

# TUNG-SOL

# PRODUCT BULLETIN

## R-F BEAM POWER TUBE

**DESCRIPTION** The 6907 is an all glass, UHF, twin tetrode transmitting tube designed to operate up to 600 megacycles. A compact, power sensitive, linear characteristic tube, the 6907 is rated for either 6.3 or 12.6 heater volts for use in both fixed station and mobile equipment. As a straight through RF amplifier at 150 megacycles, the 6907 will handle 90 watts input (more under ICAS ratings) with 20 watts total plate dissipation.

### ELECTRICAL DATA

	Min	Bogey	Max	
<b>Heater — Series Connected</b>				
Voltage .....	11.35	12.6	13.85	Volts
Current .....	0.55	0.65	0.75	Amperes
<b>Heater — Parallel Connected</b>				
Voltage .....	5.7	6.3	6.9	Volts
Current .....	1.1	1.3	1.5	Amperes
<b>Amplification Factor —</b>				
Grid No. 2—Grid No. 1 at $I_b = 20$ milliamperes.....	6.5	8.0	9.5	
<b>Transconductance —</b>				
At $I_b = 20$ milliamperes.....	—	2500	—	Micromhos
<b>Interelectrode Capacitances</b>				
Input — Each Section .....	6.0	6.5	7.0	Micromicrofarads
Output — Each Section .....	2.0	2.5	3.0	Micromicrofarads
Input — Push-pull .....	—	4.4	—	Micromicrofarads
Output — Push-pull .....	—	1.6	—	Micromicrofarads
Heater-Cathode Voltage .....	—	—	100	Volts

### MECHANICAL DATA

Mounting Position .....	Any
Maximum Bottom Seal Temperature.....	180 degrees Centigrade
Maximum Top Anode Seal Temperature.....	200 degrees Centigrade
Maximum Bulb temperature.....	250 degrees Centigrade
Base .....	Septar, JEDEC E7-20
Socket .....	E. F. Johnson Co., 122-105 or equal
Net Weight .....	2½ ounces

Plate connectors should be used that provide a high degree of heat transfer by radiation or by convection. Under normal conditions, natural cooling is sufficient with a plate voltage of:

- 600 volts at frequencies up to 150 magacycles
- 500 volts at frequencies up to 200 megacycles
- 300 volts at frequencies up to 470 megacycles.

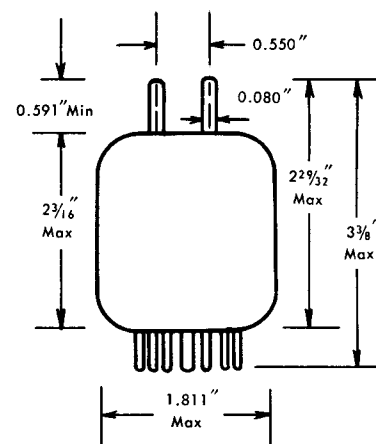
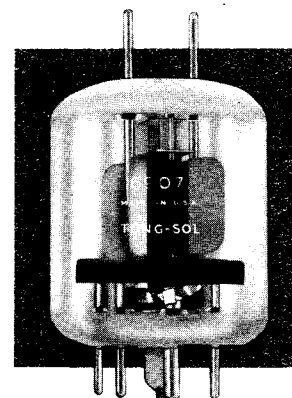
Above these limits or with high ambient temperatures, it may be necessary to direct an airflow of about 0.5 cubic foot-per-minute on top of the bulb to keep the anode seal within the stated limits.

