898-A

TRANSMITTING TRIODE
WATER & FORCED-AIR COOLED

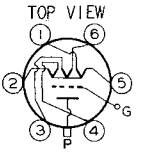
GENERAL DATA

Electrical:

Filament: Tungsten, Three-Section Type
Excitation . . . . 1φAC, 3φAC, or DC
Voltage per section. . . 33 . . . . . volts
Current per section. . . 70 . . . . . amp.
(See FILAMENT CONNECTIONS AND EXCITATION CIRCUITS under this type)
Starting – The current per section should never exceed 105 amperes, even momentarily.
Amplification Factor . . . 45
Direct Interelectrode Capacitances (Approx.):
Grid to Plate. . . . . 62 . . . . . μμf
Grid to Filament . . . . 52 . . . . . μμf
Plate to Filament. . . . 4.2 . . . . . μμf

Mechanical:

Terminal Connections:
Term. 1 – Fil. No. 3
Term. 2 – Fil. No. 2
Term. 3 – Fil. No. 1
Term. 4 – Fil. No. 2
Term. 5 – Fil. No. 3
Term. 6 – Fil. No. 1



G – Ribbon Grid Terminal

P – Water-cooled Plate Terminal

TERMINAL NO5 IS ABOVE GRID ARM

Mounting Position. . . . . Vertical only, glass end up
Maximum Overall Length . . . . . 60-3/8"
Greatest Radius. . . . . 10"
Base (with nozzle for air-cooling of filament seal) No.6628
Water Jacket (with nozzle for air-cooling of bulb) UT-1289-A
Gasket . . . . . RCA Stock No.17879
Cooling – *Water flow* of 15 to 25 gallons per minute must start before application of any voltages and continue for at least 10 minutes after removal of all voltages. Water temperature must not exceed 70°C at jacket outlet under any conditions of operation.
Air flow of 15 cubic feet per minute in bulb nozzle and 3 cubic feet per minute in filament-seal nozzle is required before the application of any voltages and must continue for at least 10 minutes after removal of voltages to limit the glass temperature to 150°C at the hottest part. The incoming air temperature must not exceed 50°C.

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

A-F POWER AMPLIFIER & MODULATOR – Class B

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

D-C PLATE VOLTAGE	15000 max.	. volts
MAX.-SIGNAL D-C PLATE CURRENT*	7.5 max.	. amp.
MAX.-SIGNAL PLATE INPUT*	100 max.	. . kw
PLATE DISSIPATION*	50 max.	. . kw

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

898-A

TRANSMITTING TRIODE

(continued from preceding page)

Typical Operation:

Unless otherwise specified, values are for 2 tubes

D-C Plate Voltage	12000	volts
D-C Grid Voltage●	-100	volts
Peak A-F Grid-to-Grid Voltage	2200	volts
Zero-Sig. D-C Plate Current	2	amp.
Max.-Sig. D-C Plate Current	13	amp.
Effective Load Res. (plate-to-plate)	2000	ohms
Max.-Sig. Driving Power	6	approx. kw
Max.-Sig. Power Output	90	approx. kw

R-F POWER AMPLIFIER - Class B Telephony

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

Maximum Ratings, *Absolute Values*:

D-C PLATE VOLTAGE	20000 max.	volts
D-C PLATE CURRENT	5 max.	amp.
PLATE INPUT	100 max.	kw
PLATE DISSIPATION	75 max.	kw

Typical Operation:

D-C Plate Voltage	12000	15000	18000	volts
D-C Grid Voltage●	-100	-175	-250	volts
Peak R-F Grid Voltage	525	650	775	volts
D-C Plate Current	2.8	3.5	4.2	amp.
Driving Power #,**	0.5	0.75	1.1	approx. kw
Power Output	11	17.5	25	approx. kw

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

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

Maximum Ratings, *Absolute Values*:

D-C PLATE VOLTAGE	12000 max.	volts
D-C GRID VOLTAGE	-3000 max.	volts
D-C PLATE CURRENT	5 max.	amp.
D-C GRID CURRENT	1.25 max.	amp.
PLATE INPUT	60 max.	kw
PLATE DISSIPATION	50 max.	kw

Typical Operation:

D-C Plate Voltage	12000	volts
D-C Grid Voltage	-800	volts
Peak R-F Grid Voltage	2000	volts
D-C Plate Current	5	amp.
D-C Grid Current #	1	approx. amp.
Driving Power #	2	approx. kw
Power Output	45	approx. kw

●; **; #; See next page.

