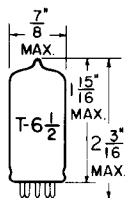


## TUNG-SOL

## DOUBLE TRIODE

MINIATURE TYPE



GLASS BULB

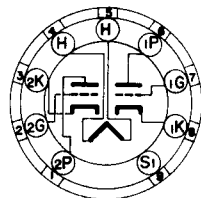
COATED UNIPOTENTIAL CATHODE

HEATER

6.3 VOLTS 0.4 AMP.

AC OR DC

ANY MOUNTING POSITION


**BOTTOM VIEW**  
 MINIATURE BUTTON  
 9 PIN NOVAL

9AJ

THE 6BQ7A IS A MEDIUM-MU DOUBLE TRIODE USING THE 9 PIN MINIATURE CONSTRUCTION. IT IS INTENDED FOR USE AS THE FIRST RF AMPLIFIER TUBE IN TUNERS OF VHF TELEVISION RECEIVERS OR AS A LOW NOISE IF PRE-AMPLIFIER TUBE IN UHF TELEVISION RECEIVERS EMPLOYING A CRYSTAL MIXER. HIGH TRANSCONDUCTANCE, LOW INPUT CAPACITANCE, LOW INPUT LOADING AND LOW PLATE TO CATHODE CAPACITANCE MAKES IT ESPECIALLY USEFUL IN THE DIRECT-COUPLED RF STAGE OF TELEVISION RECEIVERS UTILIZING A DRIVEN RF-GROUNDED-GRID AMPLIFIER OR THE CASCODE TYPE OF CIRCUIT.

## DIRECT INTERELECTRODE CAPACITANCES

WITH EXTERNAL SHIELD #315

	UNIT #1	UNIT #2	
GRID TO PLATE	1.15	1.15	$\mu\mu\text{f}$
INPUT	2.85	----	$\mu\mu\text{f}$
INPUT (GROUNDED GRID)	----	4.95	$\mu\mu\text{f}$
OUTPUT	1.35	----	$\mu\mu\text{f}$
OUTPUT (GROUNDED GRID)	----	2.27	$\mu\mu\text{f}$
PLATE TO CATHODE (MAX.)	0.15	0.15	$\mu\mu\text{f}$
HEATER TO CATHODE	2.65	2.70	$\mu\mu\text{f}$
PLATE OF UNIT #1 TO PLATE OF UNIT #2 (MAX.)		0.010	$\mu\mu\text{f}$
PLATE OF UNIT #2 TO PLATE AND GRID OF UNIT #1 (MAX.)		0.024	$\mu\mu\text{f}$

## RATINGS

INTERPRETED ACCORDING TO RMA STANDARD M8-210

CLASS  $A_2$  AMPLIFIER - EACH TRIODE UNIT

	DESIGN CENTER VALUES	
HEATER VOLTAGE	6.3	VOLTS
MAXIMUM HEATER CATHODE VOLTAGE:		
HEATER NEGATIVE WITH RESPECT TO CATHODE	200 <sup>A</sup>	VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE	200	VOLTS
MAXIMUM PLATE VOLTAGE	250 <sup>A</sup>	VOLTS
MAXIMUM PLATE DISSIPATION	2	WATTS
MAXIMUM CATHODE CURRENT	20	MA.
MAXIMUM GRID CIRCUIT RESISTANCE	0.5	MEGOMH

<sup>A</sup> UNDER CUT-OFF CONDITIONS, IN RF-GROUNDED-GRID CIRCUITS WITH DIRECT-COUPLED DRIVE, IT IS PERMISSIBLE FOR THIS VOLTAGE TO BE AS HIGH AS 300 VOLTS.

CONTINUED ON FOLLOWING PAGE

## TUNG-SOL

CONTINUED FROM PRECEDING PAGE

## TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

CLASS A<sub>1</sub> AMPLIFIER - EACH UNIT

	DESIGN CENTER VALUES	
HEATER VOLTAGE	6.3	VOLTS
HEATER CURRENT	0.4	AMP.
PLATE VOLTAGE	150	VOLTS
CATHODE BIAS RESISTOR	220	OHMS
AMPLIFICATION FACTOR	39	
PLATE RESISTANCE	6 100	OHMS
TRANSCONDUCTANCE	6 400	μMHOS
PLATE CURRENT	9	MA.
GRID VOLTS (APPROX.) FOR I <sub>b</sub> = 10 μAMP.	-10	VOLTS

PUSH-PULL RF GROUNDED GRID CIRCUIT - EACH UNIT

HEATER VOLTAGE	6.3	VOLTS
HEATER CURRENT	0.4	AMP.
PLATE VOLTAGE	150	VOLTS
GRID VOLTAGE (OBTAINED FROM CATHODE RESISTOR)	-2	VOLTS
CATHODE RESISTOR (COMMON TO BOTH UNITS)	100	OHMS
PLATE CURRENT	10	MA.

