



1614

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 μ mhosDirect Interelectrode Capacitances:⁰Grid-No.1 to Plate . . . 0.4 max. μ fInput. 10 μ fOutput 12 μ f⁰ 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" $\pm$ 1/16"

Bulb MT-10A

Base Small-Wafer Octal 7-Pin

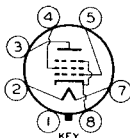
Basing Designation for BOTTOM VIEW 7AC

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.3AF POWER AMPLIFIER & MODULATOR - Class AB₁[#]

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.



TRANSMITTING BEAM POWER AMPLIFIER

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.



1614

1614

TRANSMITTING BEAM POWER AMPLIFIER

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

•, ••, □□ : See next page.

◀ Indicates a change.



TRANSMITTING BEAM POWER AMPLIFIER

→ 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.