898-A

TRANSMITTING TRIODE

(continued from preceding page)

R-F POWER AMPLIFIER & OSCILLATOR – Class C Telegraphy

*Key-down conditions per tube without modulation***

Maximum Ratings, *Absolute Values*:

D-C PLATE VOLTAGE	20000 max.	volts
D-C GRID VOLTAGE	-3000 max.	volts
D-C PLATE CURRENT	10 max.	amp.
D-C GRID CURRENT	1 max.	amp.
PLATE INPUT	200 max.	kw
PLATE DISSIPATION	100 max.	kw

Typical Operation:

D-C Plate Voltage	12000	15000	18000	volts
D-C Grid Voltage	-800	-900	-1000	volts
Peak R-F Grid Voltage	2050	2300	2550	volts
D-C Plate Current	6.25	7.5	8.33	amp.
D-C Grid Current #	0.8	0.85	0.9	approx. amp.
Driving Power #	1.6	2.0	2.4	approx. kw
Power Output	50	75	100	approx. kw

● With a-c filament excitation.

** At crest of a-f cycle with modulation factor of 1.0.

Subject to wide variations as explained on sheet TUBE RATINGS in General Section.

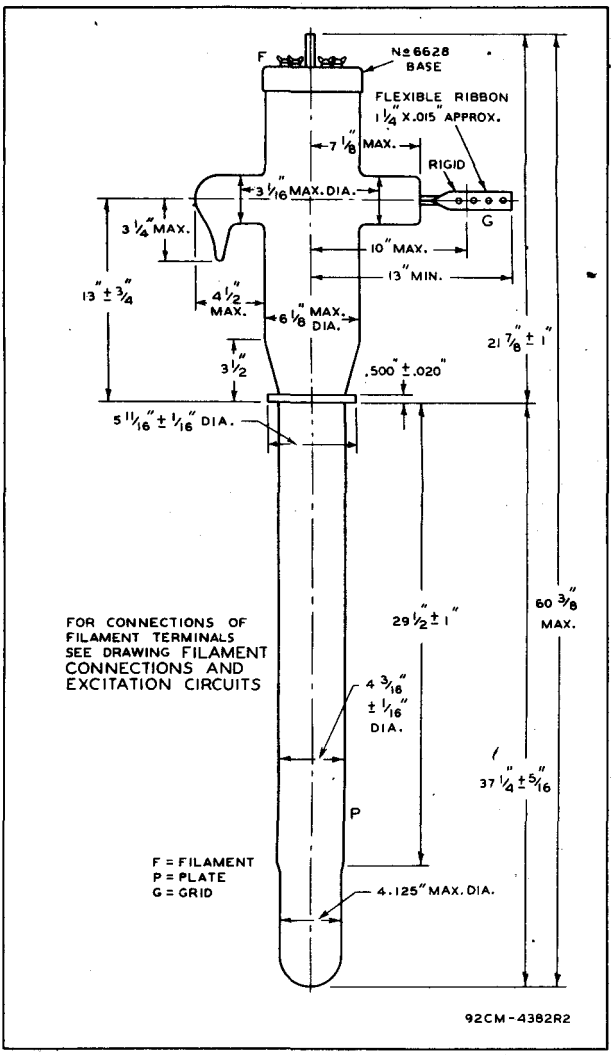
Modulation essentially negative may be used if the positive peak of the audio-frequency envelope does not exceed 115% of the carrier conditions.

Data on operating frequencies for the 898-A are given on the sheet TRANS. TUBE RATINGS vs FREQUENCY.

