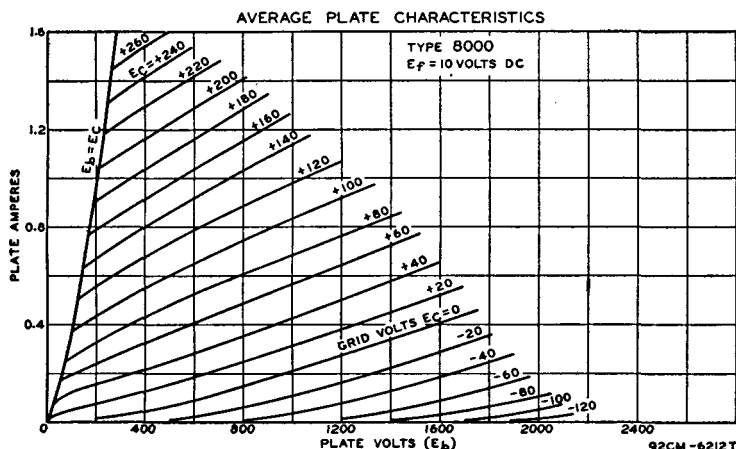


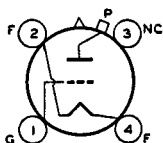


BEAM POWER TUBE

See type 4E27/8001.

8001

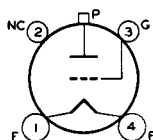
POWER TRIODE



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.

RCA Transmitting Tubes

AF POWER AMPLIFIER AND MODULATOR—Class B

Maximum Ratings:

	CCS	ICAS	
DC PLATE VOLTAGE.....	1250 max	1500 max	volts
MAXIMUM-SIGNAL DC PLATE CURRENT [■]	200 max	200 max	ma
MAXIMUM-SIGNAL PLATE INPUT [■]	225 max	250 max	watts
PLATE DISSIPATION [■]	75 max	85 max	watts

Typical Operation (Values are for 2 tubes):

DC Plate Voltage.....	1250	1500	volts
DC Grid Voltage [†]	-55	-67.5	volts
Peak AF Grid-to-Grid Voltage.....	290	330	volts
Zero-Signal DC Plate Current.....	40	40	ma
Maximum-Signal DC Plate Current.....	320	330	ma
Effective Load Resistance (Plate to plate).....	8000	9800	ohms
Maximum-Signal Driving Power (Approx.).....	4	5.5	watts
Maximum-Signal Power Output (Approx.).....	250	330	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.....	1000 max	1250 max	volts
DC GRID VOLTAGE.....	-200 max	-200 max	volts
DC PLATE CURRENT.....	160 max	200 max	ma
DC GRID CURRENT.....	45 max	45 max	ma
PLATE INPUT.....	160 max	240 max	watts
PLATE DISSIPATION.....	50 max	75 max	watts

Typical Operation:

DC Plate Voltage.....	1000	1250	volts
DC Grid Voltage ^δ	-195	-195	volts
From grid resistor of.....	7000	7000	ohms
Peak RF Grid Voltage.....	350	350	volts
DC Plate Current.....	160	190	ma
DC Grid Current (Approx.).....	28	28	ma
Driving Power (Approx.).....	9	9	watts
Power Output (Approx.).....	115	170	watts

δ Obtained from grid resistor of value shown or from a combination of grid resistor and fixed supply.

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

and

RF POWER AMPLIFIER—Class C FM Telephony

Maximum Ratings:

	CCS	ICAS	
DC PLATE VOLTAGE.....	1250 max	1500 max	volts
DC GRID VOLTAGE.....	-200 max	-200 max	volts
DC PLATE CURRENT.....	200 max	200 max	ma
DC GRID CURRENT.....	45 max	45 max	ma
PLATE INPUT.....	240 max	300 max	watts
PLATE DISSIPATION.....	75 max	85 max	watts

Typical Operation:

DC Plate Voltage.....	1250	1500	volts
DC Grid Voltage [‡]	-115	-130	volts
From grid resistor of.....	3800	4000	ohms
From cathode resistor of.....	520	560	ohms
Peak RF Grid Voltage.....	240	255	volts
DC Plate Current.....	190	200	ma
DC Grid Current (Approx.).....	30	32	ma
Driving Power (Approx.).....	6.5	7.5	watts
Power Output (Approx.).....	170	220	watts

[#] Key-down conditions per tube without amplitude modulation. Amplitude modulation essentially negative may be used provided 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 OR AMPLIFIER—Class C

Maximum CCS Ratings:

RMS PLATE VOLTAGE.....	1750 max	volts
DC GRID VOLTAGE.....	-125 max	volts
DC PLATE CURRENT.....	125 max	ma
DC GRID CURRENT.....	25 max	ma
PLATE INPUT.....	240 max	watts
PLATE DISSIPATION.....	75 max	watts

Typical Push-Pull Operation at 50 Mc (Values are for 2 tubes):

