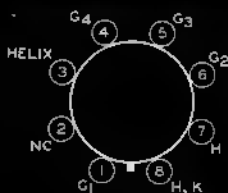




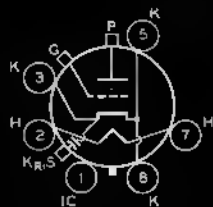
## Lead Color Code

|            |        |
|------------|--------|
| Heater (2) | Brown  |
| Collector  | Red    |
| Helix      | Orange |
| Grid No. 2 | Blue   |
| Grid No. 1 | Green  |
| Cathode    | Yellow |

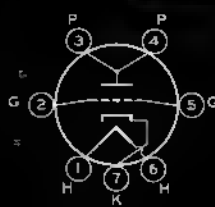


4009 4010

6861



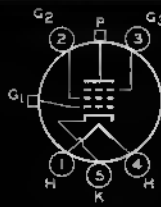
2C40 2C43



6F4 6L4



614



See Note 1  
954 956



See Note 2  
955

| <br>Type | Description                                                                                                                                                                                                                                                                                                                         |
|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>TRAVELING-WAVE TUBES</b>                                                               |                                                                                                                                                                                                                                                                                                                                     |
| <b>4009</b>                                                                               | Helix-transmission line type with built-in periodic permanent magnet focusing. Frequency range 2000 to 4000 Mc. Low-power amplifier tube for driver applications and for first stage of wide-band microwave receivers not requiring a low-noise figure; also for grid-No. 1 pulsed applications involving negligible driving power. |
| <b>4010</b>                                                                               | Helix-transmission line type with built-in periodic permanent magnet focusing. Frequency range 2000 to 4000 Mc. Intermediate power amplifier for use as driver of higher-power traveling-wave tubes; or as output stage in applications requiring power output of 1.5 watts or less.                                                |
| <b>6861</b>                                                                               | Low-noise, low-level amplifier tube of the helix-transmission line type. Frequency range, 2700 to 3500 Mc. For use in input stage of radar, scatter propagation and other microwave receivers, and in if amplifier service.                                                                                                         |
| <b>OTHER UHF TYPES</b>                                                                    |                                                                                                                                                                                                                                                                                                                                     |
| <b>2C40</b>                                                                               | Lighthouse Triode. For use as an RF amplifier at frequencies up to 1200 Mc and as a continuous-wave oscillator at frequencies up to 3370 Mc. Octal 6-pin base.                                                                                                                                                                      |
| <b>2C43</b>                                                                               | Lighthouse Triode. Similar to Type 2C40 except for higher dissipation rating. For use as a continuous-wave oscillator at frequencies up to 1500 Mc.                                                                                                                                                                                 |
| <b>6F4</b>                                                                                | Oscillator Triode. Acorn type with a heater-cathode. For use at frequencies up to 1200 Mc.                                                                                                                                                                                                                                          |
| <b>6J4</b>                                                                                | High-Mu Triode. 7-pin miniature type with a heater-cathode. For use in cathode-drive circuits. Has a mu of 55 and a gm of 12000 micromhos. Useful up to about 500 Mc.                                                                                                                                                               |
| <b>6F4</b>                                                                                | Oscillator Triode. Similar to 6F4 but operates at a higher plate voltage, has higher amplification factor, and lower grid-to-plate capacitance.                                                                                                                                                                                     |
| <b>954</b>                                                                                | Sharp-Cutoff Pentode. Acorn type with a heater-cathode. For use at frequencies up to 430 Mc.                                                                                                                                                                                                                                        |
| <b>955</b>                                                                                | Medium-Mu Triode. Acorn type with a heater-cathode. For use at frequencies up to 600 Mc.                                                                                                                                                                                                                                            |
| <b>956</b>                                                                                | Remote-Cutoff Pentode. Acorn type with a heater-cathode. For use at frequencies up to 430 Mc.                                                                                                                                                                                                                                       |
| <b>959</b>                                                                                | Medium-Mu Triode. Acorn type with a coated filament for operation from a dry-cell supply.                                                                                                                                                                                                                                           |
| <b>958-A</b>                                                                              | Medium-Mu Triode. Acorn type with a coated filament. Designed for transmitter service. Useful up to 350 Mc.                                                                                                                                                                                                                         |
| <b>959</b>                                                                                | Sharp-Cutoff Pentode. Acorn type with a coated filament for operation from a dry-cell supply.                                                                                                                                                                                                                                       |
| <b>5718</b>                                                                               | Medium-Mu Triode. Subminiature type. For use as an rf power amplifier and oscillator in uhf applications critical as to shock and vibration. Useful power output of nearly 1 watt at 500 Mc. Full input up to 1000 Mc.                                                                                                              |
| <b>6026</b>                                                                               | Oscillator Triode. Subminiature type. Intended particularly as an oscillator for transmitting service in radiosonde and similar applications at 400 Mc.                                                                                                                                                                             |
| <b>9001</b>                                                                               | Sharp-Cutoff Pentode. 7-pin miniature type with a heater-cathode. Electrically similar to the 954.                                                                                                                                                                                                                                  |