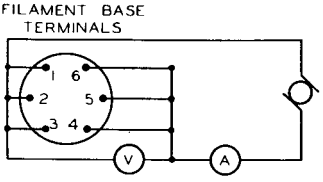
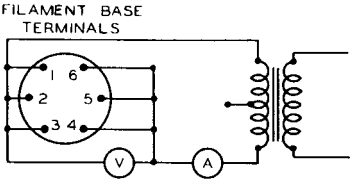
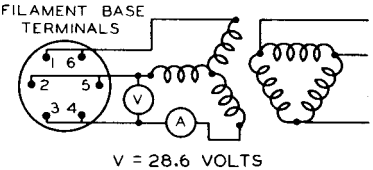
898-A

898-A

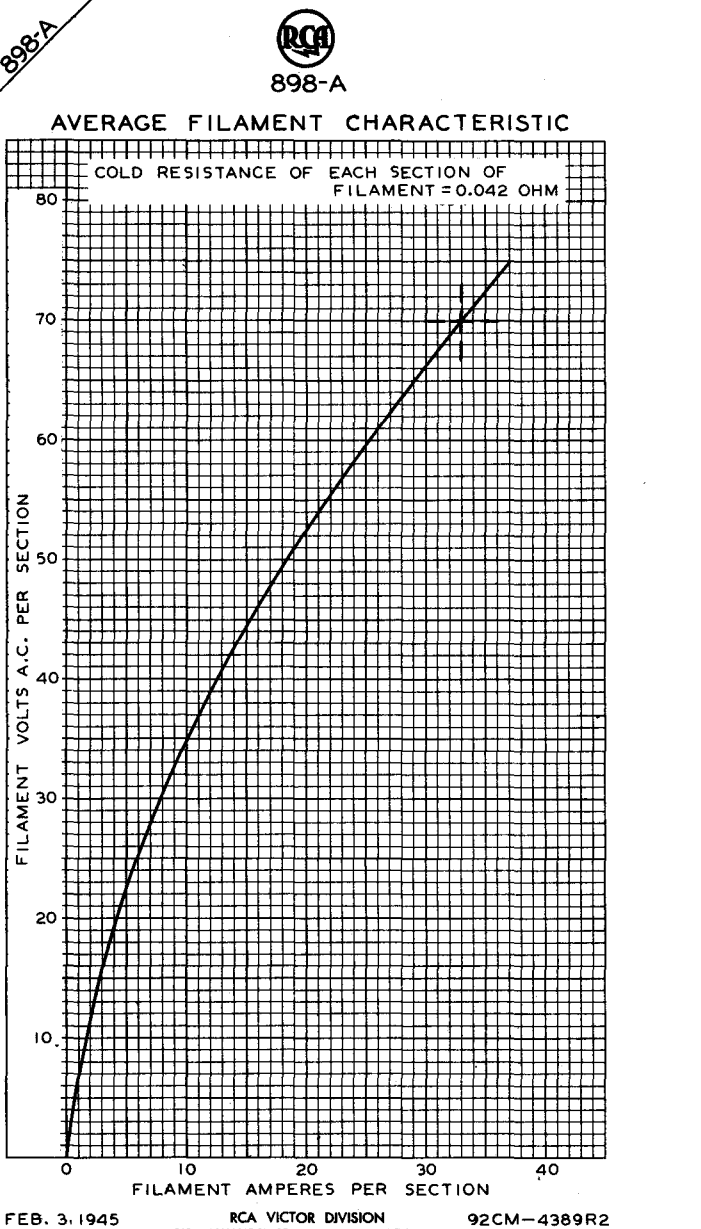
TRANSMITTING TRIODE



FILAMENT CONNECTIONS AND EXCITATION CIRCUITS

D-C FILAMENT EXCITATION	 V = 33 VOLTS A = 210 AMP.
SINGLE-PHASE A-C FILAMENT EXCITATION	 V = 33 VOLTS A = 210 AMP.
THREE-PHASE A-C FILAMENT EXCITATION	 V = 28.6 VOLTS A = 140 AMP.

