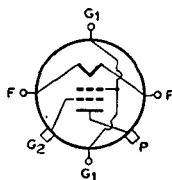


## BEAM POWER TUBE



Forced-air-cooled type having thoriated-tungsten filament and integral radiator used as rf power amplifier and oscillator at frequencies up to 110 Mc. Class C Telegraphy maximum CCS plate dissipation, 800 watts.

# 827-R

|                                                               |          |               |
|---------------------------------------------------------------|----------|---------------|
| FILAMENT VOLTAGE (AC/DC)                                      | 7.5      | volts         |
| FILAMENT CURRENT                                              | 25       | amperes       |
| FILAMENT STARTING CURRENT                                     | 50 max   | amperes       |
| MU-FACTOR, Grid No.2 to Grid No.1*                            | 16       |               |
| DIRECT INTERELECTRODE CAPACITANCES (With external shielding): |          |               |
| Grid No.1 to plate                                            | 0.22 max | $\mu\text{f}$ |
| Grid No.1 to filament and grid No.2                           | 18.5     | $\mu\text{f}$ |
| Plate to filament and grid No.2                               | 11.0     | $\mu\text{f}$ |

\* Plate volts, 2000; grid-No.2 volts, 1100; plate milliamperes, 350.

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

### RF POWER AMPLIFIER—Class C FM Telephony

#### Maximum CCS Ratings:

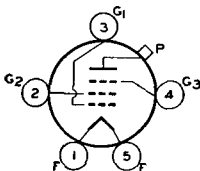
|                                     |          |       |
|-------------------------------------|----------|-------|
| DC PLATE VOLTAGE                    | 3500 max | volts |
| DC GRID-NO.2 (SCREEN-GRID) VOLTAGE  | 1000 max | volts |
| DC GRID-NO.1 (CONTROL-GRID) VOLTAGE | -500 max | volts |
| DC PLATE CURRENT                    | 500 max  | ma    |
| DC GRID-NO.1 CURRENT                | 150 max  | ma    |
| PLATE INPUT                         | 1500 max | watts |
| GRID-NO.2 INPUT                     | 150 max  | watts |
| PLATE DISSIPATION                   | 800 max  | watts |
| AMBIENT TEMPERATURE                 | 45 max   | °C    |

# 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 827-R requires special mounting and may be mounted in vertical position only with grid-No.1 and filament terminals up. OUTLINE 76, *Outlines* Section.

At maximum CCS ratings, 100 cubic feet of forced air per minute from plate to seal end are required. Also, flow of 10 cubic feet per minute from 1-inch diameter nozzle should be directed into header. Air flow must start before any voltages are applied to the 827-R. Maximum temperatures: incoming air, 45°C; radiator, 150°C; glass, 150°C; filament seals, 175°C.



## BEAM POWER TUBE

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. For operation at 50 Mc,

# 828

plate voltage and plate input should be reduced to 80 per cent of maximum ratings; at 75 Mc, to 65 per cent. Class C Telegraphy maximum plate dissipation, CCS 70 watts, ICAS 80 watts. Requires Small five-contact socket and may be mounted in vertical position with base down, or in horizontal position with pins 2 and 4 in vertical plane. OUTLINE 48, *Outlines* Section. Plate shows no color when tube is operated at maximum CCS ratings, and shows a barely perceptible red color at maximum ICAS ratings.

|                                                         |      |                  |
|---------------------------------------------------------|------|------------------|
| FILAMENT VOLTAGE (AC/DC)                                | 10   | volts            |
| FILAMENT CURRENT                                        | 3.25 | amperes          |
| TRANSCONDUCTANCE (For plate current of 43 milliamperes) | 2700 | $\mu\text{mhos}$ |