



801-A

801-A/801

R-F POWER AMPLIFIER,

A-F POWER AMPLIFIER, MODULATOR

Filament	Thoriated tungsten	
Voltage	7.5	a-c or d-c volts
Current	1.25	amp.
Amplification Factor	8	
Direct Interelectrode Capacitances:		
Grid to Plate	6.0	μf
Grid to Filament	4.5	μf
Filament to Plate	1.5	μf
Maximum Overall Length		5-3/8"
Maximum Diameter		2-1/16"
Bulb		ST-16
Base	Medium 4-Pin "MICANOL", Bayonet	
RCA Socket	Type UR-542-A	

MAXIMUM RATINGS and TYPICAL OPERATING CONDITIONS

A-F POWER AMPLIFIER & MODULATOR - Class A₁

D-C Plate Voltage	600 max.	volts
Plate Dissipation	20 max.	watts
Typical Operation:		
D-C Plate Voltage	425 500 600	volts
D-C Grid Voltage Δ	-40 -45 -55	volts
Peak A-F Grid Voltage	35 40 50	volts
D-C Plate Current	18 24 30	ma.
Plate Resistance	5000 4600 4300	ohms
Transconductance	1600 1725 1840	μmhos
Load Resistance	10200 8000 7800	ohms
U.P.O. (5% second harmonic)	1.6 2.3 3.8	watts

$\square$ The d-c resistance in the grid circuit should not exceed 0.5 megohm with cathode bias, or 0.1 megohm with fixed bias.

A-F POWER AMPLIFIER & MODULATOR - Class B

D-C Plate Voltage	600 max.	volts
Max.-Signal D-C Plate Current*	70 max.	ma.
Max.-Signal Plate Input*	42 max.	watts
Plate Dissipation*	20 max.	watts

Typical Operation:

Unless otherwise specified, values are for 2 tubes

D-C Plate Voltage	400 500 600	volts
D-C Grid Voltage Δ	-50 -60 -75	volts
Peak A-F Grid-to-Grid Voltage	270 290 320	volts
Zero-Signal D-C Plate Cur.	8 8 8	ma.
Max.-Signal D-C Plate Cur.	130 130 130	ma.
Load Resistance (per tube)	1500 2000 2500	ohms
Effective Load Resistance (plate to plate)	6000 8000 10000	ohms
Max.-Signal Driving Power	3 3 3	approx.watts
Max.-Signal Power Output	27 36 45	approx.watts

* Averaged over any audio-frequency cycle of sine-wave form.

Δ With a-c filament supply.

$\leftarrow$ -Indicates a change.

April 15, 1940

RCA RADOTRON DIVISION
RCA MANUFACTURING COMPANY, INC.

DATA



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R-F POWER AMPLIFIER, A-F POWER AMPLIFIER, MODULATOR

(continued from preceding page)

R-F POWER AMPLIFIER - Class B Telephony

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

D-C Plate Voltage	600 max.	volts
D-C Plate Current	50 max.	ma.
Plate Input	30 max.	watts
Plate Dissipation	20 max.	watts

Typical Operation:

D-C Plate Voltage	500	600	volts
D-C Grid Voltage ^Δ	-60	-75	volts
Peak R-F Grid Voltage	85	90	volts
D-C Plate Current	45	45	ma.
D-C Grid Current**	0.2	0.2	approx.ma.
Driving Power** [○]	2.2	2.3	approx.watts
Power Output	6	7.5	approx.watts

[○] At crest of a-f cycle with modulation factor of 1.0

PLATE-MODULATED R-F POWER AMPLIFIER - Class C Telephony

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

D-C Plate Voltage	500 max.	volts
D-C Grid Voltage	-200 max.	volts
D-C Plate Current	60 max.	ma.
D-C Grid Current	15 max.	ma.
Plate Input	30 max.	watts
Plate Dissipation	13.5 max.	watts

Typical Operation:

D-C Plate Voltage	400	500	volts	
D-C Grid Voltage ^{ΔΔ}	{	-150	-190	volts
		10000	12700	ohms
Peak R-F Grid Voltage	260	300	volts	
D-C Plate Current	55	55	ma.	
D-C Grid Current**	15	15	approx.ma.	
Driving Power**	4	4.5	approx.watts	
Power Output	14	18	approx.watts	

^Δ obtained by grid resistor of value shown, or by combination of grid resistor with either fixed supply or suitably by-passed cathode resistor.

R-F POWER AMPLIFIER & OSCILLATOR - Class C Telegraphy

Key-down conditions per tube without modulation %

D-C Plate Voltage	600 max.	volts
D-C Grid Voltage	-200 max.	volts
D-C Plate Current	70 max.	ma.
D-C Grid Current	15 max.	ma.
Plate Input	42 max.	watts
Plate Dissipation	20 max.	watts

Typical Operation:

D-C Plate Voltage	500	600	volts	
D-C Grid Voltage $\nabla\Delta$	{	-125	-150	volts
		8300	10000	ohms
		1560	1875	ohms
Peak R-F Grid Voltage	235	260	volts	

**, ^Δ, [▽]: See next page.

← Indicates a change.