898-A



FEB. 3, 1945

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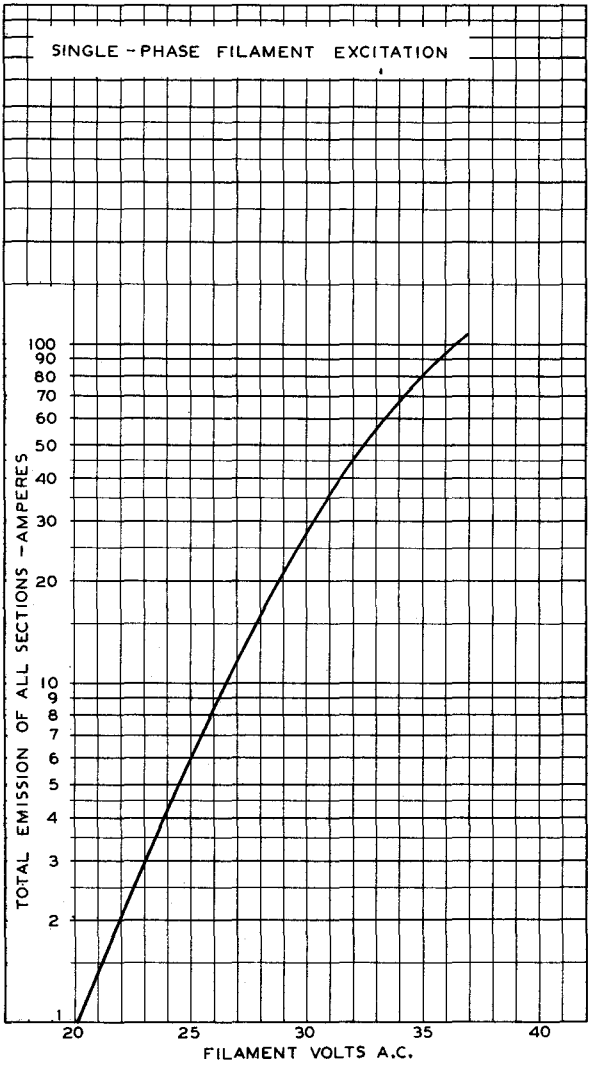
92CM—4389R2

898-A

AVERAGE FILAMENT-EMISSION CHARACTERISTIC



FEB. 8, 1945

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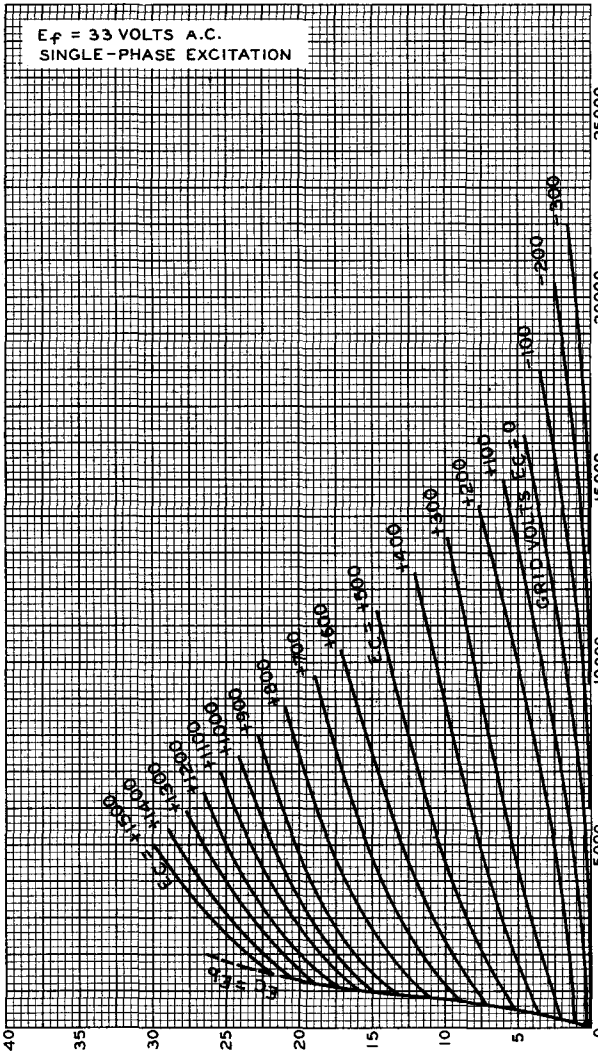
92CM-4390R3

