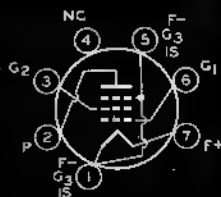
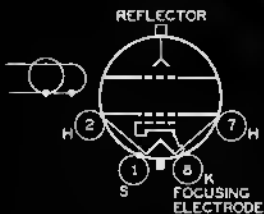


| <br>Type | Description                                                                                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1L4</b>                                                                                | Sharp-Cutoff Pentode. 7-pin miniature type. For rf amplifiers in battery-supply receivers.                                                                                                                                                                                         |
| <b>2K26</b>                                                                               | Single resonator reflex Klystron with an integral resonant cavity and mechanical tuning mechanism. For local oscillator service in applications such as microwave receivers. Can be tuned electrically to give about a 55 Mc vernier adjustment. Useful power output about 100 Mw. |
| <b>3A4</b>                                                                                | Power Pentode. 7-pin miniature, coated-filament, dry-cell type. Can deliver 1.2 watts power output at 10 Mc in rf amplifier service.                                                                                                                                               |
| <b>3A5</b>                                                                                | Medium-Mu Twin Triode. 7-pin miniature, coated-filament, dry-cell type. Can deliver 2 watts power output at 40 Mc in push-pull class C service.                                                                                                                                    |
| <b>5R4-GY</b>                                                                             | Full-Wave Vacuum Rectifier. Coated filament type. Useful in aircraft applications at altitudes up to 40000 feet. Octal 5-pin base.                                                                                                                                                 |
| <b>5R4-GYB</b>                                                                            | Full-Wave Vacuum Rectifier. Coated-filament type. Useful in aircraft applications at altitudes up to 40000 feet. Octal 5-pin base.                                                                                                                                                 |
| <b>6AG7-Y</b>                                                                             | Power Pentode. Has a low-loss-phenolic base but otherwise identical with the 6AG7.                                                                                                                                                                                                 |
| <b>6AK6</b>                                                                               | Power Pentode. 7-pin miniature type. Similar to 6G6-G.                                                                                                                                                                                                                             |
| <b>6AS6</b>                                                                               | Sharp-Cutoff Pentode. 7-pin miniature type with heater-cathode. For use in gated amplifier circuits, delay circuits, and gain-controlled amplifier circuits.                                                                                                                       |
| <b>6AS7-G</b>                                                                             | Low-Mu Twin Triode. Heater-cathode type. Has high perveance, a $\mu$ of 2, and an ac plate resistance of 280 ohms. For use as a regulator tube in dc power supplies, and in projection television booster scanning applications. Octal 8-pin base.                                 |
| <b>6SJ7-Y</b>                                                                             | Sharp-Cutoff Pentode. Has a low-loss-phenolic base but otherwise identical with the 6SJ7.                                                                                                                                                                                          |
| <b>12A6</b>                                                                               | Beam Power Tube. Metal type with 12.6-volt heater. Octal 7-pin base.                                                                                                                                                                                                               |
| <b>125W7</b>                                                                              | Twin Diode—Medium-Mu Triode. Single-ended metal type with an octal 8-pin base. Similar to the 6SR7 except for heater rating.                                                                                                                                                       |
| <b>125X7-GT</b>                                                                           | Medium-Mu Twin Triode. Similar to the 6SN7-GT except for heater rating. Octal 8-pin base.                                                                                                                                                                                          |
| <b>125Y7</b>                                                                              | Pentagrid Converter. Metal type with an octal 8-pin base. Similar to the 6SA7 except for heater rating.                                                                                                                                                                            |
| <b>83</b>                                                                                 | Full-Wave Mercury Vapor Rectifier. Useful in dc power supplies subject to wide variations in the output current. Values shown are for the temperature range from 20° to 60° C. Medium 4-pin base.                                                                                  |
| <b>1613</b>                                                                               | Power Pentode. Heater-cathode type. Useful as a crystal oscillator. For renewal use only.                                                                                                                                                                                          |
| <b>1614</b>                                                                               | Beam Power Tube. Heater cathode type. For police and emergency broadcast use. Octal 7-pin base.                                                                                                                                                                                    |

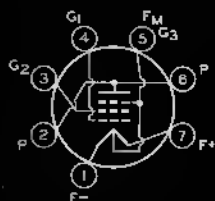
For key to terminal connections see page 30.



