

## TUNG-SOL

## PENTODE POWER AMPLIFIER

COATED UNIPOTENTIAL CATHODE

HEATERS

6F6, 6F6GT/G, 42 - 6.3 V., 0.7 AMPERE

2A5 - 2.5 V., 1.75 AMPERES

TYPES 6F6, 6F6GT/G, 2A5 AND 42 ARE PENTODE AMPLIFIERS DESIGNED FOR APPLICATION IN POWER OUTPUT STAGES OF RECEIVERS. WITH THE EXCEPTION OF HEATER RATINGS, THEIR ELECTRICAL CHARACTERISTICS ARE IDENTICAL.

## MAXIMUM RATINGS

|                                            | PENTODE<br>CONNECTION | TRIODE<br>CONNECTION |       |
|--------------------------------------------|-----------------------|----------------------|-------|
| MAXIMUM PLATE VOLTAGE                      | 375                   | 350                  | VOLTS |
| MAXIMUM SCREEN VOLTAGE                     | 285                   | -                    | VOLTS |
| MAXIMUM PLATE DISSIPATION                  | 11                    | -                    | WATTS |
| MAXIMUM SCREEN DISSIPATION                 | 3.75                  | -                    | WATTS |
| MAXIMUM TOTAL PLATE AND SCREEN DISSIPATION | -                     | 10                   | WATTS |

## TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

CLASS A<sub>1</sub> AMPLIFIER - SINGLE TUBE <sup>C</sup>

|                                   | PENTODE<br>CONNECTION | TRIODE<br>CONNECTION |              |
|-----------------------------------|-----------------------|----------------------|--------------|
| PLATE VOLTAGE                     | 250                   | 285                  | VOLTS        |
| SCREEN VOLTAGE                    | 250                   | 285                  | VOLTS        |
| CONTROL GRID VOLTAGE <sup>A</sup> | -16.5                 | -20                  | VOLTS        |
| PEAK AF SIGNAL VOLTAGE            | 16.5                  | 20                   | VOLTS        |
| ZERO-SIGNAL PLATE CURRENT         | 34                    | 31                   | MA.          |
| ZERO-SIGNAL SCREEN CURRENT        | 6.5                   | 7                    | MA.          |
| MAXIMUM-SIGNAL PLATE CURRENT      | 36                    | 40                   | MA.          |
| MAXIMUM-SIGNAL SCREEN CURRENT     | 10.5                  | 13                   | MA.          |
| PLATE RESISTANCE (APPROX.)        | 80000                 | 78000                | OHMS         |
| TRANSCONDUCTANCE                  | 2500                  | 2550                 | μMHOS        |
| AMPLIFICATION FACTOR              | -                     | -                    | 6.8          |
| LOAD RESISTANCE                   | 7000                  | 7000                 | 4000 OHMS    |
| TOTAL HARMONIC DISTORTION         | 8                     | 9                    | 6.5 PER CENT |
| POWER OUTPUT                      | 3.2                   | 4.8                  | 0.85 WATTS   |

PUSH-PULL AMPLIFIER - TWO TUBES <sup>P</sup>CLASS A<sub>1</sub> AMPLIFIER <sup>C</sup> CLASS AB<sub>2</sub> AMPLIFIER <sup>D</sup>

|                                            | PENTODE<br>CONNECTION | PENTODE<br>CONNECTION | TRIODE<br>CONNECTION |          |
|--------------------------------------------|-----------------------|-----------------------|----------------------|----------|
| PLATE VOLTAGE                              | 315                   | 375                   | 350                  | VOLTS    |
| SCREEN VOLTAGE                             | 285                   | 250                   | -                    | VOLTS    |
| CONTROL GRID VOLTAGE                       | -24 <sup>A</sup>      | -26                   | -38                  | VOLTS    |
| PEAK AF SIGNAL VOLTAGE (GRID TO GRID)      | 48                    | 82                    | 123                  | VOLTS    |
| ZERO-SIGNAL PLATE CURRENT                  | 62                    | 34                    | 48                   | MA.      |
| ZERO-SIGNAL SCREEN CURRENT                 | 12                    | 5                     | -                    | MA.      |
| MAXIMUM-SIGNAL PLATE CURRENT               | 80                    | 82                    | 92                   | MA.      |
| MAXIMUM-SIGNAL SCREEN CURRENT              | 19.5                  | 19.5                  | -                    | MA.      |
| EFFECTIVE LOAD RESISTANCE (PLATE TO PLATE) | 10000                 | 10000                 | 6000                 | OHMS     |
| TOTAL HARMONIC DISTORTION                  | 4                     | 3.5                   | 2                    | PER CENT |
| POWER OUTPUT                               | 11                    | 18.5                  | 13                   | WATTS    |

