

Operating Frequency Drift:

Maximum Frequency Drift:

For heater-voltage range of 5.2 to 6.6 volts, plate-voltage range of 95 to 117 volts, and ambient-temperature range of +22° to -40°C.....

+4 to -1

Mc

OPERATING CONSIDERATIONS

Type 6562 may be mounted in any position. *OUTLINE 68, Outlines Section.*

The flexible heater leads of the 6562 are usually soldered to the circuit elements. Soldering of these connections should not be made closer than $\frac{3}{4}$ " from the end of the tube (excluding cathode tab). If this precaution is not followed, the heat of the soldering operation may crack the glass seals of the leads and damage the tube. Under no circumstances should any of the electrodes be soldered to the circuit elements. Connections to the electrodes should be made by spring contact only.

The 6562 should be supported by a suitable clamp around the metal shell either above or below the frequency-adjustment screw. It is essential, however, that the pressure exerted on the shell by the clamp be held to a minimum because excessive pressure can distort the resonators and result in a change of frequency.

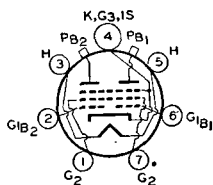
The plate connection should have a flexible lead which will accommodate variations in the relative position of the plate terminal in individual tubes.

The 6562 may be mechanically tuned by adjustment of the frequency-adjustment screw located on the metal shell of the tube. A clockwise rotation of the frequency-adjustment screw will decrease the frequency, while a counterclockwise rotation will increase the frequency. The range of adjustment provided by the screw is ± 12 megacycles.

TWIN BEAM POWER TUBE

6850

Small, sturdy, heater-cathode type used as af power amplifier and modulator, as push-pull rf power amplifier and oscillator, and as frequency tripler. May be used with full input up

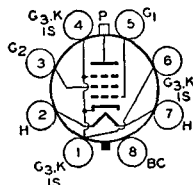


to 100 Mc and with reduced input up to 470 Mc. Class C Telegraphy maximum plate dissipation (per tube), CCS 20 watts, ICAS 25 watts. Requires Septar seven-contact socket and may be mounted in any position. *OUTLINE 14, Outlines Section.* Heater volts (ac/dc), $12.6 \pm 10\%$; amperes, 0.625. Except for heater rating, the 6850 is identical with type 6524.

BEAM POWER TUBE

6883

Small, sturdy, glass-octal heater-cathode type used as af power amplifier and modulator and as rf power amplifier and oscillator. May be used with full input up to 60 Mc and with

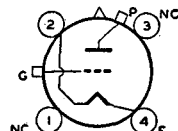


reduced input up to 175 Mc. Class C Telegraphy maximum plate dissipation, CCS 20 watts, ICAS 25 watts. Requires Octal socket and may be mounted in any position. *OUTLINE 17, Outlines Section.* Heater volts (ac/dc), $12.6 \pm 10\%$; amperes, 0.625. Except for heater rating, the 6883 is identical with type 6146.

POWER TRIODE

8000

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.

RCA Transmitting Tubes

FILAMENT VOLTAGE (AC/DC)	10	volts
FILAMENT CURRENT	4.5	amperes
AMPLIFICATION FACTOR	16.5	
DIRECT INTERELECTRODE CAPACITANCES:		
Grid to plate	6.4	μf
Grid to filament	5.0	μf
Plate to filament	3.3	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	-120	-130	volts
Peak AF Grid-to-Grid Voltage	520	560	volts
Zero-Signal DC Plate Current	60	65	ma
Maximum-Signal DC Plate Current	425	450	ma
Effective Load Resistance (Plate to plate)	10800	12000	ohms
Maximum-Signal Driving Power (Approx.)	6.5	7.9	watts
Maximum-Signal Power Output (Approx.)	600	725	watts

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

* 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	40 max	45 max	ma
PLATE INPUT	335 max	500 max	watts
PLATE DISSIPATION	85 max	125 max	watts

Typical Operation:

DC Plate Voltage	1600	2000	volts
DC Grid Voltage ϕ	-300	-370	volts
From grid resistor of	15000	10000	volts
Peak RF Grid Voltage	470	630	volts
DC Plate Current	210	250	ma
DC Grid Current (Approx.)	20	37	ma
Driving Power (Approx.)	8.5	20	watts
Power Output (Approx.)	250	380	watts

ϕ Obtained from grid resistor of value shown or from a combination of grid resistor with either fixed supply or cathode resistor.

RF POWER AMPLIFIER AND OSCILLATOR—Class C Telegraphy[#] and

RF POWER AMPLIFIER—Class C FM Telephony

Maximum Ratings:	CCS	ICAS	
DC PLATE VOLTAGE	2000 max	2500 max	volts
DC GRID VOLTAGE	-500 max	-500 max	volts
DC PLATE CURRENT	250 max	300 max	ma
DC GRID CURRENT	40 max	45 max	ma
PLATE INPUT	500 max	750 max	watts
PLATE DISSIPATION	125 max	175 max	watts

Typical Operation:

DC Plate Voltage	2000	2500	volts
DC Grid Voltage ϕ	-195	-240	volts
From grid resistor of	8100	6000	ohms
From cathode resistor of	710	700	ohms
Peak RF Grid Voltage	370	480	volts
DC Plate Current	250	300	ma
DC Grid Current (Approx.)	24	40	ma

RCA Transmitting Tubes

Driving Power (Approx.).....	8	18	watts
Power Output (Approx.).....	375	575	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.

