

ELECTRICAL DATA
HEATER OPERATION

Heater Voltage.....	6.3 Volts
Heater Current	300 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

Pentode Connection

	Shielded ⁽¹⁾	Unshielded
Grid No. 1 to Plate (Max.).....	0.0035	0.0035 Pf
Input: g1 to (h + k + g2 + g3 + IS).....	5.5	5.5 Pf
Output: p to (h + k + g2 + g3 + IS).....	5.0	5.0 Pf

Triode Connection ⁽²⁾

Grid to Plate: g1 to (p + g2 + g3 + IS)	2.6	2.6 Pf
Input: g1 to (h + k)	3.2	3.2 Pf
Output: p + g2 + g3 + IS to (h + k)	8.5	1.2 Pf

RATINGS (Design Center Rating System)

	Triode Conn. ⁽²⁾	Pentode Conn.
Plate Voltage (Max.)	250	300 Volts
Grid No. 2 Supply Voltage (Max.)	—	300 Volts
Grid No. 2 Voltage	See Rating Chart (Gen. Info. Sec.)	
Plate Dissipation (Max.)	3.2	3.0 Watts
Grid No. 2 Dissipation (Max.)	—	0.65 Watt
Positive Grid No. 1 Voltage (Max.)	0	0 Volt

CHARACTERISTICS AND TYPICAL OPERATION

	Triode Conn. ⁽²⁾	Pentode Connected		
Plate Voltage	250	100	250	250 Volts
Grid No. 3 Voltage	—	Connected to Cathode at Socket		
Grid No. 2 Voltage	—	100	125	150 Volts
Cathode Bias Resistor	330	150	100	68 Ohms
Plate Current	12.2	5.0	7.6	10.6 Ma
Grid No. 2 Current	—	2.1	3.0	4.3 Ma
Transconductance	4800	3900	4500	5200 μ mhos
Amplification Factor	36	—	—	—
Plate Resistance (Approx.)	—	0.5	1.5	1.0 Megohms
Ec1 for Ib = 10 μ a (Approx.)	—	-4.2	-5.5	-6.5 Volts

NOTES:

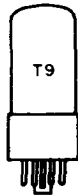
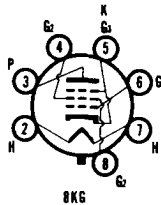
- (1) Shield No. 316 connected to Cathode Pin No. 7.
(2) When operated as a triode Grid No. 2 and Grid No. 3 should be tied to the plate.

AUDIO POWER AMPLIFIER

7591A

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	Volts
Grid No. 2 Voltage	300	350	350	350	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	Volts
Zero Signal Plate Current	86	92	85	77	66	Ma
Max. Signal Plate Current	116	130	143	153	144	Ma
Zero Signal Grid No. 2 Current	12.6	13	11	9.6	9.4	Ma
Max. Signal Grid No. 2 Current	26	28.6	27	27	30	Ma
Load Resistance (PL to PL)	6600	6600	6600	6600	6600	Ohms
Power Output	23	30	37	43	45	Watts
Total Harmonic Distortion	2.4	2	1.5	1.5	1.5	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.