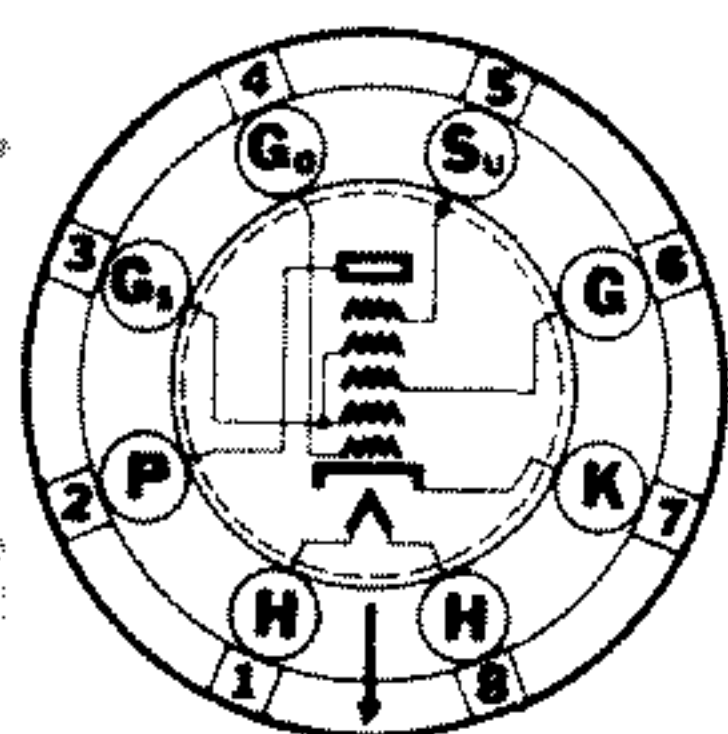
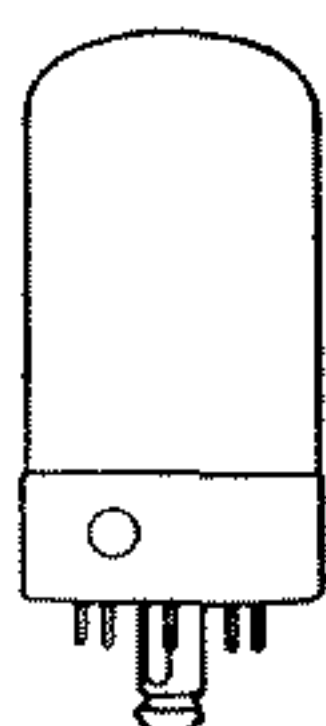




8AL-L-0



# Sylvania Type 7Q7

HEPTODE CONVERTER

GT EQUIVALENT 6SA7GT

## PHYSICAL SPECIFICATIONS

|                             |                                   |
|-----------------------------|-----------------------------------|
| Base.....                   | Lock-In 8 Pin                     |
| Bulb.....                   | T-9                               |
| Maximum Overall Length..... | 2 <sup>25</sup> / <sub>32</sub> " |
| Maximum Seated Height.....  | 2 <sup>1</sup> / <sub>4</sub> "   |
| Mounting Position.....      | Any                               |

## RATINGS

|                                                                               |             |
|-------------------------------------------------------------------------------|-------------|
| Heater Voltage (Nominal) AC or DC.....                                        | 7.0 Volts   |
| Heater Current (Nominal).....                                                 | 0.32 Ampere |
| Maximum Plate Voltage.....                                                    | 300 Volts   |
| Maximum Screen Voltage.....                                                   | 100 Volts   |
| Maximum Screen Supply Voltage.....                                            | 300 Volts   |
| Maximum Plate Dissipation.....                                                | 1.0 Watt    |
| Maximum Screen Dissipation.....                                               | 1.0 Watt    |
| Maximum Total Cathode Current.....                                            | 14 Ma.      |
| Minimum Signal-Grid External Bias Voltage (with self-excited oscillator)..... | 0 Volt      |
| Maximum Heater-Cathode Voltage.....                                           | 90 Volts    |

### Direct Interelectrode Capacitances:\*

|                                    |                     |
|------------------------------------|---------------------|
| Grid G to Plate.....               | 0.20 $\mu$ mf. Max. |
| Grid G to Go.....                  | 0.20 $\mu$ mf. Max. |
| Grid Go to Plate.....              | 0.15 $\mu$ mf. Max. |
| Signal Input.....                  | 9.0 $\mu$ mf.       |
| Oscillator Input.....              | 7.0 $\mu$ mf.       |
| Mixer Output.....                  | 9.0 $\mu$ mf.       |
| Grid Go to All Except Cathode..... | 5.0 $\mu$ mf.       |
| Grid Go to Cathode.....            | 2.2 $\mu$ mf.       |
| Cathode to all Except Go.....      | 6.0 $\mu$ mf.       |

\*With 1<sup>5</sup>/<sub>16</sub>" diameter shield (RMA Std. M8-308) connected to cathode.

## TYPICAL OPERATION CONVERTER (SEPARATELY EXCITED)

|                                                 |       |                |
|-------------------------------------------------|-------|----------------|
| Heater-Voltage.....                             | 6.3   | 6.3 Volts      |
| Heater Current.....                             | 0.3   | 0.3 Ampere     |
| Plate Voltage.....                              | 100   | 250 Volts      |
| Screen Voltage.....                             | 100   | 100 Volts      |
| Control Grid Voltage** (G).....                 | -2    | -2 Volts       |
| Self-Bias Resistor.....                         | 160   | 160 Ohms       |
| Suppressor Grid and Shield Voltage.....         | 0     | 0 Volt         |
| Oscillator Grid Resistor (Go).....              | 20000 | 20000 Ohms     |
| Plate Resistance (Approximate).....             | 0.5   | 1.0 Megohm     |
| Oscillator Grid Current.....                    | 0.5   | 0.5 Ma.        |
| Plate Current.....                              | 3.3   | 3.5 Ma.        |
| Screen Current (Gs).....                        | 8.5   | 8.5 Ma.        |
| Total Cathode Current.....                      | 12.3  | 12.5 Ma.       |
| Conversion Conductance at Ec3 = -2.....         | 525   | 550 $\mu$ mhos |
| Conversion Conductance at Ec3 = -6.....         | 275   | 300 $\mu$ mhos |
| Conversion Conductance at Ec3 = -10.....        | 65    | 70 $\mu$ mhos  |
| Conversion Conductance at Ec3 = -35 (Approx.).. | 2     | 2 $\mu$ mhos   |

\*\*Characteristics for self excitation are similar to those given for separate excitation except the control grid (Grid G bias voltage is 0 volt).

Note: With Grid Gs connected to plate (100 volts) and signal applied to Grid Go (0 volt bias). the Mutual Conductance is 4500  $\mu$ mhos, plate current 27 Ma. amplification factor 13. Grid G is connected to ground during this test.

## APPLICATION

Sylvania Type 7Q7 is a pentagrid converter having electrical characteristics quite similar to those for Type 6SA7. The Lock-In construction embodied in this type provides compactness, suitable shielding and the lock-in feature. For a-c service the 7-volt heater rating corresponds to a 130-volt line condition. It is also the nominal voltage for automotive receiver service. Ratings marked Max. and Min. are design centers for a line voltage of 117 volts. For automotive service the design centers are 90% of the values indicated, using a battery terminal voltage of 6.6 volts.