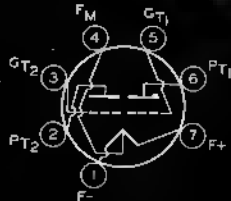
1L4



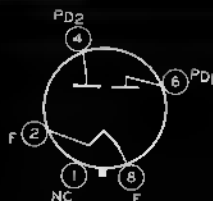
2K26



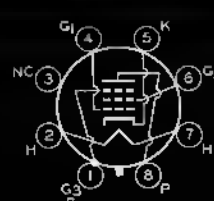
3A4



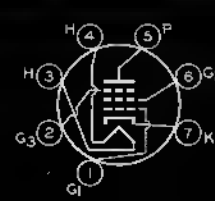
3A5



5R4 GY 5R4 GYB



6AG7 Y



6AK6



6AS6

NOTE: COAXIAL OUTPUT LINE PASSES THROUGH VACANT PIN POSITION No. 4.

# MISCELLANEOUS TYPES

| Cathode    |              | Maximum Dimensions<br>Inches |         | Class of Service                           | Maximum Ratings                                                                                                                                                             |                         |                        | Operating Conditions and Characteristics |                                                |                                 |                        |                   |                                   |                                  |                      |                    |                                                                   | Type    |
|------------|--------------|------------------------------|---------|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------|------------------------------------------|------------------------------------------------|---------------------------------|------------------------|-------------------|-----------------------------------|----------------------------------|----------------------|--------------------|-------------------------------------------------------------------|---------|
|            |              |                              |         |                                            | Plate Volts                                                                                                                                                                 | Plate Dissipation Watts | Grid-No. 2 Input Watts | Plate Supply Volts                       | Grid-No. 1 Volts(v) or Cathode Resistance Ohms | Grid-No. 2 Supply Volts         | Grid-No. 2 Current Ma. | Plate Current Ma. | AC Plate Resistance Ohms          | Trans-conductance Micro-mhos     | Amplification Factor | Power Output Watts |                                                                   |         |
| 1.4        | 0.05         | 2 1/8                        | 3/4     | Class A <sub>1</sub> Amplifier             | 110                                                                                                                                                                         | —                       | —                      | 90                                       | 0                                              | 67.5                            | 1.2                    | 2.9               | 260000                            | 925                              | —                    | —                  | 1L4                                                               |         |
| 6.3        | 0.44         | 3 1/2                        | 1 39/64 | Class C CW Oscillator                      | Maximum Ratings, Absolute Values:<br>DC Resonator Volts, 330<br>DC Reflector Volts, 0 to -350<br>Peak Heater-Cathode Volts, ±50                                             |                         |                        |                                          |                                                |                                 |                        |                   |                                   |                                  |                      |                    | DC Resonator Ma., 35                                              | 2K26    |
| 2.8<br>1.4 | 0.1<br>0.2   | 2 1/8                        | 3/4     | Class A <sub>1</sub> Amplifier             | 150                                                                                                                                                                         | 2.0                     | 0.4                    | 150                                      | -8.4v                                          | 90                              | 2.2                    | 13.3              | 100000                            | 1900                             | —                    | 0.7→               | 3A4                                                               |         |
|            |              |                              |         | RF Power Amplifier                         | 150                                                                                                                                                                         | 2.0                     | 0.9                    | 150                                      | Grid Leak                                      | 135                             | 6.5                    | 18.3              | Power Output, 1.2 watts at 10 Mc. |                                  |                      |                    |                                                                   |         |
| 2.8<br>1.4 | 0.11<br>0.22 | 2 1/8                        | 3/4     | Class A <sub>1</sub> Amplifier Each Unit   | 135                                                                                                                                                                         | 5.0                     | —                      | 90                                       | -2.5v                                          | —                               | —                      | 3.7               | 8300                              | 1800                             | 15                   | —                  | 3A5                                                               |         |
|            |              |                              |         | Push-Pull Class C Amplifier Each Unit      | 135                                                                                                                                                                         | 1.0                     | —                      | 135                                      | -20v                                           | Power Output, 2 watts at 40 Mc. |                        | 30                | Driving Power, 0.2 watt           |                                  |                      |                    |                                                                   |         |
| 5          | 2            | 5 5/16                       | 2 1/16  | At 40000 Feet with Capacitive Input Filter | AC Volts per Plate (RMS), 750<br>Max. Peak Inverse Volts, 2400<br>Min. Total Effective Supply Impedance per Plate, 125 ohms                                                 |                         |                        |                                          |                                                |                                 |                        |                   |                                   |                                  |                      |                    | Max. DC Output Ma., 175<br>Max. Peak Plate Ma., 650               | 5R4-GY  |
