

RCA Transmitting Tubes

DC GRID CURRENT.....	50 <i>max</i>	ma
DC CATHODE CURRENT.....	125 <i>max</i>	ma
GRID INPUT.....	2 <i>max</i>	watts
PLATE DISSIPATION.....	100 <i>max</i>	watts

Typical Operation as Amplifier in Cathode-Drive Circuit at 500 Mc:

DC Plate Voltage.....	800	volts
DC Grid Voltage.....	-45	volts
DC Plate Current.....	80	ma
DC Grid Current (Approx.).....	35	ma
Driver Power Output (Approx.).....	6	watts
Useful Power Output (Approx.).....	27	watts

Typical Operation as Oscillator at 2500 Mc:

DC Plate Voltage.....	900	volts
DC Grid Voltage (Approx.).....	-22	volts
DC Plate Current.....	90	ma
DC Grid Current (Approx.).....	27	ma
Useful Power Output (Minimum).....	12	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

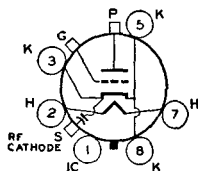
Type 2C39-A, with its ring-type seals of graduated diameters, is useful either in cavity or parallel-line circuits of compact fixed and mobile equipment. Requires special mounting which should support the tube by the plate-terminal flange only. May be mounted in any position. Flexible connectors of the spring-contact type are required for all terminal connections. OUTLINE 69, *Outlines* Section.

Cooling of the 2C39-A is accomplished by passing a stream of clean air through the radiator and by directing streams of air onto the cathode and heater seals, the grid seal, and the plate seal. Adequate air must be provided to prevent the temperature of the seals and radiator from exceeding 175°C.

LIGHTHOUSE TRIODE

2C40

Disk-seal type used as rf amplifier at frequencies up to 1200 Mc and as cw oscillator at frequencies up to 3370 Mc. Requires Octal socket and may be mounted in any position. OUTLINE 7, *Outlines* Section. Heater volts (ac/dc), 6.3; amperes, 0.75. Direct interelectrode capacitances: grid to plate, 1.3 μf ; grid to cathode, shell, and heater, 2.1 μf ; plate to cathode, shell, and heater, (with shield having diameter of 2 3/8

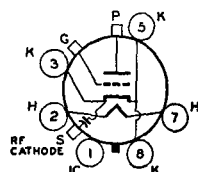


inches in plane of grid-disk terminal), 0.03 *max* μf ; cathode to shell, 70 μf . Maximum CCS ratings as RF POWER AMPLIFIER AND OSCILLATOR, CLASS C TELEGRAPHY: dc plate volts, 500 *max*; dc plate milliamperes, 25 *max*; plate dissipation, 6.5 *max* watts; peak heater-cathode volts, $\approx$ 90 *max*. Characteristics as CLASS A₁ AMPLIFIER: plate-supply volts, 250; cathode resistor, 200 ohms; plate milliamperes, 17.5; transconductance, 5000 μmhos ; amplification factor, 36; plate resistance (approx.), 7200 ohms. The 2C40 is used principally for renewal purposes.

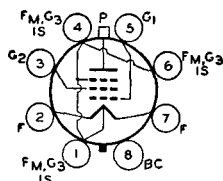
LIGHTHOUSE TRIODE

2C43

Disk-seal type used as rf amplifier and cw oscillator at frequencies up to 1500 Mc. OUTLINE 10, *Outlines* Section. Requires Octal socket and may be mounted in any position. Heater volts (ac/dc), 6.3; amperes, 0.9. Direct interelectrode capacitances: grid to plate, 1.7 μf ; grid to cathode, shell, and heater, 2.8 μf ; plate to cathode, shell, and heater (with shield having diameter of 2 3/8 inches in plane of grid-disk



terminal), 0.05 *max* μ f; cathode to shell, 70 μ f. Maximum CCS ratings as RF POWER AMPLIFIER AND OSCILLATOR, CLASS C TELEGRAPHY: dc plate volts, 500 *max*; dc plate milliamperes, 40 *max*; plate dissipation, 12 *max* watts; peak heater-cathode volts, $\approx$ 90 *max*. Characteristics as CLASS A₁ AMPLIFIER: plate-supply volts, 250; cathode resistor, 100 ohms; plate milliamperes, 20; transconductance, 8000 μ hos; amplification factor, 48; plate resistance (approx.) 5600 ohms. The 2C43 is used principally for renewal purposes.



