5713

POWER TRIODE

FORCED-AIR-COOLED, GROUNDED-GRID TYPE

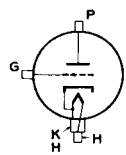
GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:		
Voltage	3.3 ± 0.2	ac or dc volts
Current	11.5	amp
Minimum Heating Time▲	2	minutes
Amplification Factor	25	
Direct Interelectrode Capacitances (Approx.):		
Grid to Plate	10.3	μμf
Grid to Cathode	26	μμf
Plate to Cathode	0.5	μμf

Mechanical:

Terminal Connections:



H: Heater
G: Grid Terminal (Flange)
K: Cathode
P: Plate Terminal (Radiator)

Mounting Position	Vertical, with radiator up or down
Overall Length	4-25/32" ± 3/32"
Greatest Diameter	2.056" ± 0.006"
Radiator	Integral Part of Tube

Air Flow:

Through Radiator — The specified air flow for various plate dissipations, as indicated in the tabulation below, should be delivered through the radiator toward the bulb before and during the application of any voltages.

Plate Dissipation	150	200	250	watts
Air Flow	9	13	18	cfm
Static Pressure	0.14	0.27	0.45	in. of water

Incoming Air Temperature	45 max.	°C
Radiator Temperature (Measured on the core at end away from incoming air)	180 max.	°C
Glass Temperature	180 max.	°C
Grid-Terminal Temperature	140 max.	°C

RF POWER AMPLIFIER & OSCILLATOR — Class C Telegraphy

Key-down conditions per tube without modulation

Maximum CCS● Ratings, *Absolute Values*:

DC PLATE VOLTAGE	1500 max.	volts
DC GRID VOLTAGE	-250 max.	volts
DC PLATE CURRENT	300 max.	ma
DC GRID CURRENT	50 max.	ma
PLATE INPUT	450 max.	watts
PLATE DISSIPATION	250 max.	watts

▲ With 3.3 volts on heater. This time may be shortened by increasing the heater voltage during the interval required for the cathode to reach normal operating temperature. Increasing the heater voltage to 4 volts reduces the heating time to 1 minute, while 5 volts reduces it to 40 seconds. After this heating interval, the heater voltage must be reduced to 3.3 volts.

● Continuous Commercial Service.

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Typical Operation in Grounded-Cathode Circuit:

DC Plate Voltage	1500	volts
DC Grid Voltage*	-175	volts
	510	ohms
Peak RF Grid Voltage	210	volts
DC Plate Current	300	ma
DC Grid Current (Approx.)	40	ma
Driving Power (Approx.)	8	watts
Power Output (Approx.)	290	watts

Typical Operation in Grounded-Grid Circuit at 220 Mc:

Same values as for Grounded-Cathode Circuit with the following exceptions:

Driving Power (Approx.)#	65	watts
Power Output (Approx.)	325	watts

CHARACTERISTICS RANGE VALUES FOR EQUIPMENT DESIGN

	Note	Min.	Max.	
Heater Current	1	10.8	12.2	amp
Amplification Factor	1,2	19	29	
Grid-Plate Capacitance	-	9	11.6	μμf
Grid-Cathode Capacitance	-	23	29	μμf
Plate-Cathode Capacitance	-	0.39	0.65	μμf
Grid Voltage	1,3	-	-90	volts
Grid Voltage	1,4	-41	-70	volts
Peak Cathode Current	1,5	40	-	amp
Power Output	1,6	290	-	watts

Note 1: Heater volts = 3.3.

Note 2: With 1000 volts on plate, and plate ma. = 150.

Note 3: With 1500 volts on plate and plate ma. = 20.

Note 4: With 1500 volts on plate and plate ma. = 150.

Note 5: Represents maximum usable cathode current (plate current plus grid current) for tube, for any condition of operation.

Note 6: With 1500 volts on plate, plate ma. = 350, grid ma. = 50 to 60, grid resistor of 4000 ± 10% ohms, and frequency of 20 Mc.

Required by tube and input circuit. A portion of this power appears in the load circuit.

* Obtained from fixed supply or from a cathode resistor value shown.

Data on operating frequencies for the 5713 are given on the sheet TRANS. TUBE RATINGS vs FREQUENCY.

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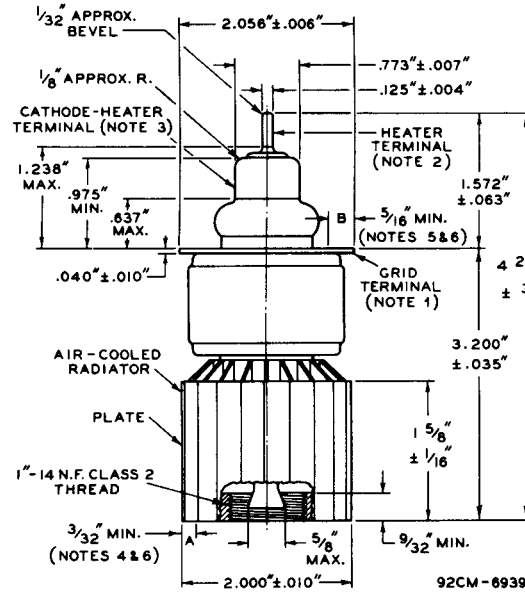

NOTE 1: MAXIMUM ECCENTRICITY OF ℄ (AXIS) OF GRID-TERMINAL FLANGE WITH RESPECT TO ℄ (AXIS) OF PLATE RADIATOR IS 0.040", MEASURED WITHIN 1/32" OF BOTTOM OF RADIATOR.