### R-F POWER AMPLIFIER & OSCILLATOR — CLASS C TELEGRAPHY

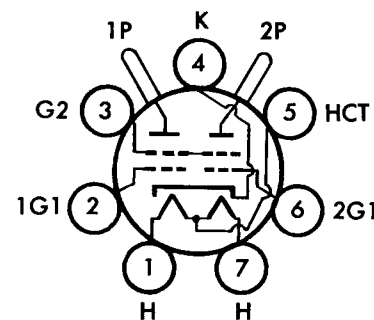
Key down conditions per tube without modulation — Note 1

#### TYPICAL OPERATION

	ccs				
Frequency .....	462	462	462	600	Megacycles
D-C Plate Voltage.....	200	300	400	400	Volts
D-C Grid No. 2 Voltage.....	200	250	250	250	Volts
D-C Grid No. 1 Voltage.....	—30	—40	—50	—50	Volts
D-C Plate Current.....	2x50	2x50	2x50	2x50	Milliamperes
D-C Grid No. 2 Current.....	2x3	2x2.5	2x2.5	2x2.5	Milliamperes
D-C Grid No. 1 Current—Approximate.....	2x0.5	2x0.6	2x0.7	2x0.7	Milliamperes
Driving Power .....	1.5	2.0	3.0	—	Watts
Power Output—Approximate .....	11	17	25	20	Watts



OUTLINE DRAWING



BOTTOM VIEW

# TYPE 6907

## FREQUENCY TRIPLER — CLASS C TELEGRAPHY

### TYPICAL OPERATION

	CCS			ICAS	
	66.7/200	133/400	154/462	154/462	
Frequency .....	66.7/200	133/400	154/462	154/462	Megacycles
D-C Plate Voltage.....	300	300	350	350	Volts
D-C Grid No. 2 Voltage.....	250	250	250	250	Volts
D-C Grid No. 1 Voltage.....	-175	-175	-175	-175	Volts
D-C Plate Current.....	2x45	2x45	2x45	2x55	Milliamperes
D-C Grid No. 2 Current.....	2x3	2x2.8	5.5	5	Milliamperes
D-C Grid No. 1 Current—Approximate.....	2x1.5	2x1.2	2x1.2	2x1.8	Milliamperes
Driving Power — Note 2.....	4	5	5	6	Watts
Power Output .....	10	8	9.5	11.5	Watts

## PLATE & SCREEN MODULATED R-F POWER AMPLIFIER — CLASS C TELEPHONY

Carrier conditions with two units in push-pull for use with a maximum modulation factor of 1.0

### TYPICAL OPERATION

	CCS	
Frequency .....	400	Megacycles
D-C Plate Voltage.....	300	Volts
D-C Grid No. 2 Voltage.....	250	Volts
D-C Grid No. 1 Voltage.....	-50	Volts
D-C Plate Current.....	2x40	Milliamperes
D-C Grid No. 2 Current.....	2x3	Milliamperes
D-C Grid No. 1 Current—Approximate.....	2x1	Milliamperes
Driving Power — Note 2.....	—	Watts
Power Output — Approximate .....	13	Watts

## A-F POWER AMPLIFIER & MODULATOR — CLASS B

### TYPICAL OPERATION

	CCS		
	11,000	20,000	
D-C Plate Voltage.....	300	500	Volts dc
Grid No. 2 Voltage.....	250	250	Volts dc
Grid No. 1 Voltage.....	-25	-26	Volts dc
Plate-to-Plate Effective Load Resistance.....	11,000	20,000	Ohms
Peak A-F Grid No. 1-to-Grid No. 1 Voltage.....	50	52	Volts
Zero Signal D-C Plate Current.....	2x12.5	2x12.5	Milliamperes
Maximum Signal D-C Plate Current.....	2x35	2x36.5	Milliamperes
Zero Signal D-C Grid No. 2 Current.....	2x0.6	2x0.35	Milliamperes
Maximum Signal D-C Grid No. 2 Current.....	2x9.5	2x8.1	Milliamperes
Maximum Signal Plate Input.....	21	36.5	Watts
Maximum Signal Plate Dissipation.....	2x3.9	2x6.5	Watts
Power Output .....	13.2	23.5	Watts
Distortion .....	3.5	3.5	Percent
Efficiency .....	63	63	Percent

#### NOTES:

1. Modulation essentially negative may be used if the positive peak of the envelope does not exceed 115 per cent of the carrier conditions.
2. Driving power includes typical fixed frequency grid-circuit loss.