BEAM POWER TUBE

Glass-octal type having quick-heating coated filament used as af power amplifier and modulator and as rf power amplifier and oscillator in mobile- and emergency-communications

2E24

equipment. May be used with full input up to 125 Mc and with reduced input up to 175 Mc. Class C Telephony maximum plate dissipation, CCS 10 watts, ICAS 13.5 watts.

FILAMENT VOLTAGE (AC/DC).....	6.3 $\pm$ 10%	volts
FILAMENT CURRENT.....	0.65	ampere
FILAMENT HEATING TIME.....	less than 2	seconds
TRANSCONDUCTANCE*.....	3200	μ hos
MU-FACTOR, Grid No.2 to Grid No.1**.....	7.5	
DIRECT INTERELECTRODE CAPACITANCES:		
Grid No.1 to plate.....	0.11 <i>max</i>	μ f
Grid No.1 to filament mid-tap, grid No.3, internal shield, grid No.2, and base sleeve.....	8.5	μ f
Plate to filament mid-tap, grid No.3, internal shield, grid No.2, and base sleeve.....	6.5	μ f
BULB TEMPERATURE (At hottest point).....	210 <i>max</i>	$^{\circ}$ C

* Plate volts, 500; grid-No.2 volts, 200; plate milliamperes, 16.

** Plate and grid-No.2 volts, 200; plate milliamperes, 16.

AF POWER AMPLIFIER AND MODULATOR—Class AB₂

Maximum Ratings:	CCS	ICAS	
DC PLATE VOLTAGE.....	400 <i>max</i>	500 <i>max</i>	volts
DC GRID-NO.2 (SCREEN-GRID) VOLTAGE.....	200 <i>max</i>	200 <i>max</i>	volts
MAXIMUM-SIGNAL DC PLATE CURRENT.....	75 <i>max</i>	75 <i>max</i>	ma
MAXIMUM-SIGNAL PLATE INPUT.....	30 <i>max</i>	37.5 <i>max</i>	watts
MAXIMUM-SIGNAL GRID-NO.2 INPUT.....	2.5 <i>max</i>	2.5 <i>max</i>	watts
PLATE DISSIPATION.....	10 <i>max</i>	13.5 <i>max</i>	watts

Typical Operation (Values are for 2 tubes):

DC Plate Voltage.....	400	500	volts
DC Grid-No.2 Voltage.....	125	125	volts
DC Grid-No.1 (Control-Grid) Voltage†.....	-15	-15	volts
Peak AF Grid-No.1-to-Grid-No.1 Voltage.....	82	82	volts
Zero-Signal DC Plate Current.....	18	20	ma
Maximum-Signal DC Plate Current.....	150	150	ma
Zero-Signal DC Grid-No.2 Current.....	0.6	0.6	ma
Maximum-Signal DC Grid-No.2 Current.....	26	28	ma
Effective Load Resistance (Plate to plate).....	7000	9000	ohms
Maximum-Signal Driving Power (Approx.).....	0.43	0.46	watt
Maximum-Signal Power Output (Approx.).....	42	54	watts

Maximum Circuit Values (CCS or ICAS conditions):

Grid-No.1-Circuit Resistance.....	30000† <i>max</i>	ohms
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‡ Averaged over any audio-frequency cycle of sine-wave form.

† For ac filament supply.

‡ For operation at less than maximum ratings, this value may be as high as 100000 ohms.

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.....	400 <i>max</i>	500 <i>max</i>	volts