898-A

898-A

AVERAGE PLATE CHARACTERISTICS



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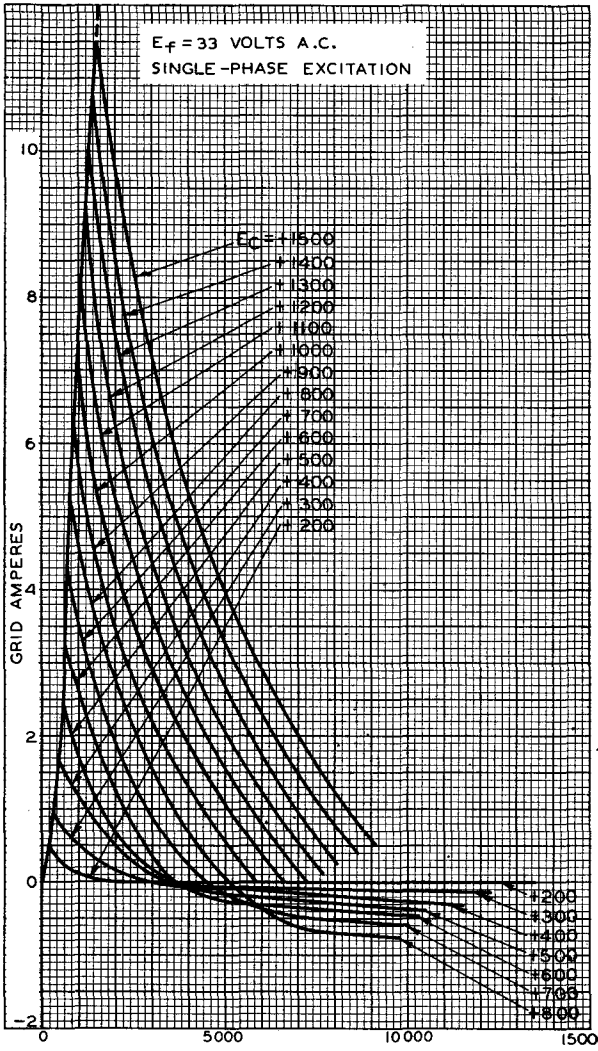
92CM-4383R2

898-A

TYPICAL CHARACTERISTICS



FEB. 9, 1945

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92CM-4384R2

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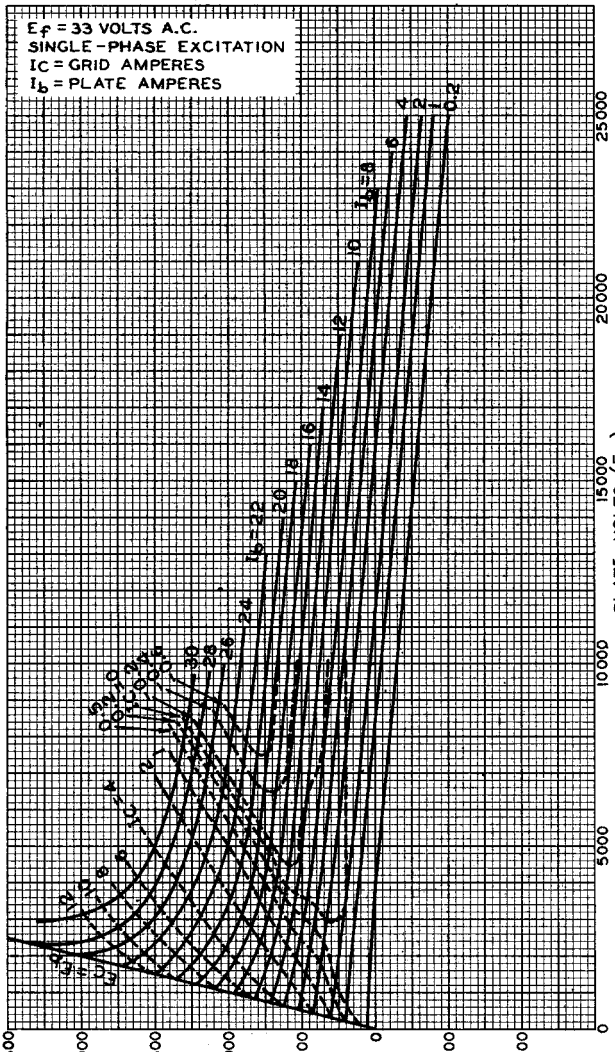
898-A

AVERAGE CONSTANT-CURRENT CHARACTERISTICS



FEB. 7, 1945

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92CM-6069R2