



Quality Products. Service Excellence.

## Tube Output (10 - 280 Watts) 1608-1650 Series

Push-Pull - HI-FI



**Classic**

**RoHS**

### Features

- Please see our NEW & improved versions (**easy wire secondary series**).
- Designed for push-pull tube output circuits.
- Enclosed (shielded), 4 slot, above chassis Type "X" mounting.
- Frequency response 30 Hz. to 30 Khz. at full rated power (+/- 1 db max. - ref. 1 Khz) minimum.
- Insulated flexible leads 8" min.
- Manufactured with plastic coil forms for coil support and insulation.
- Typical applications - Push-Pull: triode, Ultra-Linear pentode, pentode and tetrode connected audio output.
- Due to the unique interleaving of the windings BOTH secondary windings must be engaged to meet specifications (see hook-up diagrams below).
- For the "ultimate" in Push-Pull output see our line of **epoxy potted output transformers**.

### 1645 Only

- **Secondary Connections** (Due to the unique interleaving of the windings **BOTH** secondary windings must be engaged to meet specifications)
- To hook up 4/8/16 ohm secondary loads - see schematic (do not use the white wire).
- To hook up secondary to 70V loads, jumper Blk/Yel wire to Grn wire. Connect load to Blk and White wires.

### Gallery



| Part No. | Audio Watts (RMS) | Primary Impedance (Ohms) | Maximum DC Per Side | Secondary Impedance (Ohms) | Dimensions |      |      | D    | E +/- 1/16" | G Slot       | Weight (lbs.) |
|----------|-------------------|--------------------------|---------------------|----------------------------|------------|------|------|------|-------------|--------------|---------------|
|          |                   |                          |                     |                            | A          | B    | C    |      |             |              |               |
| 1608     | 10                | 8,000 ct                 | 100 ma.             | 4-8-16                     | 2.50       | 2.75 | 3.06 | 2.00 | 1.69        | 0.20 x 0.38  | 2.5           |
| 1609     | 10                | 10,000 ct                | 100 ma.             | 4-8-16                     | 2.50       | 2.75 | 3.06 | 2.00 | 1.69        | 0.20 x 0.38  | 2.5           |
| 1615     | 15                | 5,000 ct                 | 100 ma.             | 4-8-16                     | 2.50       | 3.25 | 3.06 | 2.00 | 2.19        | 0.20 x 0.38  | 3.25          |
| 1620     | 20                | 6,600 ct                 | 158 ma.             | 4-8-16                     | 2.50       | 3.50 | 3.06 | 2.00 | 2.44        | 0.20 x 0.38  | 3.5           |
| 1650F    | 25                | 7,600 ct                 | 128 ma.             | 4-8-16                     | 2.50       | 3.50 | 3.06 | 2.00 | 2.44        | 0.20 x 0.38  | 4             |
| 1645     | 30                | 5,000 ct                 | 128 ma.             | 4-8-16-70V                 | 2.50       | 3.75 | 3.06 | 2.00 | 2.69        | 0.20 x 0.38  | 4.5           |
| 1650H    | 40                | 6,600 ct                 | 200 ma.             | 4-8-16                     | 3.13       | 4.00 | 3.81 | 2.50 | 2.69        | 0.20 x 0.38  | 6.5           |
| 1650K    | 50                | 3,400 ct                 | 318 ma.             | 4-8-16                     | 3.13       | 4.00 | 3.81 | 2.50 | 2.69        | 0.20 x 0.38  | 7             |
| 1650M    | 60                | 1,400CT/800CT            | 318 ma.             | 4-8-16                     | 3.13       | 4.19 | 3.80 | 2.50 | 2.94        | 0.20 x 0.38` | 7.5           |
| 1650N    | 60                | 4,300 ct                 | 318 ma.             | 4-8-16                     | 3.13       | 4.25 | 3.81 | 2.50 | 2.94        | 0.20 x 0.38  | 8             |
| 1650P    | 60                | 6,600 ct                 | 200 ma.             | 4-8-16                     | 3.13       | 4.25 | 3.81 | 2.50 | 2.94        | 0.20 x 0.38  | 8             |
| 1650R    | 100               | 5,000 ct                 | 318 ma.             | 4-8-16                     | 3.75       | 4.25 | 4.56 | 3.00 | 3.06        | 0.20 x 0.38  | 12            |
| 1650T    | 120               | 1,900 ct                 | 403 ma.             | 4-8-16                     | 3.75       | 4.50 | 4.56 | 3.00 | 3.31        | 0.20 x 0.38  | 14            |

