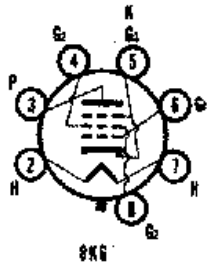
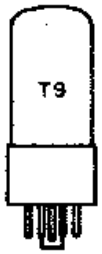
# 7591A

# AUDIO POWER AMPLIFIER

**Beam Power Pentode**

Construction .....Octal T-9
Base.....Octal 7 Pin, B7-233 or B8-142
Basing .....8KG
Outline .....9-11
Maximum Diameter .....1.188 In.
Maximum Seated Height .....2.750 In.
Maximum Overall Height .....3.312 In.




## ELECTRICAL DATA

### HEATER OPERATION

| | |
|---|---|
| Heater Voltage | 6.3 Volts |
| Heater Current | 800 Ma |
| Maximum Heater-Cathode Voltage | |
| Heater Negative with Respect to Cathode | |
| Total DC and Peak | 200 Volts |
| Heater Positive with Respect to Cathode | |
| DC | 100 Volts |
| Total DC and Peak | 200 Volts |

### DIRECT INTERELECTRODE CAPACITANCES (Unshielded)

| | |
|---|---|
| Grid No. 1 to Plate | 0.25 Pf |
| Input | 10 Pf |
| Output | 5.0 Pf |

### RATINGS (Design Maximum Rating System)

| | |
|---|---|
| Plate Voltage (Max.) | 550 Volts |
| Grid No. 2 Voltage (Max.) | 440 Volts |
| Plate Dissipation (Max.) | 19 Watts |
| Grid No. 2 Dissipation (Max.)(1) | 3.3 Watts |
| Cathode Current (Max.) | 85 Ma |
| Grid No. 1 Circuit Resistance | |
| Fixed Bias (Max.) | 0.3 Megohm |
| Self Bias (Max.) | 1.0 Megohm |

### CHARACTERISTICS AND TYPICAL OPERATION

| | Pentode Operation S. T.– Class A1 Amp. | Ultra-Linear Operation(2) Class AB1 - Push-Pull | |
|---|---|---|---|
| Plate Voltage | 300 | 400 | 425 Volts |
| Grid No. 2 Voltage | 300 | Note 2 | Note 2 Volts |
| Grid No. 1 Voltage | –10 | –20.5 | — Volts |
| Cathode Resistor | — | — | 185 Ohms |
| Peak AF Grid Voltage | 10 | 20.5 | 21 Volts |
| Zero Signal Plate Current | 60 | 80 | 88 Ma |
| Max. Signal Plate Current | 75 | 138 | 104 Ma |
| Zero Signal Grid No. 2 Current | 8 | 11.5 | 13 Ma |
| Max. Signal Grid No. 2 Current | 15 | 26.4 | 17.5 Ma |
| Transconductance | 10.2K | — | — μmhos |
| Plate Resistance (Approx.) | 29K | — | — Ohms |

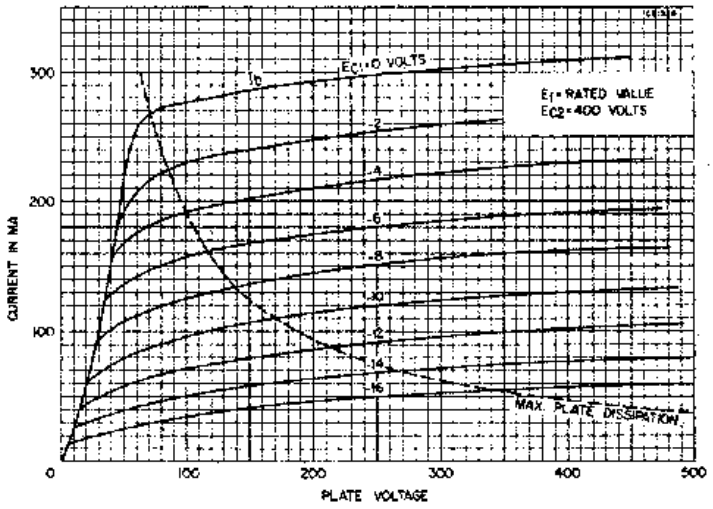
| | | | | | | |
|---|---|---|---|---|---|---|
| Load Resistance | | 3K | | — | | — Ohms |
| Load Resistance (PL to PL) | | — | | 6600 | | 6600 Ohms |
| Power Output | | 11 | | 32 | | 26 Watts |
| Total Harmonic Distortion | | 13 | | 1.0 | | 2 Percent |
| **Pentode Operation (Class AB1 Push-Pull Amp.)** | | | | | | |
| Plate Voltage | 300 | 350 | 400 | 450 | 450 | 450 Volts |
| Grid No. 2 Voltage | 300 | 350 | 350 | 350 | 400 | 400 Volts |
| Grid No. 1 Voltage | -12.5 | -15.5 | -16 | -16.5 | -21 | — Volts |
| Cathode Resistor | — | — | — | — | — | 200 Ohms |
| Peak AF Grid to Grid Voltage | 25 | 31 | 32 | 33 | 42 | 28 Volts |
| Zero Signal Plate Current | 86 | 92 | 85 | 77 | 66 | 82 Ma |
| Max. Signal Plate Current | 116 | 130 | 143 | 153 | 144 | 94 Ma |
| Zero Signal Grid No. 2 Current | 12.6 | 13 | 11 | 9.6 | 9.4 | 11.5 Ma |
| Max. Signal Grid No. 2 Current | 26 | 28.6 | 27 | 27 | 30 | 22 Ma |
| Load Resistance (PL to PL) | 6600 | 6600 | 6600 | 6600 | 6600 | 9000 Ohms |
| Power Output | 23 | 30 | 37 | 43 | 45 | 28 Watts |
| Total Harmonic Distortion | 2.4 | 2 | 1.5 | 1.5 | 1.5 | 2 Percent |

**NOTES:**

(1) Grid No. 2 Dissipation may be permitted to reach 6 watts during the periods of maximum input of speech and music signals. For efficient operation of Grid No. 2, the two Grid No. 2 connections, Pins 4 and 8, should be externally tied together.

(2) Grid No. 2 tapped at 40% of the primary winding.

**AVERAGE PLATE CHARACTERISTICS**

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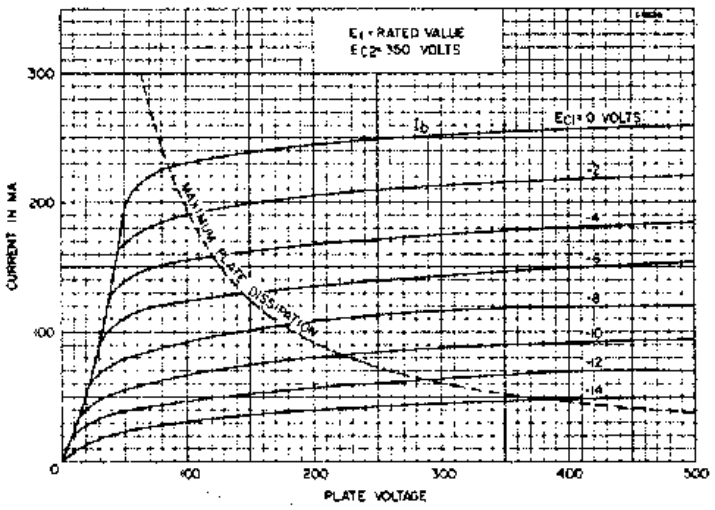

## AVERAGE TRANSFER CHARACTERISTICS