1614
TRANSMITTING BEAM POWER AMPLIFIER

GENERAL DATA

Electrical:

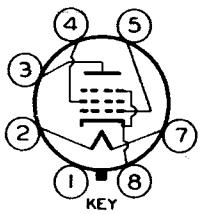
Heater, for Unipotential Cathode:		
Voltage	6.3	ac or dc volts
Current	0.9	amp
Transconductance: for plate current of 72 ma.	6050	μmhos
Direct Interelectrode Capacitances:[o]		
Grid-No.1 to Plate	0.4 max.	μμf
Input	10	μμf
Output	12	μμf

[o] with shell connected to cathode.

Mechanical:

Mounting Position	Any
Maximum Overall Length	4-5/16"
Maximum Seated Length	3-3/4"
Maximum Diameter	1-9/16" ± 1/16"
Bulb	MT-10A
Base	Small-Wafer Octal 7-Pin
Basing Designation for BOTTOM VIEW	7AC

Pin 1 - Shell
Pin 2 - Heater
Pin 3 - Plate
Pin 4 - Grid No.2



Pin 5 - Grid No.1
Pin 7 - Heater
Pin 8 - Cathode, Grid No.3

AF POWER AMPLIFIER & MODULATOR - Class AB_1[#] ←

Maximum Ratings, ***Absolute Values:***

	CCS[●]	*ICAS*[●●]	
DC PLATE VOLTAGE	375 max.	550 max.	volts
DC GRID-No.2 (SCREEN) VOLTAGE	300 max.	400 max.	volts
DC PLATE CURRENT	110 max.	110 max.	ma.
PLATE INPUT	40 max.	60 max.	watts
GRID-No.2 DISSIPATION	3.5 max.	3.5 max.	watts
PLATE DISSIPATION	21 max.	25 max.	watts
PEAK HEATER-CATHODE VOLTAGE:			
Heater negative with respect to cathode	200 max.	200 max.	volts
Heater positive with respect to cathode	200 max.	200 max.	volts

Typical Operation:
Unless otherwise specified, values are for 2 tubes

DC Plate Voltage	360	530	volts
DC Grid-No.2 Voltage	270	340	volts

#, ●, ●●: See next page. ← Indicates a change.

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DC Grid-No.1 (Control-Grid) Voltage	-22.5	-36	volts
Peak AF Grid-No.1-to-Grid-No.1 Voltage	45	72	volts
Zero-Signal DC Plate Current	88	60	ma.
Max.-Signal DC Plate Current	132	160	ma.
Max.-Signal DC Grid-No.2 Current	15	20	ma.
Effective Load Resistance (plate-to-plate)	6600	7200	ohms
Total Harmonic Distortion	2	2.5	%
Max.-Signal Power Output	26.5	50	watts

PLATE-MODULATED RF POWER AMPLIFIER - Class C Telephony

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

→ **Maximum Ratings,** *Absolute Values*:

	CCS●	*ICAS*●●	
DC PLATE VOLTAGE	325 max.	375 max.	volts
DC GRID-No.2 (SCREEN) VOLTAGE	300 max.	300 max.	volts
DC GRID-No.1 (CONTROL-GRID) VOLTAGE	-125 max.	-125 max.	volts
DC PLATE CURRENT	70 max.	95 max.	ma.
DC GRID-No.1 Current	5 max.	5 max.	ma.
PLATE INPUT	23 max.	35 max.	watts
GRID-No.2 INPUT	2.5 max.	2.5 max.	watts
PLATE DISSIPATION	14 max.	21 max.	watts
PEAK HEATER-CATHODE VOLTAGE:			
Heater negative with respect to cathode	200 max.	200 max.	volts
Heater positive with respect to cathode	200 max.	200 max.	volts

→ **Typical Operation:**

DC Plate Voltage	325	375	volts
DC Grid-No.2 Voltage▲	245	250	volts
	10000	18000	ohms
DC Grid-No.1 Voltage□	-40	-50	volts
	20000	25000	ohms
Peak RF Grid-No.1 Voltage	51	80	volts
DC Plate Current	70	93	ma.
DC Grid-No.2 Current	8	7	ma.
DC Grid-No.1 Current (Approx.)	2	2	ma.
Driving Power (Approx.)	0.1	0.15	watts
Power Output (Approx.)	15	24.5	watts

▲ Obtained preferably from a separate source modulated with the plate supply, or from the modulated plate-supply through a series resistor of the value shown.

