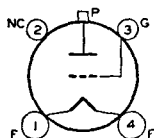
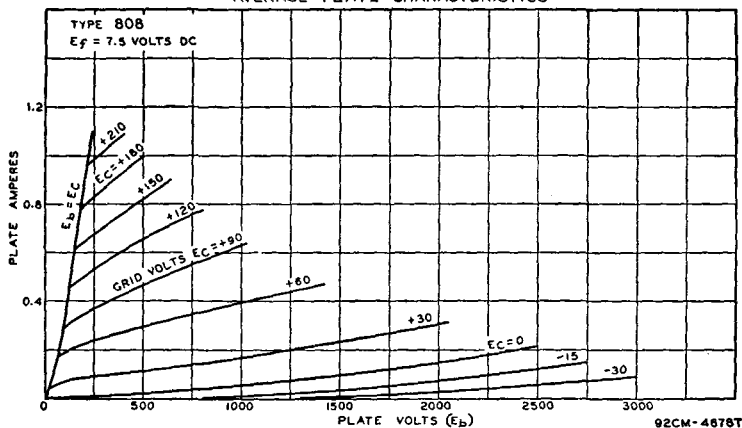


AVERAGE PLATE CHARACTERISTICS



POWER TRIODE

Thoriated-tungsten-filament type used as rf power amplifier and oscillator. May be used with full input up to 60 Mc and with reduced input up to 120 Mc. Class C Telephony maximum plate dissipation, CCS 25 watts, ICAS 30 watts.

809

FILAMENT VOLTAGE (AC/DC)	6.3	volts
FILAMENT CURRENT	2.5	amperes
AMPLIFICATION FACTOR	50	
DIRECT INTERELECTRODE CAPACITANCES:		
Grid to plate	6.7	μf
Grid to filament	5.7	μf
Plate to filament	0.9	μf

RF POWER AMPLIFIER AND OSCILLATOR—Class C Telephony#

and RF POWER AMPLIFIER—Class C FM Telephony

Maximum Ratings:	CCS	ICAS	
DC PLATE VOLTAGE	750 max	1000 max	volts
DC GRID VOLTAGE	-200 max	-200 max	volts
DC PLATE CURRENT	100 max	100 max	ma
DC GRID CURRENT	35 max	35 max	ma
PLATE INPUT	75 max	100 max	watts
PLATE DISSIPATION	25 max	30 max	watts

Typical Operation:

DC Plate Voltage	500	750	1000	volts
DC Grid Voltage [‡]	-50	-60	-75	volts
From grid resistor of	2500	3000	3000	ohms
From cathode resistor of	420	500	600	ohms
Peak RF Grid Voltage	135	140	160	volts
DC Plate Current	100	100	100	ma
DC Grid Current (Approx.)	20	20	25	ma
Driving Power (Approx.)	2.5	2.5	3.8	watts
Power Output (Approx.)	35	55	75	watts

Key-down conditions per tube without amplitude modulation. Amplitude modulation essentially negative may be used if the positive peak of the audio-frequency envelope does not exceed 115 per cent of the carrier conditions.

‡ Obtained from fixed supply, by grid resistor, by cathode resistor, or by combination methods.

OPERATING CONSIDERATIONS

Type 809 requires Small four-contact socket and may be mounted in vertical position with base down, or in horizontal position with pins 1 and 4 in vertical plane. OUTLINE 40, *Outlines* Section.

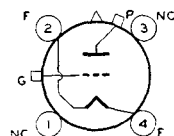
For operation at 70 Mc, plate voltage and plate input should be reduced to 88 per cent of maximum ratings; at 120 Mc, to 50 per cent. Plate shows no color when tube is operated at maximum CCS ratings, and shows a barely perceptible red color at maximum ICAS ratings.

When the 809 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 a plate voltage of 1000 volts, a fixed bias of at least -10 volts should be used.

POWER TRIODE

810

Thoriated-tungsten-filament type used as af power amplifier and modulator and as rf power amplifier and oscillator. May be used with full input up to 30 Mc and with reduced input



up to 100 Mc. Class C Telegraphy maximum plate dissipation, CCS 125 watts, ICAS 175 watts.

FILAMENT VOLTAGE (AC/DC)	10	volts
FILAMENT CURRENT	4.5	amperes
AMPLIFICATION FACTOR	36	
DIRECT INTERELECTRODE CAPACITANCES:		
Grid to plate	4.8	μf
Grid to filament	8.7	μf
Plate to filament	12	μf

AF POWER AMPLIFIER AND MODULATOR—Class B

Maximum Ratings:	CCS	ICAS	
DC PLATE VOLTAGE	2500 max	2750 max	volts
MAXIMUM-SIGNAL DC PLATE CURRENT [■]	250 max	250 max	ma
MAXIMUM-SIGNAL PLATE INPUT [■]	425 max	510 max	watts
PLATE DISSIPATION [■]	125 max	175 max	watts

Typical Operation (Values are for 2 tubes):

DC Plate Voltage	2000	2250	volts
DC Grid Voltage [†]	-50	-60	volts
Peak AF Grid-to-Grid Voltage	345	380	volts
Zero-Signal DC Plate Current	60	70	ma
Maximum-Signal DC Plate Current	420	450	ma
Effective Load Resistance (Plate to plate)	11000	11600	ohms
Maximum-Signal Driving Power (Approx.)	10	13	watts
Maximum-Signal Power Output (Approx.)	590	725	watts

[■] Averaged over any audio-frequency cycle of sine-wave form.

[†] For ac filament supply.

PLATE-MODULATED RF POWER AMPLIFIER—Class C Telephony

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

Maximum Ratings:	CCS	ICAS	
DC PLATE VOLTAGE	1600 max	2000 max	volts
DC GRID VOLTAGE	-500 max	-500 max	volts
DC PLATE CURRENT	210 max	250 max	ma
DC GRID CURRENT	70 max	75 max	ma
PLATE INPUT	335 max	500 max	watts
PLATE DISSIPATION	85 max	125 max	watts

Typical Operation:

DC Plate Voltage	1250	1600	2000	volts
DC Grid Voltage ^o	-200	-200	-350	volts
From grid resistor of	4000	4000	5000	ohms
Peak RF Grid Voltage	370	370	550	volts
DC Plate Current	210	210	250	ma