For key to terminal connections see page 30.  
Note 1: P is on long part of bulb (top); G is on short part of bulb.  
Note 2: Long part of bulb is top.

# TUBES FOR UHF APPLICATIONS —Cont'd

| Cathode              |       | Maximum Dimensions<br>Inches    |                    | Class of Service                        | Maximum Ratings                                                                                     |                         |                            | Typical Operation                                                                          |                                                               |                               |                                                                                          |                                                                                        |                                             |                                                           |                      |                       |       | <br>Type |
|----------------------|-------|---------------------------------|--------------------|-----------------------------------------|-----------------------------------------------------------------------------------------------------|-------------------------|----------------------------|--------------------------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------|------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|---------------------------------------------|-----------------------------------------------------------|----------------------|-----------------------|-------|---------------------------------------------------------------------------------------------|
|                      |       |                                 |                    |                                         | DC Plate Volts                                                                                      | DC Current Plate<br>Ma. | Plate Dissipation<br>Watts | Plate Supply<br>Volts                                                                      | Grid-No. 1<br>Volts(V)<br>or<br>Cathode<br>Resistance<br>Ohms | Grid-No. 2<br>Supply<br>Volts | Grid-No. 2<br>Current<br>Ma.                                                             | Plate Current<br>Ma.                                                                   | AC Plate Resistance<br>Ohms                 | Trans-conductance<br>Micro-mhos                           | Amplification Factor | Power Output<br>Watts |       |                                                                                             |
| Volts                | Amp.  | Length                          | Diam.              |                                         |                                                                                                     |                         |                            |                                                                                            |                                                               |                               |                                                                                          |                                                                                        |                                             |                                                           |                      |                       |       |                                                                                             |
| TRAVELING-WAVE TUBES |       |                                 |                    |                                         |                                                                                                     |                         |                            |                                                                                            |                                                               |                               |                                                                                          |                                                                                        |                                             |                                                           |                      |                       |       |                                                                                             |
| 6.3                  | 1.3   | 15 $\frac{3}{8}$ " <sup>▲</sup> | Ø                  | RF Amplifier                            | 1000*                                                                                               | 5.0*                    | —                          | Typical Operation at 3000 Mc:<br>DC Collector Volts, 700<br>Gain at 10 mw. Output, 35 db.  |                                                               |                               |                                                                                          |                                                                                        |                                             | Saturated Power Output, 28 mw.                            |                      | 4009                  |       |                                                                                             |
| 6.0                  | 1.3   | 15 $\frac{3}{8}$ " <sup>▲</sup> | Ø                  | RF Amplifier                            | 1300*                                                                                               | 25.0*                   | —                          | Typical Operation at 3000 Mc:<br>DC Collector Volts, 1150<br>Gain at 1 Watt Output, 32 db. |                                                               |                               |                                                                                          |                                                                                        |                                             | Saturated Power Output, 1.8 watts                         |                      | 4010                  |       |                                                                                             |
| 5                    | 0.65  | 19 $\frac{3}{8}$ "              | 1.38"              | RF & IF Amplifier                       | 500*                                                                                                | 500 $\frac{1}{2}$ *     | —                          | Typical Operation at 3100 Mc:<br>DC Collector Volts, 400<br>Noise Figure, 6.5 db.          |                                                               |                               |                                                                                          |                                                                                        |                                             | Saturated Power Output, 1 mw.<br>Gain (low-level), 25 db. |                      | 6861                  |       |                                                                                             |
| OTHER UHF TYPES      |       |                                 |                    |                                         |                                                                                                     |                         |                            |                                                                                            |                                                               |                               |                                                                                          |                                                                                        |                                             |                                                           |                      |                       |       |                                                                                             |
| 6.3                  | 0.75  | 2 $\frac{9}{16}$ "              | 1 $\frac{1}{16}$ " | Class A <sub>1</sub> Amplifier          | —                                                                                                   | —                       | —                          | 250                                                                                        | 200                                                           | —                             | —                                                                                        | 17                                                                                     | 7452                                        | 4850                                                      | 36                   | —                     | 2C40  |                                                                                             |
