**35C5 BEAM POWER TUBE**

Miniature type used in output stage of compact, ac/dc radio receivers. Outlines section, 5D; requires miniature 7-contact socket. This tube, like other power-handling tubes, should be adequately ventilated. Except for terminal connections and slightly higher ratings, type 35C5 is equivalent in performance to miniature type 35B5 and, within its maximum ratings, to glass octal type 35L6GT.

**Heater Voltage (ac/dc)** ........................................... 35 volts
**Heater Current** ....................................................... 0.15 ampere
**Heater-Cathode Voltage:**
  - Peak value ................................................... ±200 max volts
  - Average value ................................................ 100 max volts
**Direct Interelectrode Capacitances (Approx.):**
  - Grid No.1 to Plate ........................................... 0.6 pF
  - Grid No.1 to Cathode, Heater, Grid No.2, and Grid No.3 12 pF
  - Plate to Cathode, Heater, Grid No.2, and Grid No.3 9 pF

**MAXIMUM RATINGS (Design-Maximum Values)**
**Plate Voltage** ..................................................... 150 volts
**Grid-No.2 (Screen-Grid) Voltage** ................................ 130 volts
**Plate Dissipation** ................................................ 5.2 watts
**Grid-No.2 Input** .................................................. 1.1 watts
**Bulb Temperature (At hottest point)** ................................ 265 °C

**TYPICAL OPERATION**
**Plate Voltage** ..................................................... 110 volts
**Grid-No.2 Voltage** ................................................ 110 volts
**Grid-No.1 (Control-Grid) Voltage** ................................ −7.5 volts
**Peak AF Grid-No.1 Voltage** ....................................... 7.5 volts
**Zero-Signal Plate Current** ........................................ 40 mA
**Maximum-Signal Plate Current** ................................... 41 mA
**Zero-Signal Grid-No.2 Current** ................................... 3 mA
**Maximum-Signal Grid-No.2 Current** ................................ 7 mA
**Plate Resistance (Approx.)** ...................................... 13000 ohms
**Transconductance** ................................................ 5800 μmhos
**Load Resistance** .................................................. 2500 ohms
**Total Harmonic Distortion** ...................................... 10 per cent
**Maximum-Signal Power Output** .................................... 1.5 watts

**MAXIMUM CIRCUIT VALUES**
**Grid-No.1-Circuit Resistance:**
  - For fixed-bias operation ...................................... 0.1 megohm
  - For cathode-bias operation ................................... 0.5 megohm

**Installation and Application**

The 35-volt heater is designed to operate under the normal conditions of line-voltage variation without materially affecting the performance or serviceability of the 35C5. For operation of the 35C5 in series with other types having 0.15-ampere rating, the current in the heater circuit should be adjusted to 0.15 ampere for the normal supply voltage.
In a series-heater circuit of the "dc-power line" type employing several 0.15-ampere types and one or two 35C5s, the heater(s) of the 35C5(s) should be placed on the positive side of the line. Under these conditions, heater-cathode voltage of the 35C5 must not exceed the value given under maximum ratings. In a series-heater circuit of the "universal" type employing rectifier tube 35W4, one or two 35C5s and several 0.15-ampere types, it is recommended that the heater(s) of the 35C5(s) be placed in the circuit so that the higher values of heater-cathode bias will be impressed on the 35C5(s) rather than on the other 0.15-ampere types. This is accomplished by arranging the 35C5(s) on the side of the supply line which is connected to the cathode of the rectifier, i.e., the positive terminal of the rectified voltage supply. Between this side of the line and the 35C5(s), any necessary auxiliary resistance and the heater of the 35W4 are connected in series.

As a power amplifier (class A1), the 35C5 is recommended for use either singly or in push-pull combination in the power-output stage of ac/dc receivers. The operating values shown under typical operation have been determined on the basis that grid-No.1 current does not flow during any part of the input cycle.

Refer to chart at end of section.
Refer to chart at end of section.
Refer to chart at end of section.
Refer to chart at end of section.
Refer to type 6LR6.

**HALF-WAVE VACUUM RECTIFIER**

35W4

Miniature type used in power supply of ac/dc receivers. Outlines section, 5D; requires miniature 7-contact socket. This type is equivalent in performance to glass-octal type 35Z5GT. The heater is provided with a tap for operation of a panel lamp.
Heater Voltage (ac/dc):
- Entire Heater (pins 3 and 4) 35 volts
- Panel Lamp Section (pins 4 and 6) 7.5 volts

Heater Current:
- Between Pins 3 and 4 0.15 ampere
- Between Pins 3 and 6 0.15 ampere

Peak Heater-Cathode Voltage ±360 max volts

* Without panel lamp.
** With No. 49 or No. 47 panel lamp.

Half-Wave Rectifier

MAXIMUM RATINGS (Design-Maximum Values)
- Peak Inverse Plate Voltage 360 volts
- Peak Plate Current 660 mA

Average Output Current:
- With Panel Lamp and No Shunting Resistor 66 mA
- Without Panel Lamp 110 mA

Panel-Lamp-Section Voltage:
- When Panel Lamp Fails 17 volts

AC Plate-Supply Voltage (rms) 117 volts
- Filter-Input Capacitor 40 µF

Minimum Total Effective Plate-Supply Impedance 15 ohms

Panel-Lamp Shunting Resistor 300 150 100 ohms

Average Output Current 60 70 80 90 mA

† No. 49 or No. 47 panel lamp used in circuit given below with capacitor-input filter.

Installation and Application

For heater considerations, refer to miniature type 35C5.

With the panel lamp connected as shown in the diagram, the drop across R and all heaters (with panel lamp) should equal 117 volts at 0.15 ampere. The shunting resistor R_s is required when dc output current exceeds 60 milliamperes. Values of R_s for dc output currents greater than 60 milliamperes are given in tabulated data.

![Diagram](image)

**Typical Operation Without Panel Lamp**

- AC Plate-Supply Voltage (rms) 117 volts
- Filter-Input Capacitor 40 µF
- Minimum Total Effective Plate-Supply Impedance 15 ohms
- Average Output Current 100 mA
- DC Output Voltage at Input to Filter (Approx.):
  - At half-load current (50 mA) 135 volts
  - At full-load current (100 mA) 129 volts
- Voltage Regulation (Approx.) 15 volts

**Maximum Circuit Values**

- Panel-Lamp Shunting Resistor: 
  - For dc output current of
    - 70 mA 800 ohms
    - 80 mA 400 ohms
    - 90 mA 250 ohms

* Required when dc output current is greater than 60 milliamperes.