|            |              |                              |         | At 40000 Feet with Inductive Input Filter  | AC Volts per Plate (RMS), 850<br>Max. Peak Inverse Volts, 2400<br>Min. Value of Input Choke, 5 Henries                                                                      |                         |                        |                                          |                                                |                                 |                        |                   |                                   |                                  |                      |                    | Max. DC Output Ma., 250<br>Max. Peak Plate Ma., 650               |         |
| 5          | 2            | 4 1/4                        | 1 9/16  | At 40000 Feet with Capacitive Input Filter | Max. AC Volts per Plate (RMS), 750<br>Max. Peak Inverse Plate Volts, 2650<br>Min. Total Effective Supply Impedance per Plate, 100 ohms                                      |                         |                        |                                          |                                                |                                 |                        |                   |                                   |                                  |                      |                    | Max. DC Output Ma. (Both Plates), 250<br>Max. Peak Plate Ma., 715 | 5R4-GYB |
|            |              |                              |         | At 40000 Feet with Inductive Input Filter  | Max. AC Volts per Plate (RMS), 800<br>Max. Peak Inverse Plate Volts, 2650<br>Min. Value of Input Choke, 5 henries                                                           |                         |                        |                                          |                                                |                                 |                        |                   |                                   |                                  |                      |                    | Max. DC Output Ma. (Both Plates), 250<br>Max. Peak Plate Ma., 715 |         |
| 6.3        | 0.65         | 3 1/4                        | 1 5/16  | Class A <sub>1</sub> Amplifier             | 300                                                                                                                                                                         | 9.0                     | 1.5                    | 180                                      | -3v                                            | 150                             | 7.0                    | 30                | 150000                            | 11000                            | —                    | 3.0o               | 6AG7-Y                                                            |         |
| 6.3        | 0.15         | 2 1/8                        | 3/4     | Class A <sub>1</sub> Amplifier             | 300                                                                                                                                                                         | 2.75                    | .75                    | 180                                      | -9v                                            | 180                             | 2.5                    | 15                | 200000                            | 2300                             | —                    | 1.1                | 6AK6                                                              |         |
| 6.3        | 0.175        | 1 3/4                        | 3/4     | Class A <sub>1</sub> Amplifier             | 180                                                                                                                                                                         | 1.7                     | 0.75                   | 120                                      | -2v                                            | 120                             | 3.5                    | 5.2               | 110000                            | 3200                             | —                    | —                  | 6AS6                                                              |         |
| 6.3        | 2.5          | 4 5/8                        | 1 9/16  | Class A <sub>1</sub> Amplifier Each Unit   | 250                                                                                                                                                                         | 13                      | —                      | 135                                      | 250                                            | —                               | —                      | 125               | 280                               | 7000                             | 2.0                  | —                  | 6AS7-G                                                            |         |
| 6.3        | 0.3          | 2 5/8                        | 1 5/16  | Class A <sub>1</sub> Amplifier             | 300                                                                                                                                                                         | 2.5                     | 0.4                    | 250                                      | -3v                                            | 100                             | 0.8                    | 3.0               | #                                 | 1650                             | —                    | —                  | 6SJ7-Y                                                            |         |
| 12.6       | 0.15         | 3 1/4                        | 1 5/16  | Class A <sub>1</sub> Amplifier             | 250                                                                                                                                                                         | 7.5                     | 1.5                    | 250                                      | -12.5v                                         | 250                             | 3.5                    | 30                | 70000                             | 3000                             | —                    | 3.4o               | 12A6                                                              |         |
| 12.6       | 0.15         | 2 5/8                        | 1 5/16  | Class A <sub>1</sub> Amplifier             | 250                                                                                                                                                                         | 2.5                     | —                      | 26.5                                     | Grid Res., 2 meg.                              | —                               | —                      | 1.1               | 15500                             | 1100                             | 17                   | —                  | 12SW7                                                             |         |