|                      |       |                                 |                    | Class C Amp. & Osc.                     | 500 <sup>▲</sup>                                                                                    | 25 <sup>▲</sup>         | 6.5 <sup>▲</sup>           | —                                                                                          | —                                                             | —                             | —                                                                                        | —                                                                                      | —                                           | —                                                         | —                    | —                     |       | —                                                                                           |
| 6.3                  | 0.9   | 2 $\frac{11}{16}$ "             | 1 $\frac{1}{16}$ " | Class A <sub>1</sub> Amplifier          | —                                                                                                   | —                       | —                          | 250                                                                                        | 100                                                           | —                             | —                                                                                        | 21                                                                                     | 6000                                        | 8000                                                      | 48                   | —                     | 2C43  |                                                                                             |
|                      |       |                                 |                    | Class C Amp. & Osc.                     | 500 <sup>▲</sup>                                                                                    | 40 <sup>▲</sup>         | 12 <sup>▲</sup>            | —                                                                                          | —                                                             | —                             | —                                                                                        | —                                                                                      | —                                           | —                                                         | —                    | —                     |       | —                                                                                           |
| 6.3                  | 0.225 | 1 $\frac{3}{8}$ "               | 1 $\frac{5}{32}$ " | RF Amp. & Osc.<br>Class C Telegraphy    | 150                                                                                                 | 20                      | 2                          | 150                                                                                        | —15v                                                          | —                             | —                                                                                        | 20                                                                                     | DC Grid Ma., 7.5<br>Driver Power, 0.2 watt  |                                                           |                      | 1.8                   | 6F4   |                                                                                             |
| 6.3                  | 0.4   | 2 $\frac{1}{8}$ "               | $\frac{3}{4}$ "    | Class A <sub>1</sub> Amplifier          | 150                                                                                                 | 20                      | 2.25                       | 100<br>150                                                                                 | 100<br>100                                                    | —<br>—                        | —<br>—                                                                                   | 10<br>15                                                                               | 5000<br>4500                                | 11000<br>12000                                            | 55<br>55             | —                     | 6J4   |                                                                                             |
| 6.3                  | 0.225 | 1 $\frac{3}{8}$ "               | 1 $\frac{5}{32}$ " | Class A <sub>1</sub> Amplifier          | 500                                                                                                 | 15                      | 1.7                        | 80                                                                                         | 150                                                           | —                             | —                                                                                        | 9.5                                                                                    | 4400                                        | 6400                                                      | 28                   | —                     | 6L4   |                                                                                             |
| 6.3                  | 0.15  | 1 $\frac{7}{8}$ "               | 1 $\frac{5}{32}$ " | Class A <sub>1</sub> Amplifier          | 250                                                                                                 | —                       | 0.5                        | 250                                                                                        | —3v                                                           | 100                           | 0.7                                                                                      | 2.0                                                                                    | 1.0+ $\frac{1}{2}$                          | 1400                                                      | —                    | —                     | 954   |                                                                                             |
|                      |       |                                 |                    | Bias Detector                           |                                                                                                     |                         |                            | 250                                                                                        | —6v                                                           | 100                           | DC plate ma. adjusted to 0.1 with no input<br>signal. Cath. Res. of 20000 to 50000 ohms. |                                                                                        |                                             |                                                           |                      |                       |       |                                                                                             |
| 6.3                  | 0.15  | 1 $\frac{3}{8}$ "               | 1 $\frac{5}{32}$ " | RF Amp. & Osc.<br>Class C Telegraphy    | 180                                                                                                 | 8.0                     | 1.6                        | 180                                                                                        | —35v                                                          | —                             | —                                                                                        | 7                                                                                      | DC Grid Ma., 1.5                            |                                                           |                      | 0.5 at<br>60 Mc       | 955   |                                                                                             |
| 6.3                  | 0.15  | 1 $\frac{7}{8}$ "               | 1 $\frac{5}{32}$ " | Class A <sub>1</sub> Amplifier          | 250                                                                                                 | —                       | 1.7                        | 250                                                                                        | —3v                                                           | 100                           | 2.7                                                                                      | 6.7                                                                                    | 0.7 $\frac{1}{2}$                           | 1800                                                      | —                    | —                     | 956   |                                                                                             |
