

MECHANICAL DATA

Bulb	T-12
Base ¹	Low Loss Phenolic 5-Pin
Basing	5AW
Cathode	Unipotential
Mounting Position	Any

RATINGS

Shock (Intermittent Service-Abs. Max.)	450 g
Vibration (Continuous Service-Design Center)	2.5 g
Mechanical Resonance	None Below 100 cps

ELECTRICAL DATA

HEATER CHARACTERISTICS

Heater Voltage	6.3 Volts
Heater Current (Avg.)	900 Ma
Heater Current (Max.) ²	990 Ma
Heater Current (Min.) ²	810 Ma

DIRECT INTERELECTRODE CAPACITANCES

	Min. ²	Avg.	Max. ²
Control Grid to Plate (Shielded)			0.2 $\mu\mu\text{f}$
Input (Unshielded)	10	12	14 $\mu\mu\text{f}$
Output (Unshielded)	5.3	7	8.7 $\mu\mu\text{f}$

RATINGS (Design Center Values)

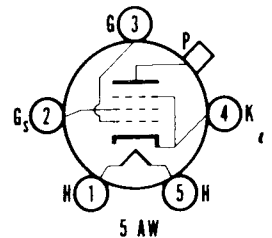
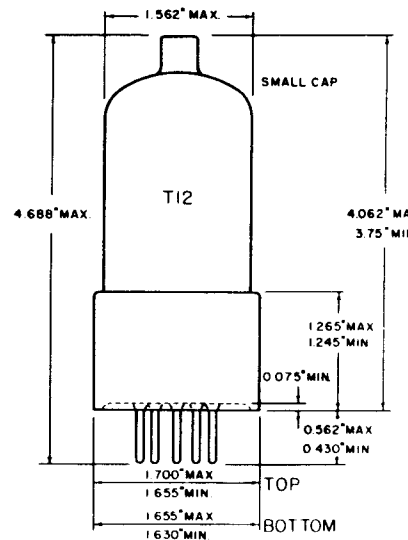
Plate Voltage (Class B, R F or A F)	600 Volts Max.
Plate Voltage (Class C, C W)	600 Volts Max.
Plate Voltage (Class C, Phone ³)	475 Volts Max.
Screen Voltage	300 Volts Max.
Control Grid Voltage (Class C)	-200 Volts Max.
Plate Dissipation (Class B, R F or A F)	25 Watts Max.
Plate Dissipation (Class C, C W)	25 Watts Max.
Plate Dissipation (Class C, Phone ³)	16.5 Watts Max.
Screen Dissipation (Class B, A F)	3.5 Watts Max.
Screen Dissipation (Class B, R F)	2.5 Watts Max.
Screen Dissipation (Class C, C W)	3.5 Watts Max.
Screen Dissipation (Class C, Phone ³)	2.5 Watts Max.
Plate Input (Class B, A F)	60 Watts Max.
Plate Input (Class B, R F)	37.5 Watts Max.
Plate Input (Class C, C W)	60 Watts Max.
Plate Input (Class C, Phone ³)	40 Watts Max.
Heater-Cathode Voltage	135 Volts Max.
Frequency for 100% Rating	60 Mc Max.
Frequency for 75% Rating (Class B, Class C Grid or Suppressor Modulated)	125 Mc Max.
Frequency for 55% Rating (Class C, or Plate Modulated)	125 Mc Max.

CHARACTERISTICS

	Min. ²	Avg.	Max. ²
Plate Voltage	—	600	— Volts
Screen Voltage	—	300	— Volts
Control Grid Voltage	—	-29	— Volts
Plate Current	24	36	48 Ma
Screen Current	—	—	4 Ma
Plate Current for E _c = -100 Volts	—	—	0.5 Ma
Power Output at 15 mc with Screen Volts = 200, I _b = 100 ma, I _c = 5 to 7 ma, R _L = 10,000 Ohms	33	—	— Watts

QUICK REFERENCE DATA

Rugged beam amplifier tube designed for use in mobile transmitters or amplifiers which may be subjected to shock or vibration.



SYLVANIA ELECTRIC PRODUCTS INC.