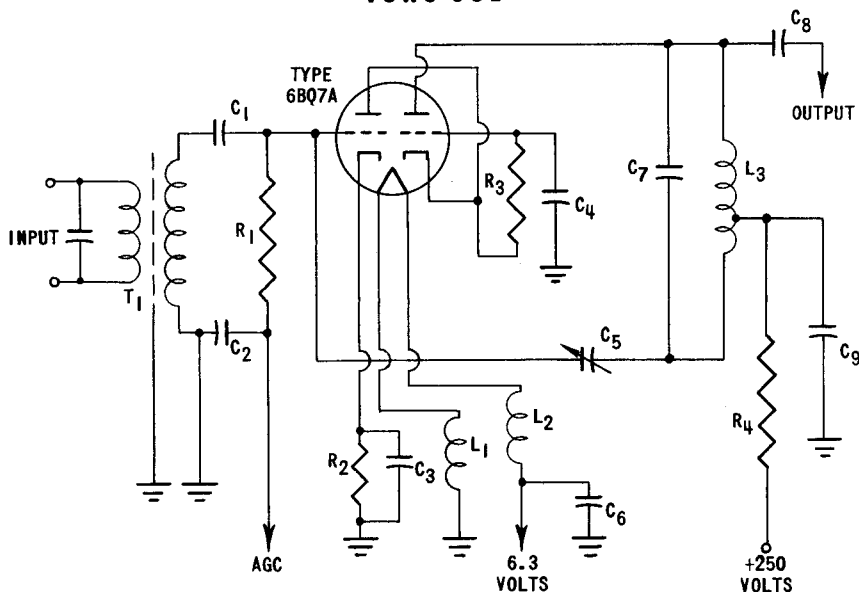
RF GROUNDED GRID CIRCUIT WITH DIRECT-COUPLED DRIVE

UNIT #1 (DRIVER TUBE) IS DIRECTLY COUPLED TO UNIT #2 (DRIVEN RF-GROUNDED-GRID AMPLIFIER TUBE) AS SHOWN IN ACCOMPANYING CIRCUIT.

	UNIT #1	UNIT #2	
HEATER VOLTAGE	6.3	6.3	VOLTS
HEATER CURRENT	0.4	0.4	AMP.
PEAK HEATER CATHODE VOLTAGE: HEATER NEGATIVE WITH RESPECT TO CATHODE	1	250	VOLTS
PLATE SUPPLY VOLTAGE	250	250	VOLTS
PLATE VOLTAGE	135	115	VOLTS
GRID VOLTAGE	-1	---	VOLTS
GRID RESISTOR	---	0.5	MEGOHM
PLATE CURRENT	10	10	MA.
GRID CURRENT	0	0	MA.
GRID VOLTAGE (APPROX.) FOR I <sub>b</sub> = 10 μAMP.	-14	---	VOLTS

→ INDICATES A CHANGE.

TUNG-SOL

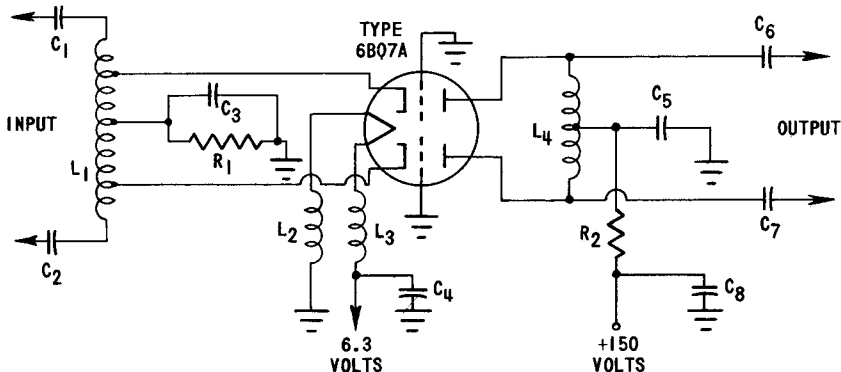


- C1: 33 uuf, 400 VOLTS
- C2: 1000 uuf, 400 VOLTS
- C3: 1000 uuf, 400 VOLTS
- C4: 1000 uuf, 400 VOLTS
- C5: 0.5 to 1.5 uuf, 400 VOLTS
- C6: 1000 uuf, 400 VOLTS
- C7: 2 uuf, 400 VOLTS
- C8: 33 uuf, 400 VOLTS
- C9: 1000 uuf, 400 VOLTS

- L1, L2: BIFILAR CHOKES, EACH 10 TURNS NO. 18 ENAMEL WIRE 1/4" COIL FORM
- L3: TUNED CIRCUIT ELEMENT OF TUNER. VALUE DEPENDS ON DISTRIBUTED CIRCUIT CAPACITANCES. TO DETERMINE TAP POINT, TAP DOWN TO 80 TO 90% OF TOTAL NUMBER OF TURNS

- R1: 10000 OHMS, 0.5 WATT
- R2: 100 OHMS, 0.5 WATT
- R3: 500000 OHMS, 0.5 WATT
- R4: 100 OHMS, 0.5 WATT
- T1: TUNED CIRCUIT ELEMENT OF TUNER. VALUE DEPENDS ON DISTRIBUTED CIRCUIT CAPACITANCES.

DRIVEN RF-GROUNDED GRID AMPLIFIER CIRCUIT WITH DIRECT COUPLED DRIVE



- C1 C2 C3 C4 C5: 1000 uuf, 400 VOLTS
- C6 C7: 100 uuf, 400 VOLTS
- C8: 1000 uuf, 400 VOLTS

- L1 L4: TUNED CIRCUIT ELEMENTS OF TUNER. VALUES DEPEND ON DISTRIBUTED CIRCUIT CAPACITANCES.

- L2 L3: BIFILAR CHOKES, EACH 10 TURNS OF NO. 18 ENAMEL WIRE, 1/4" COIL FORM.
- R1 R2: 100 OHMS, 0.5 WATT

PUSH-PULL RF GROUNDED-GRID CIRCUIT