| Part No. | Audio          | Primary             | Maximum        | Secondary           | Dimensions |      |      |      |                |           |   | Weight<br>(lbs.) |    |
|----------|----------------|---------------------|----------------|---------------------|------------|------|------|------|----------------|-----------|---|------------------|----|
|          | Watts<br>(RMS) | Impedance<br>(Ohms) | DC<br>Per Side | Impedance<br>(Ohms) | A          | B    | C    | D    | E<br>+/- 1/16" | G<br>Slot |   |                  |    |
| 1650W    | 280            | 1,900 ct            | 806 ma.        | 4-8-16              | 4.38       | 7.50 | 5.25 | 3.50 | 5.88           | 0.20      | x | 0.38             | 28 |

## Suggested Tube Types

| Part No. | Audio<br>Watts<br>(R.M.S.) | Primary<br>Impedance<br>(Ohms) | Operation                     | Suggested Tube Types                       |
|----------|----------------------------|--------------------------------|-------------------------------|--|
| 1608     | 10                         | 8,000 ct                       | Push-Pull (2 Tubes)           | 6AQ5, 6V6, 6BQ5, EL84, SV83                |
| 1609     | 10                         | 10,000 ct                      | Push-Pull (2 Tubes)           | 6AQ5, 6V6, 6BQ5, EL84, SV83                |
| 1615     | 15                         | 5,000 ct                       | Push-Pull (2 Tubes)           | 2A3, 6A3, 6AQ5, 6B4G, 6L6, 6V6             |
| 1620     | 20                         | 6,600 ct                       | Push-Pull (2 Tubes)           | 6AQ5, 6L6, 6V6                             |
| 1650F    | 25                         | 7,600 ct                       | Push-Pull (2 Tubes)           | 6L6GC, 6V6, 807, 5881, EL34                |
| 1645     | 30                         | 5,000 ct                       | Push-Pull (2 Tubes)           | 6L6GC, 6V6, 807, 5881, EL34                |
| 1650H    | 40                         | 6,600 ct                       | Push-Pull (2 Tubes)           | 6L6GC, 807, 5881, EL34                     |
| 1650K    | 50                         | 3,400 ct                       | Push-Pull Par. (4 Tubes)      | 6L6GC, 807, 5881, EL34, 6146B, 6550B       |
| 1650N    | 60                         | 4,300 ct                       | Push-Pull Par. (2 or 4 Tubes) | 6L6GC, 807, 5881, EL34, 6146B, 6550B, KT88 |
| 1650P    | 60                         | 6,600 ct                       | Push-Pull (2 Tubes)           | 6L6GC, 807, 5881, EL34, 6146B, 6550B, KT88 |
| 1650R    | 100                        | 5,000 ct                       | Push-Pull Par. (2 or 4 Tubes) | 807, 5881, EL34, 6146B, 6550B, KT88        |
| 1650T    | 120                        | 1,900 ct                       | Push-Pull Par. (4 or 6 Tubes) | 6L6GC, 5881, EL34, 6550B, KT88             |
| 1650W    | 280                        | 1,900 ct                       | Push-Pull Par. (6 or 8 Tubes) | 6L6GC, 5881, EL34, 6550B, KT88             |

**Notes:** The above examples of possible combinations are to help you narrow down the choices of transformers for your favorite tube types. How you operate the tubes (push-pull, push-pull parallel, ultra-linear, class, B+, bias, operating points, etc.) will change optimum plate to plate load impedance. Only a few of the most popular tubes are shown. As more tubes become available we will add them to the list. A tube manual or tube manufacturer's technical data sheets should be consulted first, before making a decision on a proper output transformer.

*Data subject to change without notice*

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