SELF-RECTIFYING OSCILLATOR—Class C

With separate, rectified, unfiltered, single-phase, full-wave plate supply

Maximum Ratings:

DC PLATE VOLTAGE.....	1800 max	volts
DC GRID VOLTAGE.....	-300 max	volts
DC PLATE CURRENT.....	225 max	ma
DC GRID CURRENT.....	35 max	ma
PLATE INPUT.....	500 max	watts
PLATE DISSIPATION.....	125 max	watts

Typical Push-Pull Operation at 30 Mc (Values are for 2 tubes):

DC Plate Voltage.....	1800	volts
Grid Resistor.....	5000	ohms
DC Plate Current.....	450	ma
DC Grid Current*.....	35	ma
Power Output (Approx.).....	700	watts
Useful Power Output (Approx.)—85-per-cent circuit efficiency.....	600	watts

* For full-load operation. Under no-load operation, grid current and grid voltage should not exceed maximum ratings.

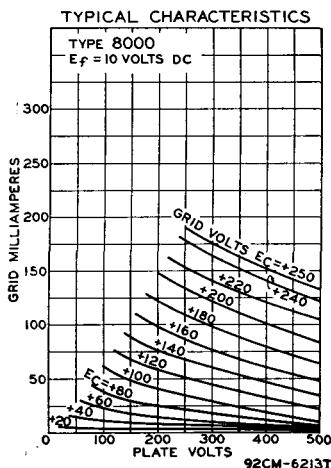
OPERATING CONSIDERATIONS

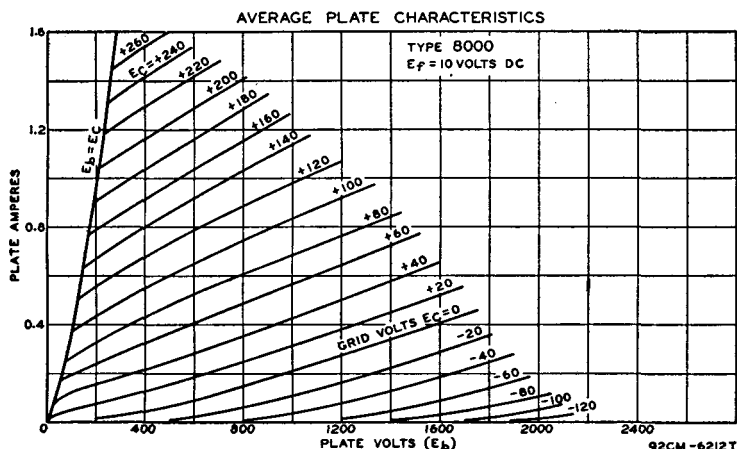
Type 8000 requires Jumbo four-contact socket and may be mounted in vertical position with base down, or in horizontal position with pins 1 and 2 in vertical plane. OUTLINE 53, *Outlines* Section.

For operation at 60 Mc, plate voltage and plate input should be reduced to 70 per cent of maximum ratings; at 100 Mc, to 50 per cent.

When the 8000 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 2500 volts, a fixed bias of at least -140 volts should be used.

Plate shows a barely perceptible red color when tube is operated at maximum CCS ratings and a cherry-red color at maximum ICAS ratings.



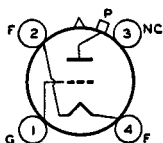


BEAM POWER TUBE

See type 4E27/8001.

8001

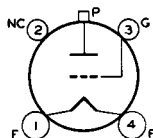
POWER TRIODE



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 50 Mc. Requires Jumbo four-contact socket and may be mounted in vertical position with base down, or in horizontal position with pins 1 and 3 in vertical plane. OUTLINE 50, *Outlines* Section. For operation at 50 Mc,

8003

plate voltage and plate input should be reduced to 83 per cent of maximum ratings. Filament volts (ac/dc), 10; amperes, 3.25. Direct interelectrode capacitances: grid to plate, 11.7 μf ; grid to filament, 5.8 μf ; plate to filament, 3.4 μf . Maximum CCS ratings as AF POWER AMPLIFIER AND MODULATOR: dc plate volts, 1350 max; maximum-signal dc plate milliamperes, 250 max; maximum-signal plate input, 330 max watts; plate dissipation, 100 max watts. Maximum CCS ratings as RF POWER AMPLIFIER AND OSCILLATOR: dc plate volts, 1350 max; dc grid volts, -400 max; dc plate milliamperes, 250 max; dc grid milliamperes, 50 max; plate input, 330 max watts; plate dissipation, 100 max watts. Plate shows no color when tube is operated at maximum CCS ratings. The 8003 is used principally for renewal purposes.



POWER TRIODE

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 60 Mc and with reduced input

8005

up to 100 Mc. Class C Telegraphy maximum plate dissipation, CCS 75 watts, ICAS 85 watts.

FILAMENT VOLTAGE (AC/DC)	10	volts
FILAMENT CURRENT	3.25	amperes
AMPLIFICATION FACTOR*	20	
DIRECT INTERELECTRODE CAPACITANCES:		
Grid to plate	5.0	μf
Grid to filament	6.4	μf
Plate to filament	1.0	μf

*Grid volts, 50; plate amperes, 0.5.