

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

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

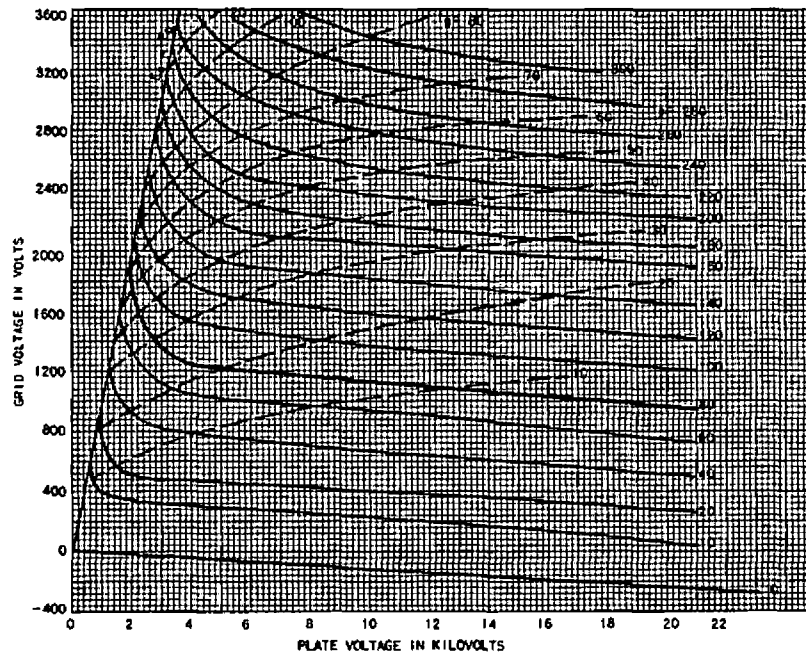
- * The filament supply should be continuously variable. It is recommended that the filament voltage be increased gradually during starting.

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

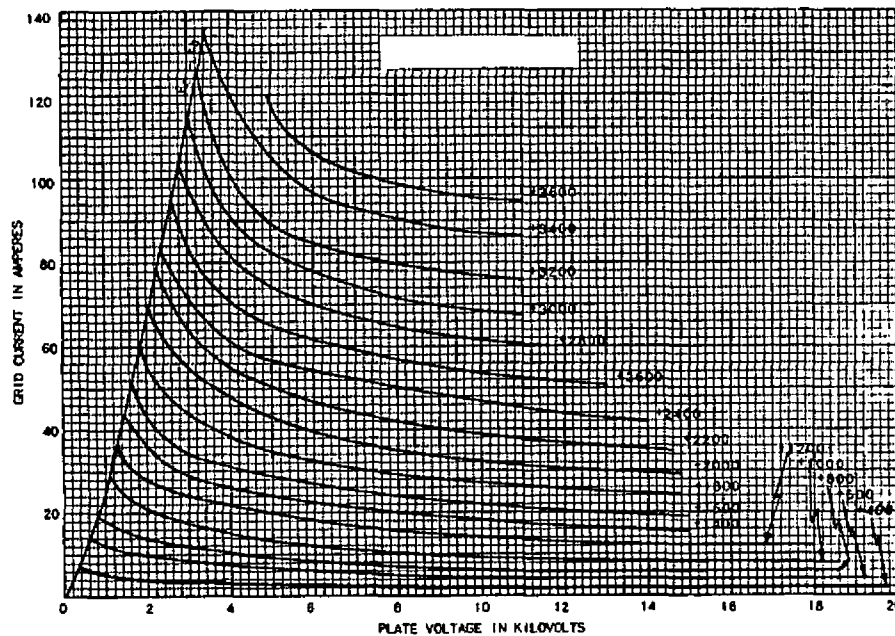


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Constant Current Characteristics



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Grid Characteristics