□ Subscript 1 indicates that grid-current does not flow during any part of input cycle.

●, ●●, □: See next page. ←Indicates a change.

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PLATE-MODULATED RF POWER AMPLIFIER – Class C Telephony

Triode Connection - Grid No. 2 Connected to Plate

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

Maximum Ratings, *Absolute Values*:

	CCS●	ICAS●●	
DC PLATE VOLTAGE	325 max.	375 max.	volts
DC GRID-No.1 (CONTROL-GRID) VOLTAGE	-125 max.	-125 max.	volts
DC PLATE CURRENT	70 max.	95 max.	ma.
DC GRID-No.1 CURRENT	10 max.	10 max.	ma.
PLATE INPUT	23 max.	35 max.	watts
PLATE DISSIPATION	14 max.	21 max.	watts
PEAK HEATER-CATHODE VOLTAGE:			
Heater negative with respect to cathode	200 max.	200 max.	volts
Heater positive with respect to cathode	200 max.	200 max.	volts

Typical Operation:

DC Plate Voltage	325	375	volts
DC Grid-No.1 Voltage□	-85	-90	volts
	21000	15000	ohms
Peak RF Grid-No.1 Voltage	102	135	volts
DC Plate Current	65	90	ma.
DC Grid-No.1 Current (Approx.)	4	6	ma.
Driving Power (Approx.)	0.4	0.8	watts
Power Output (Approx.)	11.5	21	watts

□ obtained from grid resistor of value shown or by partial self-bias methods.

RF AMPLIFIER & OSCILLATOR – Class C Telegraphy

Key-down conditions per tube without modulation□□

Maximum Ratings, *Absolute Values*:

	CCS●	ICAS●●	
DC PLATE VOLTAGE	375 max.	450 max.	volts
DC GRID-No.2 (SCREEN) VOLTAGE	300 max.	300 max.	volts
DC GRID-No.1 (CONTROL GRID) VOLTAGE	-125 max.	-125 max.	volts
DC PLATE CURRENT	110 max.	110 max.	ma.
DC GRID-No.1 CURRENT	5 max.	5 max.	ma.
PLATE INPUT	35 max.	45 max.	watts
GRID-No.2 INPUT	3.5 max.	3.5 max.	watts
PLATE DISSIPATION	21 max.	25 max.	watts
PEAK HEATER-CATHODE VOLTAGE:			
Heater negative with respect to cathode	200 max.	200 max.	volts
Heater positive with respect to cathode	200 max.	200 max.	volts

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→ **Typical Operation:**

DC Plate Voltage	375	450	volts
DC Grid-No.2 Voltage⊕	250	250	volts
	12500	25000	ohms
DC Grid-No.1 Voltage⊕⊕	-40	-45	volts
	20000	22500	ohms
	425	410	ohms
Peak RF Grid-No.1 Voltage	51	73	volts
DC Plate Current	80	100	ma.
DC Grid-No.2 Current	10	8	ma.
DC Grid-No.1 Current(Approx.)	2	2	ma.
Driving Power (Approx.)	0.1	0.15	watts
Power Output (Approx.)	21	31	watts

● Continuous Commercial Service.

●● Intermittent Commercial and Amateur Service.

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

⊕ Obtained from a separate source, or from the plate-voltage supply with a voltage divider, or through a series resistor of the value shown.

⊕⊕ Obtained from fixed supply, by grid resistor (20000, 22500), by cathode resistor (425, 410) or by combination methods.

Data on operating frequencies for the 1614 are given on the sheet TRANS. TUBE RATINGS vs FREQUENCY

CURVES under type 807 apply to the 1614 within its maximum ratings

← Indicates a change.