(CONTINUED NEXT PAGE)

## TUNG-SOL

## TYPICAL OPERATING CONDITIONS FOR CATHODE BIAS

CLASS A<sub>1</sub> AMPLIFIER<sup>C</sup>

CLASS AB<sub>2</sub> AMPLIFIER<sup>D</sup>

|                                           | SINGLE TUBE AMPLIFIER |              | PUSH-PULL AMPLI.           |                            | PUSH-PULL AMPLI.          |                           |       |
|-------------------------------------------|-----------------------|--------------|----------------------------|----------------------------|---------------------------|---------------------------|-------|
|                                           | Pentode Conn.         | Triode Conn. | Pentode Conn. <sup>F</sup> | Pentode Conn. <sup>F</sup> | Triode Conn. <sup>F</sup> | Triode Conn. <sup>F</sup> |       |
| Plate                                     | 250                   | 285          | 250                        | 315                        | 375                       | 350                       | Volts |
| Screen                                    | 250                   | 285          | -                          | 285                        | 250                       | -                         | Volts |
| Cathode Resistor                          | 410                   | -            | 650                        | 320                        | 340 <sup>B</sup>          | 730 <sup>B</sup>          | Ohms  |
| Peak A-F Grid Voltage                     | 16.5                  | 20           | 20                         | -                          | -                         | -                         | Volts |
| Peak A-F Grid-to-Grid Voltage             | -                     | -            | -                          | 58                         | 94                        | 132                       | Volts |
| Zero-Sig. Plate Cur.                      | 34                    | 38           | 31                         | 62                         | 54                        | 50                        | Ma.   |
| Max.-Sig. Plate Cur.                      | 35                    | 38           | 32                         | 73                         | 77                        | 60                        | Ma.   |
| Zero-Sig. Screen Cur.                     | 6.5                   | 7            | -                          | 12                         | 8                         | -                         | Ma.   |
| Max.-Sig. Screen Cur.                     | 9.7                   | 12           | -                          | 18                         | 18                        | -                         | Ma.   |
| Load Resistance                           | 7000                  | 7000         | 4000                       | -                          | -                         | -                         | Ohms  |
| Effective Load Resis.<br>(plate to plate) | -                     | -            | -                          | 10000                      | 10000                     | 10000                     | Ohms  |
| Total Harmonic Dist.                      | 8.5                   | 9            | 6.5                        | 3                          | 5                         | 3                         | %     |
| Max.-Sig. Power Output                    | 3.1                   | 4.5          | 0.8                        | 10.5                       | 19                        | 9                         | Watts |

<sup>A</sup> THE DC RESISTANCE IN THE GRID CIRCUIT, UNDER RATED MAXIMUM CONDITIONS, SHOULD NOT EXCEED 0.5 MEGOHM FOR SELF-BIAS OPERATION AND 0.1 MEGOHM FOR FIXED-BIAS OPERATION.

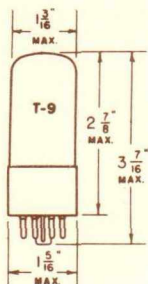
<sup>B</sup> THE VALUE GIVEN FOR THE CATHODE RESISTOR IS DETERMINED FOR A GRID BIAS OF -21 VOLTS.

<sup>C</sup> SUBSCRIPT 1 INDICATES THAT GRID CURRENT DOES NOT FLOW DURING ANY PART OF INPUT CYCLE.

<sup>D</sup> SUBSCRIPT 2 INDICATES THAT GRID CURRENT FLOWS DURING SOME PART OF INPUT CYCLE.

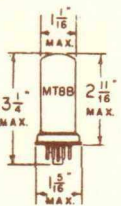
<sup>E</sup> THE VALUE GIVEN FOR THE CATHODE RESISTOR IS DETERMINED FOR A GRID BIAS OF -36.5 VOLTS.

<sup>F</sup> UNLESS OTHERWISE SPECIFIED, VALUES ARE FOR 2 TUBES.