|                      |       |                                 |                    | Mixer                                   |                                                                                                     |                         |                            | 250                                                                                        | —10v                                                          | 100                           | Conversion Transcond., 600 $\mu$ mhos<br>Osc. Peak Volts, 9                              |                                                                                        |                                             |                                                           |                      |                       |       |                                                                                             |
| 1.25                 | 0.05  | 1 $\frac{3}{8}$ "               | 1 $\frac{5}{32}$ " | Class A <sub>1</sub> Amplifier          | 135                                                                                                 | —                       | —                          | 135                                                                                        | —5v                                                           | —                             | —                                                                                        | 2                                                                                      | 20800                                       | 650                                                       | 13.5                 | —                     | 957   |                                                                                             |
| 1.25                 | 0.1   | 1 $\frac{3}{8}$ "               | 1 $\frac{5}{32}$ " | RF Amp. & Osc.<br>Class C Telegraphy    | 135                                                                                                 | 7                       | 0.6                        | 135                                                                                        | —20v                                                          | Grid Res.,<br>20000 Ohms      |                                                                                          | 7                                                                                      | DC Grid Ma., 1<br>Driving Power, 0.035 watt |                                                           |                      | 0.6                   | 958-A |                                                                                             |
| 1.25                 | 0.05  | 1 $\frac{7}{8}$ "               | 1 $\frac{5}{32}$ " | Class A <sub>1</sub> Amplifier          | 145                                                                                                 | —                       | —                          | 135                                                                                        | —3v                                                           | 67.5                          | 0.4                                                                                      | 1.7                                                                                    | 0.8 $\frac{1}{2}$                           | 600                                                       | —                    | —                     | 959   |                                                                                             |
| 6.3                  | 0.15  | 1 $\frac{3}{8}$ " <sup>♦</sup>  | 0.4                | RF Amp. & Osc.<br>Class C Telegraphy    | Max. DC Grid Volts, —55*<br>Max. DC Plate Volts, 165*<br>Max. Peak Heater Cathode Volts, $\pm$ 200* |                         |                            |                                                                                            |                                                               |                               |                                                                                          | Max. DC Grid Ma., 5.5*<br>Max. DC Plate Ma., 22*<br>Max. Plate Dissipation, 3.3 watts* |                                             |                                                           |                      |                       | 5718  |                                                                                             |
| 6.3                  | 0.2   | 1 $\frac{1}{2}$ " <sup>♦</sup>  | 0.4                | Class A <sub>1</sub> Amplifier          | —                                                                                                   | —                       | —                          | 120                                                                                        | 120                                                           | —                             | —                                                                                        | 12                                                                                     | 4000                                        | 5900                                                      | 24                   | —                     | 6026  |                                                                                             |
|                      |       |                                 |                    | 400 Mc Oscillator<br>Class C Telegraphy | 150*                                                                                                | —                       | 3*                         | 135                                                                                        | Grid Res., 1300 Ohms<br>DC Grid Ma., 9.5                      |                               | 20                                                                                       | —                                                                                      | —                                           | —                                                         | 1.25                 |                       |       |                                                                                             |
| 6.3                  | 0.15  | 1 $\frac{3}{4}$ "               | $\frac{3}{4}$ "    | Class A <sub>1</sub> Amplifier          | 250                                                                                                 | —                       | 0.5                        | 250                                                                                        | —3v                                                           | 100                           | 0.7                                                                                      | 2                                                                                      | 1.0+ $\frac{1}{2}$                          | 1400                                                      | —                    | —                     | 9001  |                                                                                             |
|                      |       |                                 |                    | Mixer                                   |                                                                                                     |                         |                            | 250                                                                                        | —5v                                                           | 100                           | Conversion Transcond., 550 $\mu$ mhos<br>Osc. Peak Volts, 4                              |                                                                                        |                                             |                                                           |                      |                       |       |                                                                                             |

†Microamperes.

\*Collector.

\*Excluding flexible leads.

ØMaximum Height 2 $\frac{3}{8}$ "<sup>2</sup>; Maximum Width 2 $\frac{3}{8}$ "<sup>2</sup>.

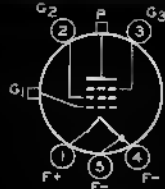
□Metal shell.

§ Megohms.

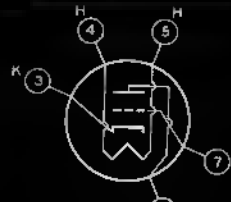
♦ Excluding flexible leads.

\* Absolute values.

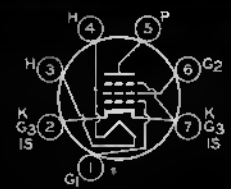
▲ Under conditions as RF Amplifier and Oscillator, Class C Telegraphy.

See Note 2  
957 958-ASee Note 1  
959

5718



6026



9001