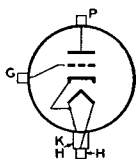


RCA Tube Types

This section contains technical descriptions of RCA tubes used in transmitting, industrial, and amateur equipment. It includes data on current types, as well as information on those RCA discontinued types in which there may still be some interest as to characteristics.

In choosing tube types for the design of new electronic equipment, the designer is referred to the inside back cover for information regarding the availability of the latest **RCA Preferred Types List** and for a listing of **RCA Tube Types Not Recommended for New Equipment Design**.

Tube types are listed in this section according to the numerical-alphabetical-numerical sequence of their type designations. For **Legend for Base and Envelope Connection Diagrams**, see inside back cover.



UHF POWER TRIODE

Forced-air-cooled type used as rf power amplifier, oscillator, and frequency multiplier. May be used at full input up to 2500 Mc and at higher frequencies in cathode-drive circuits of

2C39-A

the coaxial-cylinder type. Class C Telephony maximum CCS plate dissipation, 100 watts.

HEATER VOLTAGE (AC/DC)°	6.3 ± 10%	volts
HEATER CURRENT	1.0	ampere
TRANSCONDUCTANCE*	22000	μmhos
AMPLIFICATION FACTOR	100	
DIRECT INTERELECTRODE CAPACITANCES:		
Grid to plate	1.95	μf
Grid to cathode and heater	6.5	μf
Plate to cathode and heater	0.035 max	μf

° Because the cathode is subjected to considerable back bombardment as the frequency is increased with resultant increase in temperature, the heater voltage should be reduced depending on operating conditions and frequency to prevent overheating of the cathode and resultant short life.

* Plate volts, 600; plate milliamperes, 70.

PLATE-MODULATED RF POWER AMPLIFIER—Class C Telephony

Carrier conditions per tube for use with a maximum modulation factor of 1.0

Maximum CCS Ratings:

DC PLATE VOLTAGE	600 • max	volts
GRID VOLTAGE:		
DC	-150 max	volts
Peak Negative RF	400 max	volts
Peak Positive RF	30 max	volts
DC GRID CURRENT	50 max	ma
DC CATHODE CURRENT	100 max	ma
GRID INPUT	2 max	watts
PLATE DISSIPATION	70 max	watts

• For less than 100-per-cent modulation, it is permissible to use a higher dc plate voltage provided the sum of the peak positive modulation voltage and the dc plate voltage does not exceed 1200 volts.

RF POWER AMPLIFIER AND OSCILLATOR—Class C Telephony

Maximum CCS Ratings:

DC PLATE VOLTAGE	1000 max	volts
GRID VOLTAGE:		
DC	-150 max	volts
Peak Negative RF	400 max	volts
Peak Positive RF	30 max	volts

RCA Transmitting Tubes

DC GRID CURRENT.....	50 max	ma
DC CATHODE CURRENT.....	125 max	ma
GRID INPUT.....	2 max	watts
PLATE DISSIPATION.....	100 max	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

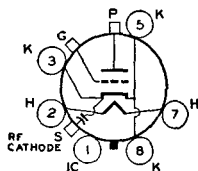
Type 2C39-A, with its ring-type seals of graduated diameters, is useful either in cavity or parallel-line circuits of compact fixed and mobile equipment. Requires special mounting which should support the tube by the plate-terminal flange only. May be mounted in any position. Flexible connectors of the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