|            |              |                              |         |                                            |                                                                                                                                                                             |                         |                        | 250                                      | -9v                                            | —                               | —                      | 9.5               | 8500                              | 1900                             | 16                   | —                  |                                                                   |         |
| 12.6       | 0.3          | 3 5/16                       | 1 5/16  | Class A <sub>1</sub> Amplifier Each Unit   | 300                                                                                                                                                                         | 2.5                     | —                      | 26.5                                     | Grid Res., 0.05 meg.                           | —                               | —                      | 1.8               | 11500                             | 1800                             | 21                   | —                  | 12SX7-GT                                                          |         |
|            |              |                              |         |                                            |                                                                                                                                                                             |                         |                        | 250                                      | -8v                                            | —                               | —                      | 9.0               | 7700                              | 2600                             | 20                   | —                  |                                                                   |         |
| 12.6       | 0.15         | 2 5/8                        | 1 5/16  | Converter                                  | 300                                                                                                                                                                         | 1.0                     | 1.0                    | 26.5                                     | -1v†                                           | 26.5†                           | 1.7†                   | 0.45              | —                                 | Conversion Transcond., 250 μmhos |                      | 12SY7              |                                                                   |         |
|            |              |                              |         |                                            |                                                                                                                                                                             |                         |                        | 250                                      | -2v†                                           | 100†                            | 8.5†                   | 3.5               | 1000000                           | Conversion Transcond., 450 μmhos |                      |                    |                                                                   |         |
| 5.0        | 3.0          | 5 3/8                        | 2 1/16  | With Capacitive Input Filter               | Max. AC Volts per Plate (RMS), 450<br>Max. Peak Inverse Volts, 1550<br>Max. DC Output Ma., 225<br>Max. Peak Plate Amp., 1<br>Min. Total Effec. Supply Imped./Plate, 50 Ohms |                         |                        |                                          |                                                |                                 |                        |                   |                                   |                                  |                      |                    | 83                                                                |         |
|            |              |                              |         | With Inductive Input Filter                | Max. AC Volts per Plate (RMS), 550<br>Max. Peak Inverse Volts, 1550<br>Max. DC Output Ma., 225<br>Max. Peak Plate Amp., 1<br>Min. Value of Input Choke, 3 henries           |                         |                        |                                          |                                                |                                 |                        |                   |                                   |                                  |                      |                    |                                                                   |         |
| 6.3        | 0.7          | 3 1/4                        | 1 5/16  | Class C Telegraphy                         | 275                                                                                                                                                                         | 7.0                     | 2.0                    | 350                                      | -35v                                           | 200                             | 10                     | 50                | —                                 | —                                | —                    | 9.0                | 1613                                                              |         |
| 6.3        | 0.9          | 4 5/16                       | 1 9/8   | Class C Telephony**                        | 375                                                                                                                                                                         | 21                      | 2.5                    | 375                                      | -50v                                           | 250                             | —                      | 93                | —                                 | —                                | —                    | 24.5               | 1614                                                              |         |
|            |              |                              |         | Class C Telegraphy**                       | 450                                                                                                                                                                         | 25                      | 3.5                    | 450                                      | -45v                                           | 250                             | 8                      | 100               | —                                 | —                                | —                    | 31                 |                                                                   |         |

\* Greater than 1 megohm.

† For Grid No. 3, which is control grid.

‡ For Grids No. 2 and No. 4, which are internally connected.

O Load for stated power, 10000 ohms.

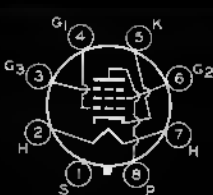
→ Load for stated power, 8000 ohms.

o Load for stated power, 7500 ohms.

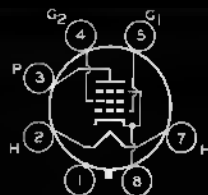
\*\* Intermittent Commercial and Amateur Service.



6AS7-G 12SX7-GT



6SJ7-Y



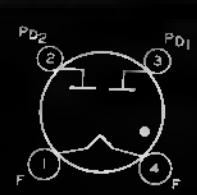
12A6 1613 1614



12SW7



12SY7



83