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TRANSMITTING TRIODE

Filament	Thoriated Tungsten	
Voltage	6.3	a-c or d-c volts
Current	4	amp.
Amplification Factor	29	
Direct Interelectrode Capacitances:		
Grid to Plate	5.3	μf
Grid to Filament	5.3	μf
Plate to Filament	0.8	μf
Maximum Overall Length		6-9/16"
Maximum Diameter		2-7/16"
Bulb		ST-19
Cap		Medium Metal
Base	Medium 4-Pin, "Micanol"	Bayonet
RCA Socket		UR-542-A

**MAXIMUM CCS and ICAS RATINGS
with TYPICAL OPERATING CONDITIONS**

CCS = Continuous Commercial Service

ICAS = Intermittent Commercial and Amateur Service

A-F POWER AMPLIFIER & MODULATOR - Class B

	<u>CCS</u>	<u>ICAS</u>	
D-C Plate Voltage	1250 max.	1500 max.	volts
Max.-Sig. D-C Plate Current*	125 max.	125 max.	ma.
Max.-Sig. Plate Input*	125 max.	150 max.	watts
Plate Dissipation*	40 max.	50 max.	watts

Typical Operation:

Unless otherwise specified, values are for 2 tubes

D-C Plate Voltage	1250	1500	volts
D-C Grid Voltage #	-36	-46	volts
Peak A-F Grid-to-Grid Volt.	210	232	volts
Zero-Sig. D-C Plate Current	48	42	ma.
Max.-Sig. D-C Plate Current	200	200	ma.
Max.-Sig. D-C Grid Current	18	25	ma.
Load Resistance (per tube)	3750	4500	ohms
Effective Load Resistance (plate to plate)	15000	18000	ohms
Max.-Sig. Driving Power	4.3 approx.	4.7 approx.	watts
Max.-Sig. Power Output	175 approx.	225 approx.	watts

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

R-F POWER AMPLIFIER - Class B Telephony

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

	<u>CCS</u>	<u>ICAS</u>	
D-C Plate Voltage	1250 max.	1500 max.	volts
D-C Plate Current	60 max.	60 max.	ma.
Plate Input	60 max.	75 max.	watts
Plate Dissipation	40 max.	50 max.	watts
Typical Operation:			
D-C Plate Voltage	1250	1500	volts

See next page.

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TENTATIVE DATA

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TRANSMITTING TRIODE

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	CCS	ICAS	
D-C Grid Voltage #	-35	-45	volts
Peak R-F Grid Voltage	46	51	volts
D-C Plate Current	48	50	ma.
D-C Grid Current **	1 approx.	1.1 approx.	ma.
Driving Power ** 0	1.2 approx.	1.5 approx.	watts
Power Output	20 approx.	25 approx.	watts

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

Grid voltages are given with respect to the mid-point of filament operated on a.c. If d.c. is used, each stated value of grid voltage should be decreased by 3.2 volts and circuit returns made to negative filament terminal.

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

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

	CCS	ICAS	
D-C Plate Voltage	1000 max.	1250 max.	volts
D-C Grid Voltage	-200 max.	-200 max.	volts
D-C Plate Current	105 max.	125 max.	ma.
D-C Grid Current	25 max.	25 max.	ma.
Plate Input	105 max.	155 max.	watts
Plate Dissipation	27 max.	40 max.	watts

Typical Operation:

D-C Plate Voltage	1000	1250	volts
D-C Grid Voltage □	{ -100 4000	{ -125 5000	{ volts ohms
Peak R-F Grid Voltage	180	245	volts
D-C Plate Current	105	125	ma.
D-C Grid Current **	25 approx.	25 approx.	ma.
Driving Power **	4.5 approx.	6 approx.	watts
Power Output	82 approx.	120 approx.	watts

□ obtained preferably from grid leak of value shown, or combination of grid-leak 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 **

	CCS	ICAS	
D-C Plate Voltage	1250 max.	1500 max.	volts
D-C Grid Voltage	-200 max.	-200 max.	volts
D-C Plate Current	125 max.	150 max.	ma.
D-C Grid Current	35 max.	35 max.	ma.
Plate Input	155 max.	225 max.	watts
Plate Dissipation	40 max.	55 max.	watts

Typical Operation:

D-C Plate Voltage	1250	1500	volts
D-C Grid Voltage ‡	{ -125 5000 835	{ -175 7000 1000	{ volts ohms ohms

‡ obtained from fixed supply, by grid resistor (5000, 7000), or by cathode resistor (835, 1000).

#, **: See next page.