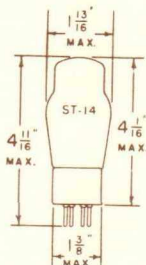
GLASS BULB

6F6GT/G



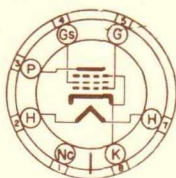
METAL SHELL

6F6

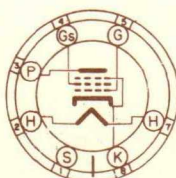


GLASS BULB

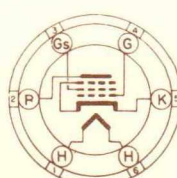
2A5 - 42



MEDIUM 7 PIN OCTAL BASE

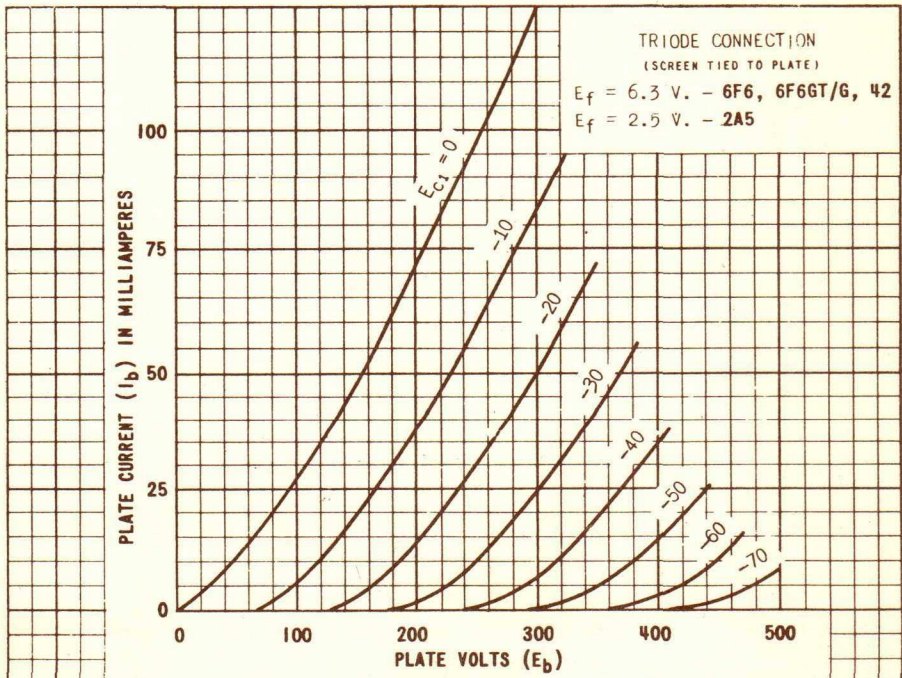
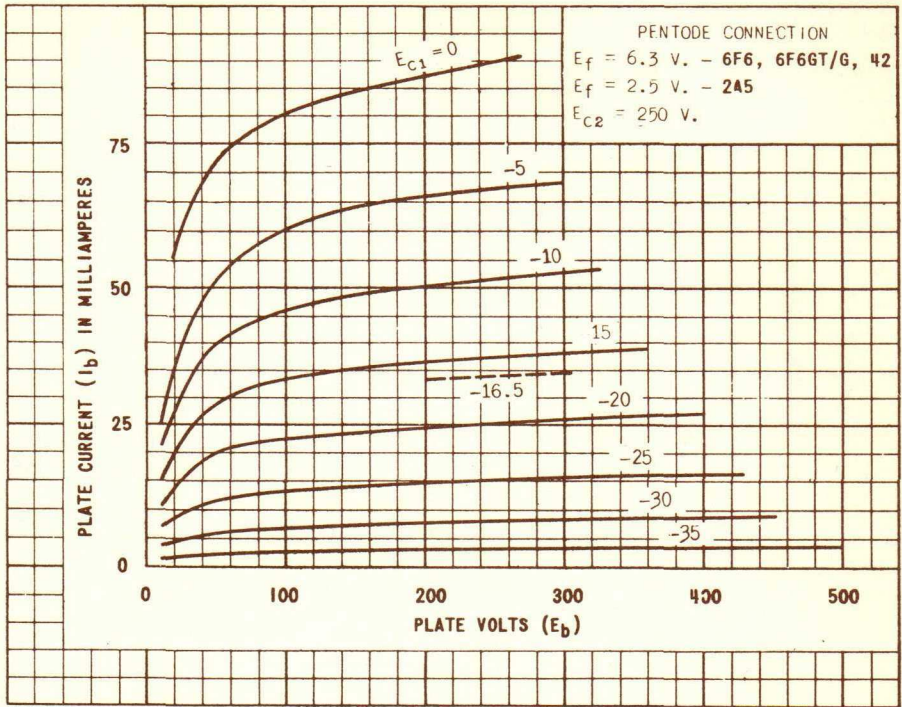