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TYPICAL OPERATION

Audio Amplifier or Modulator (Class AB₂) — Two Tubes

	CCS ⁴			ICAS ⁵
Plate Voltage	400	500	600	750 Volts
Screen Grid Voltage ⁶	300	300	300	300 Volts
Control Grid Voltage	-25	-29	-30	-32 Volts
Peak Grid to Grid Signal Voltage	78	86	78	92 Volts
Plate Current (Zero Signal)	90	72	60	52 Ma
Plate Current (Maximum Signal)	240	240	200	240 Ma
Screen Current (Zero Signal)	5	5	5	5 Ma
Screen Current (Maximum Signal)	10	10	10	10 Ma
Load Resistance (Plate to Plate)	3200	4240	6400	6950 Ohms
Driving Power (Maximum Signal) (approx.) ⁷	0.2	0.2	0.1	0.2 Watt
Power Output (approx.) ⁸	55	75	80	120 Watts

**RF Power Amplifier (Class B Telephony)
Single Tube — 100% Modulation of Driver Stage**

Plate Voltage	400	500	600	750 Volts
Screen Grid Voltage	250	250	250	300 Volts
Control Grid Voltage ⁹	-25	-25	-25	-35 Volts
Peak Signal Voltage	30	30	20	27 Volts
Plate Current	75	75	62.5	60 Ma
Screen Current	4	4	3	3 Ma
Control Grid Current (approx.)	0	0	0	0 Ma
Driving Power (approx.)	0.25	0.25	0.2	0.12 Watt
Power Output (approx.)	9	12.5	12.5	15 Watts

**RF Power Amplifier (Class C Telephony)
Single Tube — 100% Plate Modulation**

Plate Voltage	325	400	475	600 Volts
Screen Grid Voltage ¹⁰	225	225	225	275 Volts
Screen Dropping Resistor	20000	30000	50000	50000 Ohms
Control Grid Voltage ¹¹	-75	-80	-85	-90 Volts
Grid Leak Resistor	25000	22800	21300	22500 Ohms
Peak Signal Voltage	90	95	110	115 Volts
Plate Current	80	80	83	100 Ma
Screen Current	5	5.75	5	6.5 Ma
Grid Current (approx.)	3	3.5	4	4 Ma
Driving Power (approx.)	0.25	0.3	0.4	0.4 Watt
Power Output (approx.)	17.5	22.5	27.5	42.5 Watts

**RF Power Amplifier or Oscillator (Class C Telegraphy)
Single Tube Key Down Unmodulated Condition**

Plate Voltage	400	500	600	750 Volts
Screen Grid Voltage ¹²	250	250	250	250 Volts
Screen Dropping Resistor	20000	42000	50000	85000 Ohms
Control Grid Voltage ¹³	-45	-45	-45	-45 Volts
Peak Signal Voltage	65	65	65	65 Volts
Plate Current	100	100	100	100 Ma
Screen Current	7.5	6.0	7.0	6.0 Ma
Grid Current (approx.)	3.5	3.5	3.5	3.5 Ma
Driving Power (approx.)	0.2	0.2	0.2	0.2 Watt
Power Output (approx.)	25	30	40	50 Watts

NOTES:

1. Base dielectric loss factor is 0.1 maximum. Reference: ASTM Designation D-150-47T.
2. Extreme values which may be expected in production.
3. With plate modulation.
4. Continuous commercial service.
5. Intermittent commercial and amateur service.
6. May be obtained from a separate, well-regulated source or from the plate supply voltage if a voltage divider is used.
7. The effective grid circuit resistance should not exceed 500 ohms per grid, or the impedance 700 ohms.
8. Distortion in practical circuits should not exceed 5%, 5% and 3%, respectively, under CCS conditions.
9. The total effective grid circuit resistance should not exceed 25,000 ohms. May be obtained by either fixed bias or bypassed cathode resistor.
10. Generally obtained from the modulated plate supply through the specified resistor but a separate source properly modulated may be used.
11. Bias may be provided by any method. When grid leak bias is used the grid circuit resistance should not exceed the specified value.
12. May be obtained from the plate voltage supply through the specified dropping resistor or a separate supply may be provided.
13. Bias may be provided by use of 12,800 ohm grid leak, 410 ohm cathode resistor, fixed separate source, or combination of these. The grid circuit resistance should not exceed 25,000 ohms.

CIRCUIT APPLICATION

This type was primarily designed to make available the good characteristics of the Type 807 in a mechanical structure that could stand up under rough service. If it is desired to use this type for replacement in existing equipment, the effect of the different base diameter and bulb size (shown on the outline drawing) will require consideration.

AVERAGE PLATE CHARACTERISTICS

SYLVANIA

5933

807W

