892-R

POWER TRIODE

FORCED-AIR COOLED

GENERAL DATA

Electrical:

Filament, Tungsten: Two-Section Type

Excitation . . . . . Single- or Two-Phase AC, or DC

See FILAMENT CONNECTIONS and EXCITATION CIRCUITS under Type 891. When a single-phase or dc supply is used, do not connect the two filament sections in parallel. Doing so will overheat common filament lead (large terminal) and damage tube.

Voltage per Section. . .	11	volts
Current.	60	amp
Starting Current:	The filament current should never exceed 120 amperes, even momentarily.	
Cold Resistance.	0.031	ohm ←

NOTE: This tube can often be operated with reduced filament voltage as explained on sheet TYPES OF CATHODES in the General Section.

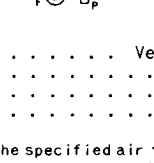
Amplification Factor . . .	50	
Direct Interelectrode Capacitances (Approx.):		←
Grid to Plate.	31	μμf
Grid to Filament	20	μμf
Plate to Filament. . . .	2	μμf

Mechanical:

Terminal Connections:

Term. 1 - Filament

Term. 2 - Junction of Filament Sections, Base Shell



Term. 3 - Filament

G - Grid (Side Arm)

P - Radiator-Cooled Plate Terminal

Mounting Position.	Vertical, Filament End Up
Maximum Overall Length	22"
Maximum Radius	6-1/2"
Radiator	Integral Part of Tube
Air Flow:	←

Through Radiator - The specified air flow for various values of plate dissipation as indicated below should be delivered by a blower before and during the application of any voltages. Filament power, plate power, and air may be removed simultaneously.

Plate Dissipation	2400	3200	4000	. . . watts
Air Flow	300	380	450	. . . cfm
Static Pressure. .	0.20	0.36	0.5	inches of water

Incoming Air Temperature	45 max.	°C
Radiator Temperature (Measured in thermometer well). . . .	180 max.	°C
Bulb Temperature	150 max.	°C ←

Components: ←

Air Jacket	RCA MI-19422-A

← Indicates a change.

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Air Manifold	RCA MI-27017-A
Bracelet (For canvas boot)	RCA MI-27016-A
Filament Connector (2 required)	RCA MI-7422-A
Filament-Section Junction Connector	RCA MI-7432
Filament Terminal Block	RCA MI-19422-7
Grid Connector	RCA MI-7422-A

AF POWER AMPLIFIER & MODULATOR – Class B

Maximum CCS[•] Ratings, *Absolute Values:*

DC PLATE VOLTAGE	12500 max.	volts
MAX.-SIGNAL DC PLATE CURRENT*	2.0 max.	amp
MAX.-SIGNAL PLATE INPUT*	12000 max.	watts
PLATE DISSIPATION*	4000 max.	watts

Typical Operation:

Values are for 2 tubes

DC Plate Voltage	6000	8000	volts
DC Grid Voltage†	0	-60	volts
Peak AF Grid-to-Grid Voltage	1200	1000	volts
Zero-Signal DC Plate Current	0.5	0.5	amp
→ Max.-Signal DC Plate Current	2.6	2.3	amp
Effective Load Resistance (Plate to plate)	4200	6800	ohms
→ Max.-Sig. Driving Power (Approx.)#	135	84	watts
Max.-Sig. Power Output (Approx.)	8000	10500	watts

RF POWER AMPLIFIER – Class B Telephony

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

Maximum CCS[•] Ratings, *Absolute Values:*

DC PLATE VOLTAGE	12500 max.	volts
DC PLATE CURRENT	1.0 max.	amp
PLATE INPUT	6000 max.	watts
PLATE DISSIPATION	4000 max.	watts

→ **Typical Operation:**

DC Plate Voltage	6000	8000	volts
DC Grid Voltage†	0	-60	volts
Peak RF Grid Voltage	230	320	volts
DC Plate Current	0.64	0.67	amp
DC Grid Current (Approx.)[○]	0.03	0.04	amp
Driving Power (Approx.)[▲○]	77	150	watts
Power Output (Approx.)	1000	1800	watts

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

† With ac on filament.

\# The driving stage should have good regulation and should be capable of supplying considerably more than the required driving power.

▲ At crest of audio-frequency cycle with modulation factor of 1.0.