7 PIN OCTAL BASE



MEDIUM 6 PIN BASE

PLATE  
1386-1  
DEC. 15  
1943



6F6, 6F6GT/G (2A5, 42)

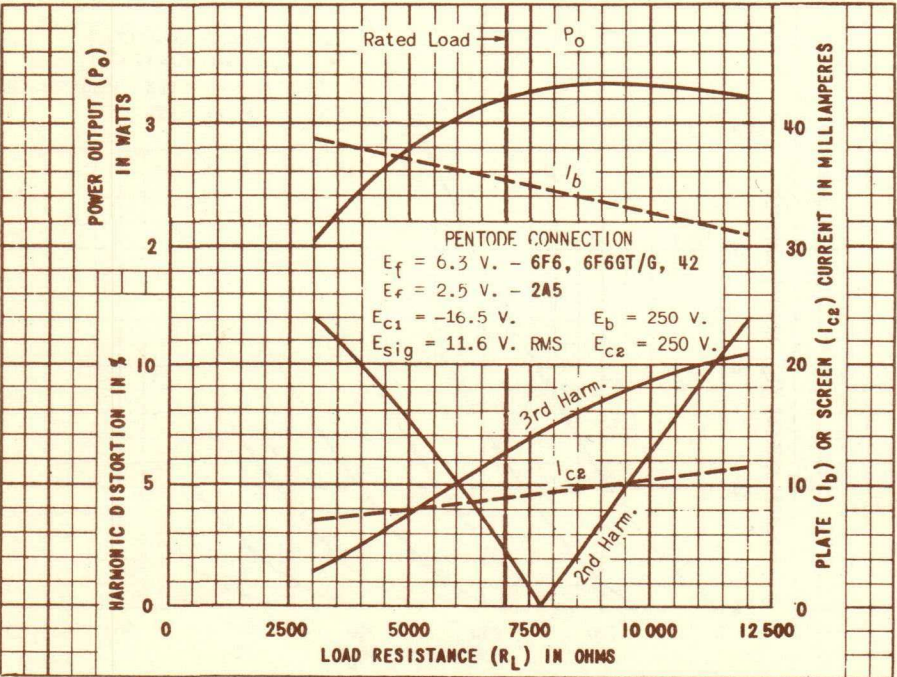
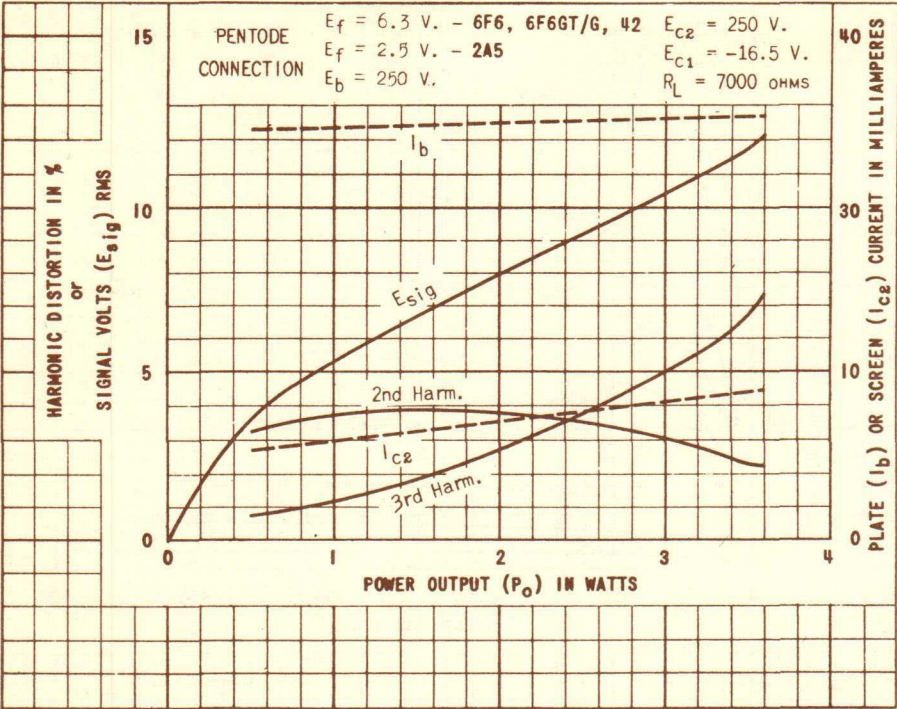


PLATE  
1340-1  
OCT. 25  
1943