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R-F POWER AMPLIFIER, A-F POWER AMPLIFIER, MODULATOR

(continued from preceding page)

D-C Plate Current	65	65	ma.
D-C Grid Current**	15	15	approx.ma.
Driving Power**	3.5	4	approx.watts
Power Output	20	25	approx.watts

▽ obtained from fixed supply, by grid resistor (8300, 10000), or by cathode resistor (1560, 1875). When the 801-A is used in the final amplifier or a preceding stage of a transmitter designed for break-in operation and oscillator keying, a small amount of fixed bias must be used to maintain the plate current at a safe value. With plate voltage of 600 volts, a fixed bias of at least 50 volts should be used.

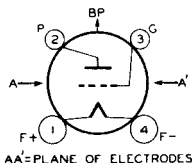
** Subject to wide variations as explained on sheet TRANS. TUBE RATINGS.
* Modulation essentially negative may be used if the positive peak of the audio-frequency envelope does not exceed 115% of the carrier conditions.

Δ with a-c filament supply.

For use of the 801 at the higher frequencies, refer to sheet TRANS. TUBE RATINGS vs FREQUENCY.

For OUTLINE DIMENSIONS, refer to sheet OUTLINES OF RECEIVING TUBES, drawing of ST-16 bulb with 4-pin base.

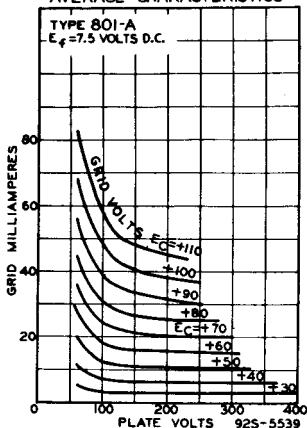
BOTTOM VIEW OF
SOCKET CONNECTIONS



TUBE MOUNTING POSITION

VERTICAL: Base down.
HORIZONTAL: Plane of plate
vertical (on edge).

AVERAGE CHARACTERISTICS

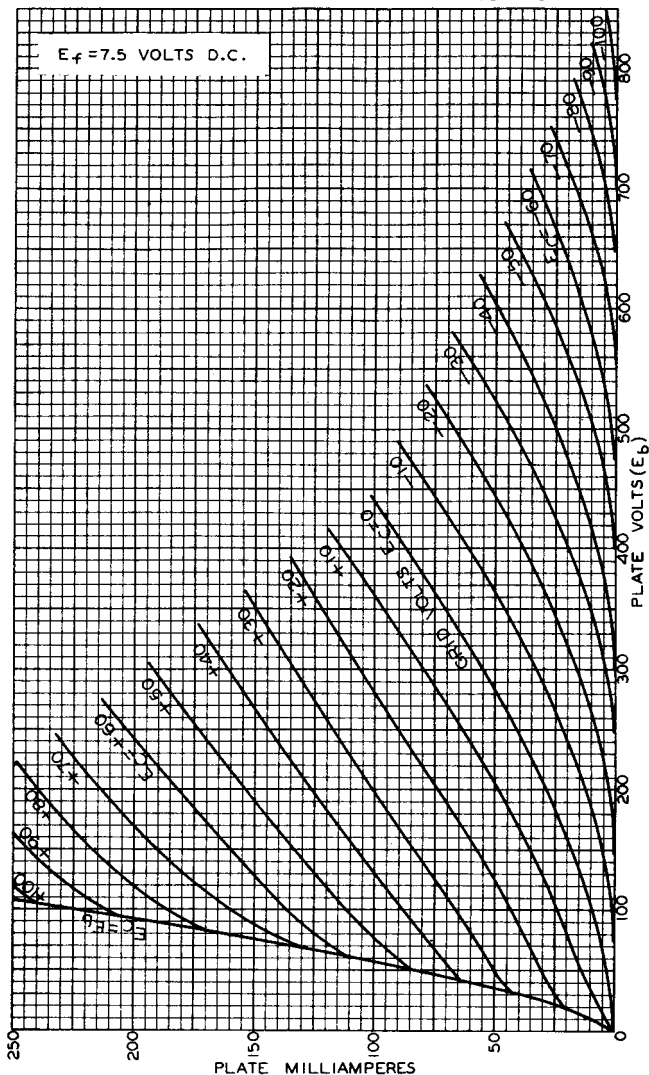


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AVERAGE PLATE CHARACTERISTICS



JULY 18, 1934

 RCA RADOTRON DIVISION
 RCA MANUFACTURING COMPANY, INC.

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