TO & OF FILAMENT TERMINAL.

N-20716AZ

March 2, 1948

Outline
 5710