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	<u>CCS</u>	<u>ICAS</u>	
Peak R-F Grid Voltage	215	285	volts
D-C Plate Current	125	150	ma.
D-C Grid Current **	25 approx.	25 approx.	ma.
Driving Power **	5 approx.	6.5 approx.	watts
Power Output	116 approx.	170 approx.	watts

** 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.

NOTE: When the 812 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 1500 volts, a fixed bias of at least -45 volts should be used.

SELF-RECTIFYING OSCILLATOR - Class C

	<u>CCS</u>	
A-C Plate Voltage (RMS)	1500 max.	volts
D-C Grid Voltage	-125 max.	volts
D-C Plate Current	75 max.	ma.
D-C Grid Current	20 max.	ma.
Plate Input	125 max.	watts
Plate Dissipation	40 max.	watts

Typical Operation in Push-Pull Circuit at 50 Mc:

Unless otherwise specified, values are for 2 tubes

A-C Plate Voltage (RMS)	1500	volts
Grid Resistor	5000	ohms
D-C Plate Current	150	ma.
D-C Grid Current	25 approx.	ma.
Power Output [▲]	170 approx.	watts

▲ If circuit efficiency is 80%, useful power output is 140 watts.

Data on operating frequencies for the 812 are given on the sheet TRANS. TUBE RATINGS vs FREQUENCY.

OUTLINE DRAWING, SOCKET CONNECTIONS, and MOUNTING POSITION are the same as for Type 809

← Indicates a change.

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DATA 2



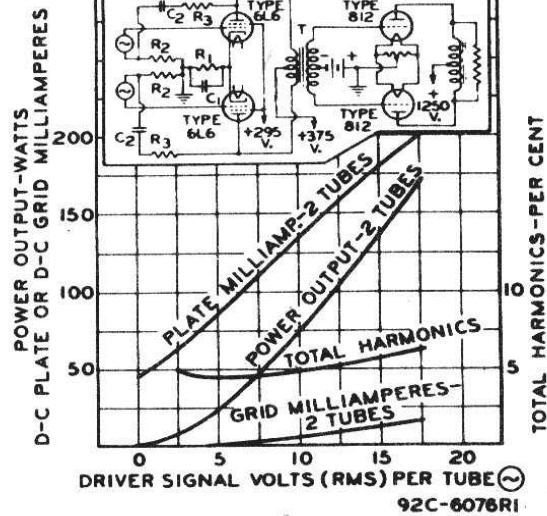
TRANSMITTING TRIODE

OPERATION CHARACTERISTICS

$E_f = 6.3$ VOLTS A.C. FOR 812'S AND 6L6'S

INPUT: CLASS AB₁ - TWO TYPE 6L6'S IN INVERSE FEEDBACK CIRCUIT, PLATE-SUPPLY VOLTS = 375, SCREEN-SUPPLY VOLTS = 295, CATHODE-BIAS RESISTOR (R_1) = 200 OHMS, $R_2 = 0.05$ MEG., $R_3 = 0.1$ MEG., $C_1 = 20 \mu F$, $C_2 = 0.1 \mu F$
INTERSTAGE TRANSFORMER (T): VOLT RATIO-PRIM. = 2.4, PEAK POWER EFF. = 85%

1/2 SEC.
OUTPUT: CLASS B - TWO TYPE 812'S, PLATE VOLTS = 1250, GRID VOLTS = -36, LOAD, PLATE-TO-PLATE = 15000 OHMS

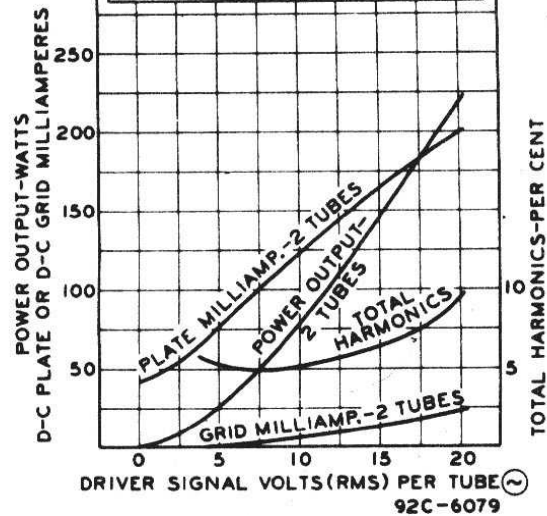


OPERATION CHARACTERISTICS

$E_f = 6.3$ VOLTS A.C. FOR 812'S AND 6L6'S

CIRCUIT CONDITIONS

INPUT: INTERSTAGE TRANSFORMER (T): SAME AS ON DWG. 92C-6076R1 UNDER 812
OUTPUT: CLASS B - TWO TYPE 812'S
PLATE VOLTS = 1500
GRID VOLTS = -46
LOAD, PLATE-TO-PLATE = 18000 OHMS





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AVERAGE PLATE CHARACTERISTICS