•,○: See next page.

→ Indicates a change.

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PLATE-MODULATED RF POWER AMPLIFIER – Class C Telephony

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

Maximum CCS• Ratings, *Absolute Values*:

DC PLATE VOLTAGE	10000 max.	volts
DC GRID VOLTAGE	-3000 max.	volts
DC PLATE CURRENT	1.0 max.	amp
DC GRID CURRENT	0.3 max.	amp ←
PLATE INPUT	10000 max.	watts
PLATE DISSIPATION	2500 max.	watts

Typical Operation: ←

DC Plate Voltage	6000	8000	volts
DC Grid Voltage	-1000	-1300	volts
From a grid resistor of	3570	5420	ohms
Peak RF Grid Voltage	1650	1950	volts
DC Plate Current	0.83	0.82	amp
DC Grid Current (Approx.)○	0.28	0.24	amp
Driving Power (Approx.)○	420	430	watts
Power Output (Approx.)	3500	5000	watts

RF POWER AMPLIFIER & OSCILLATOR – Class C Telegraphy

Key-down conditions per tube without amplitude modulation##

Maximum CCS• Ratings, *Absolute Values*:

DC PLATE VOLTAGE	12500 max.	volts
DC GRID VOLTAGE	-3000 max.	volts
DC PLATE CURRENT	2.0 max.	amp
DC GRID CURRENT	0.4 max.	amp ←
PLATE INPUT	18000 max.	watts
PLATE DISSIPATION	4000 max.	watts

Typical Operation: ←

DC Plate Voltage	8000	10000	volts
DC Grid Voltage	-1000	-1300	volts
From a grid resistor of	4540	5420	ohms
From a cathode resistor of	720	790	ohms
Peak RF Grid Voltage	1700	2150	volts
DC Plate Current	1.17	1.40	amp
DC Grid Current (Approx.)○	0.22	0.24	amp
Driving Power (Approx.)○	330	495	watts
Power Output (Approx.)	6500	10000	watts

• Continuous Commercial Service.

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

○ For effect of load resistance on grid current and driving power, refer to TUBE RATINGS—*Grid Current and Driving Power* in the General Section.

← Indicates a change.

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CHARACTERISTICS RANGE VALUES FOR EQUIPMENT DESIGN

	Note	Min.	Max.	
Filament Current	1	57	62	amp
Amplification Factor	1,2	42.5	57.5	
Grid-Plate Capacitance	-	28	34	μμf
Grid-Filament Capacitance.	-	15	24	μμf
Plate-Filament Capacitance	-	1.0	3.0	μμf
Plate Voltage.	1,3	5000	7400	volts
Plate Voltage.	1,4	9200	13200	volts
Grid Voltage	1,5	-240	-400	volts
Grid Voltage	1,6	-	925	volts
Peak Cathode Current	7	9	-	amp
Grid Current	1,6	-	1.75	amp
Useful Power Output.	1,8	10000	-	watts

Note 1: With 22 volts ac on filament connected for single-phase operation.

Note 2: With dc grid voltage of -50 volts and dc plate voltage adjusted to give dc plate current of 0.42 amp.

Note 3: With dc grid voltage of 0 volts, and dc plate voltage adjusted to give dc plate current of 0.42 amp.

Note 4: With dc grid voltage of -100 volts, and dc plate voltage adjusted to give dc plate current of 0.42 amp.

Note 5: With dc plate voltage of 15000 volts, and dc grid voltage adjusted to give dc plate current of 20 ma.

Note 6: With dc plate voltage of 1500 volts, and instantaneous grid voltage adjusted to give instantaneous plate current of 6.0 amp.

Note 7: Represents the maximum usable cathode current (plate current and grid current) for the tube under any condition of operation.

Note 8: With dc plate voltage of 10000 volts, dc plate current of 1.4 amp., dc grid current of 0.25 amp., grid resistor of 5000 ± 10% ohms, and frequency of 1.5 megacycles/second.

Data on operating frequencies for the 892-R are given on the sheet TRANS. TUBE RATINGS vs FREQUENCY

Outline Drawing for the 892-R is the same as shown for Type 891-R

Average Filament-Emission Characteristic Curve and Average Filament Characteristic Curve are the same as shown for Type 891

Average Characteristics Curves are the same as shown for Type 892