RMS Plate Voltage.....	1750	volts
Grid Resistor.....	2000	ohms
DC Plate Current.....	250	ma
DC Grid Current (At full load).....	35	ma
Power Output (Approx.).....	330	watts
Useful Power Output (Approx.)—75-per-cent circuit efficiency.....	250	watts

AMPLIFIER OR OSCILLATOR—Class C

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

Maximum CCS Ratings:

DC PLATE VOLTAGE.....	1125 max	volts
DC GRID VOLTAGE.....	-125 max	volts
DC PLATE CURRENT.....	180 max	ma
DC GRID CURRENT.....	40 max	ma
PLATE INPUT.....	240 max	watts
PLATE DISSIPATION.....	75 max	watts

Typical Push-Pull Operation at 27 Mc (Values are for 2 tubes):

DC Plate Voltage.....	1100	volts
Grid Resistor.....	2000	ohms
DC Plate Current.....	360	ma
DC Grid Current (At full load).....	40	ma
Power Output (Approx.).....	330	watts
Useful Power Output (Approx.)—85-per-cent circuit efficiency.....	280	watts

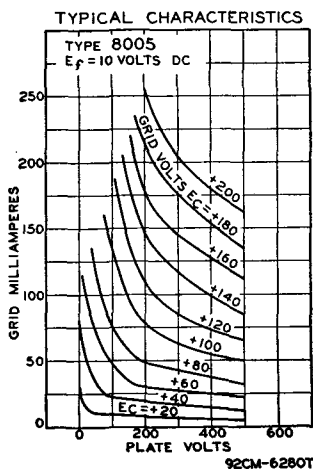
OPERATING CONSIDERATIONS

Type 8005 requires Small four-contact socket and may be mounted in vertical position with base down, or in horizontal position with pins 2 and 3 in vertical plane. OUTLINE 42, *Outlines* Section.

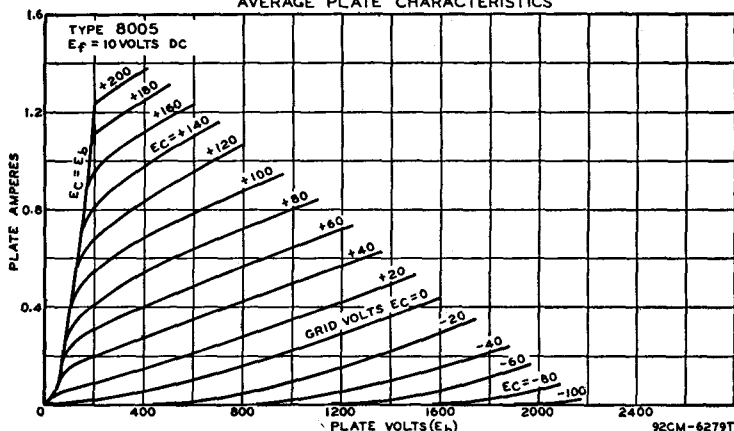
For operation at 80 Mc, plate voltage and plate input should be reduced to 75 per cent of maximum ratings; at 100 Mc, to 60 per cent.

When the 8005 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 1500 volts, a fixed bias of at least -50 volts should be used.

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



AVERAGE PLATE CHARACTERISTICS

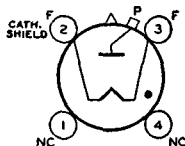


HALF-WAVE MERCURY-VAPOR RECTIFIER

8008

Coated-filament type used in power supply of transmitting and industrial equipment. Maximum peak inverse anode volts, 10,000; maximum average anode amperes, 1.25. Requires

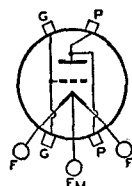
Super-Jumbo four-contact socket and may be mounted in vertical position only, base down. OUTLINE 54, *Outlines* Section. Except for physical dimension and base, the 8008 is identical to type 872-A.



POWER TRIODE

8012-A

Thoriated-tungsten-filament type having filament mid-tap used as rf power amplifier and oscillator. May be used with full input up to 500 Mc. For operation at 600 Mc, plate voltage should be reduced to 70 per cent of maximum rating. May be mounted in vertical position only, filament end down or up. OUTLINE 18, *Outlines* Section. Forced-air cooling is required when plate dissipation exceeds 75 per cent of



the maximum rated value. Plate shows an orange-red color when tube is operated at maximum CCS ratings. The 8012-A is used principally for renewal purposes.

FILAMENT VOLTAGE (AC/DC)	6.3	volts
FILAMENT CURRENT	1.92	amperes
AMPLIFICATION FACTOR	18	
DIRECT INTERELECTRODE CAPACITANCES:		
Grid to plate	2.5	μf
Grid to filament mid-tap	2.7	μf
Plate to filament mid-tap	0.4	μf

Maximum CCS Ratings:

DC PLATE VOLTAGE	800 max
DC GRID VOLTAGE	-200 max
DC PLATE CURRENT	65 max
DC GRID CURRENT	20 max

Class C Telephony*

800 max
-200 max
65 max
20 max

Class C Telegraphy#

1000 max	volts
-200 max	volts
80 max	ma
20 max	ma