NOTE 2: MAXIMUM ECCENTRICITY OF ℄ (AXIS) OF HEATER TERMINAL WITH RESPECT TO ℄ (AXIS) OF CATHODE-HEATER TERMINAL IS 0.020".

NOTE 3: MAXIMUM ECCENTRICITY OF ℄ (AXIS) OF CATHODE-HEATER TERMINAL WITH RESPECT TO ℄ (AXIS) OF GRID-TERMINAL FLANGE IS 0.020".

NOTE 4: SURFACE OF ANNULAR AREA INDICATED BY "A" ON BOTTOM OF RADIATOR IS IN SAME PLANE WITHIN 0.005", AS DETERMINED BY GAUGE 1/16" WIDE AND 0.005" THICK. THIS GAUGE WILL NOT ENTER MORE THAN 1/16" WITH BOTTOM OF RADIATOR RESTING ON FLAT PLATE.

NOTE 5: SURFACE OF ANNULAR AREA INDICATED BY "B" ON GRID-TERMINAL FLANGE IS IN SAME PLANE WITHIN 0.008", AS DETERMINED BY GAUGE METHOD DESCRIBED IN NOTE 4.

NOTE 6: SURFACE OF ANNULAR AREA INDICATED BY "A" ON BOTTOM OF RADIATOR IS PARALLEL WITHIN 0.030" TO SURFACE OF ANNULAR AREA INDICATED BY "B" ON GRID-TERMINAL FLANGE.

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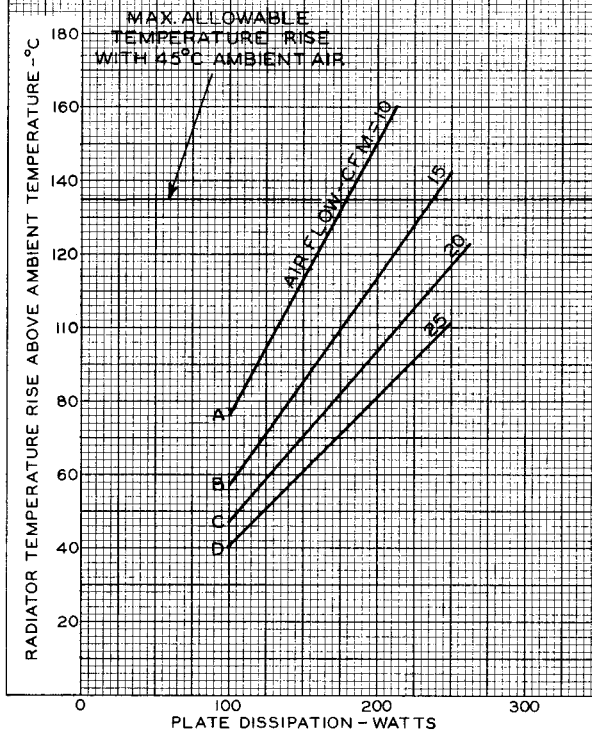
COOLING REQUIREMENTS

E_f = 3.3 VOLTS MAXIMUM RADIATOR TEMPERATURE = 180°C

CURVE	PRESSURE DROP INCHES OF WATER
A	0.17
B	0.33
C	0.55
D	0.82

CURVES TAKEN ACCORDING TO NAFM* STANDARDS - BULLETIN Nº 103

*NATIONAL ASSOCIATION OF FAN MFRS., GENERAL MOTORS BLDG., DETROIT, MICH.



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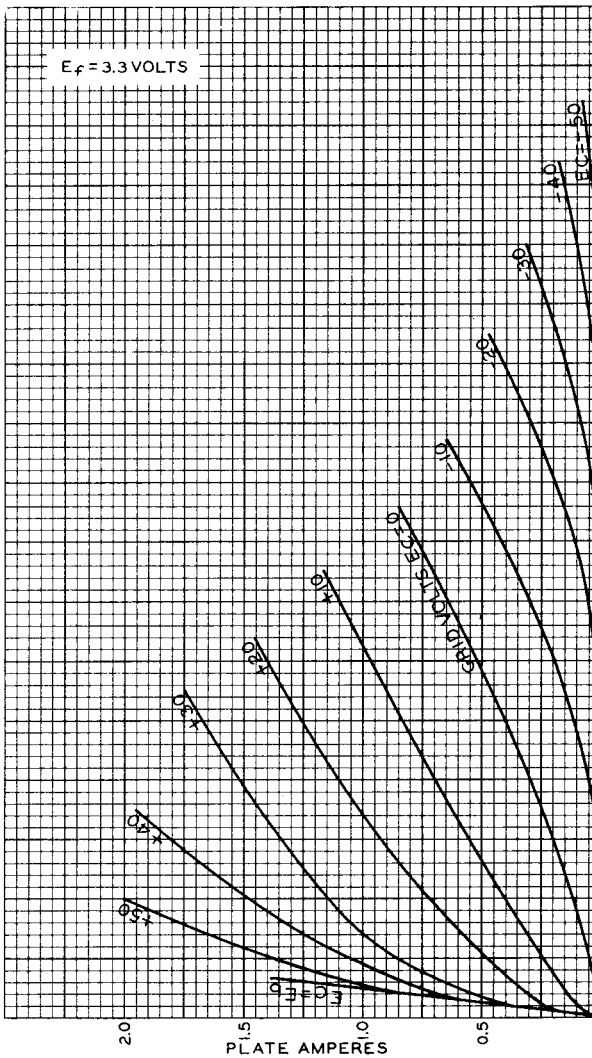
AVERAGE PLATE CHARACTERISTICS



MAR. 18, 1948

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-6942

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TYPICAL GRID CHARACTERISTICS