

RCA Transmitting Tubes

RF POWER AMPLIFIER AND OSCILLATOR—Class C Telegraphy#

and

RF POWER AMPLIFIER—Class C FM Telephony

Maximum CCS Ratings:

DC PLATE VOLTAGE.....	4000 max	volts
DC GRID-NO.2 (SCREEN-GRID) VOLTAGE.....	500 max	volts
DC GRID-NO.1 (CONTROL-GRID) VOLTAGE.....	-500 max	volts
DC PLATE CURRENT.....	350 max	ma
GRID-NO.2 INPUT.....	30 max	watts
GRID-NO.1 INPUT.....	10 max	watts
PLATE DISSIPATION.....	500 max	watts

Typical Operation at 110 Mc:

DC Plate Voltage.....	2500	3000	4000	volts
DC Grid-No.2 Voltage.....	500	500	500	volts
DC Grid-No.1 Voltage.....	-150	-150	-150	volts
DC Plate Current.....	310	310	315	ma
DC Grid-No.2 Current.....	26	24	22	ma
DC Grid-No.1 Current.....	15	16	16	ma
Driving Power (Approx.).....	5	5	5	watts
Useful Power Output (Approx.).....	475	600	835	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.

OPERATING CONSIDERATIONS

Type 4X500A may be mounted in vertical position only, base up or down. *OUTLINE 73, Outlines Section.*

Adequate forced-air cooling must be provided to limit the temperature of the metal-to-glass seals and the radiator core to 150°C. Forced-air cooling must start before filament voltage is applied, and must be continued until all voltages have been removed from the tube. A minimum air flow of 40 cubic feet per minute is required when the tube is operated at maximum CCS ratings.

BEAM POWER TUBE

See type 4E27A/5-125B.

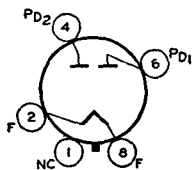
5-125B

BEAM POWER TUBE

See type 4-250A/5D22.

5D22

FULL-WAVE VACUUM RECTIFIER



Coated-filament type used in power supply of transmitting and industrial equipment. Rated for a maximum peak inverse plate voltage of 2800 volts and maximum peak plate current of

5R4-GY

650 milliamperes at altitudes up to 20,000 feet, it may be used at altitudes up to 40,000 feet with reduced plate voltages. Requires Octal socket and may be mounted in vertical position, base up or down, or in horizontal position with pins 1 and 4 in vertical plane. *OUTLINE 28, Outlines Section.*

FILAMENT VOLTAGE (AC/DC).....	5	volts
FILAMENT CURRENT.....	2	amperes
TUBE VOLTAGE DROP (Approx.):		
Measured with applied dc at 250 milliamperes per plate.....	67	volts

FULL-WAVE RECTIFIER

	For Altitudes up to 40000 Feet		For Altitudes up to 20000 Feet	
Maximum Ratings, Design-Center Values:				
PEAK INVERSE PLATE VOLTAGE (No load)...	2100 max	2400 max	2800 max	volts
PEAK PLATE CURRENT (Per plate).....	650 max	650 max	650 max	ma

DC OUTPUT CURRENT:

With capacitor input to filter.....	250 max	175 max	150 max	ma
With choke input to filter.....	250 max	250* max	175* max	ma

Typical Operation with Capacitor-Input Filter:

RMS Plate-to-Plate Supply Voltage:

Full load.....	1400	1500	1800	volts
No Load.....	1500	1700	2000	volts
Filter Input Capacitor.....	4	4	4	μ f
Total Effective Plate-Supply Impedance (Per plate) ^A	125	500	575	ohms
DC Output Current.....	250	150	150	ma
DC Output Voltage at Input to Filter (Approx.):				
At Half Load.....	790	900	1060	volts
At Full Load.....	700	810	950	volts
Voltage Regulation, Half-Load to Full-Load Current (Approx.).....	90	90	110	volts

Typical Operation with Choke-Input Filter:

RMS Plate-to-Plate Supply Voltage:

Full Load.....	1500	1900	volts
No Load.....	1700	2000	volts
Filter Input Choke.....	5	10	henries
DC Output Current.....	250	175	ma
DC Output Voltage at Input to Filter (Approx.):			
At Half Load.....	590	810	volts
At Full Load.....	550	750	volts
Voltage Regulation, Half-Load to Full-Load Current (Approx.).....	40	60	volts

* For choke not less than 5 henries.

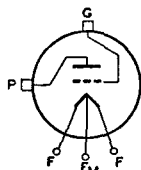
^A For choke not less than 10 henries.

^A Indicated values for conditions shown will limit peak plate current to maximum rated value. When a filter-input capacitor larger than 4 microfarads is used, it may be necessary to use more plate-supply impedance than the value shown to limit the peak plate current to the rated value.

POWER TRIODE

6C24

Forced-air-cooled type having integral radiator used as af power amplifier and modulator and as rf power amplifier and oscillator at frequencies up to 160 Mc. Maximum over-all length, 8-23/32 inches; maximum diameter, 1-29/32 inches. Filament volts (ac/dc), 11.0; amperes, 12.1; starting current, 24 max amperes. Direct interelectrode capacitances; grid to plate, 4.4 μ f; grid to filament, 4.6 μ f; plate to fila-

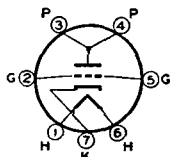


ment, 3.2 μ f. Maximum CCS ratings as RF POWER AMPLIFIER AND OSCILLATOR: dc plate volts, 3000 max; dc grid volts, -500 max; dc plate milliamperes, 500 max; dc grid milliamperes, 150 max; plate input, 1500 max watts; plate dissipation 600 max watts. The 6C24 is a DISCONTINUED type listed for reference only. As a replacement, the 5786 is a similar type although not directly interchangeable because of either electrical and/or mechanical differences.

POWER TRIODE

6F4

Acorn type having heater-cathode used as rf power amplifier and oscillator at frequencies up to 1200 Mc. Class C Telegraphy maximum plate dissipation (design-center value), 2 watts.



VIEWS FROM SHORT END

Requires Acorn radial 7-contact socket and may be mounted in any position. OUTLINE 1, Outlines Section. Plate shows no color when tube is operated at maximum CCS ratings.

HEATER VOLTAGE (AC/DC).....	6.3	volts
HEATER CURRENT.....	0.225	ampere
TRANSCONDUCTANCE*.....	5800	umhos
AMPLIFICATION FACTOR*.....	17	
PLATE RESISTANCE (Approx.)*.....	2900	ohms