

## TUNG-SOL

## DOUBLE TRIODE

MINIATURE TYPE

COATED UNIPOTENTIAL CATHODES

HEATER

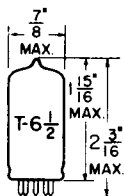
## SERIES

12.6 VOLTS  
150 MA.

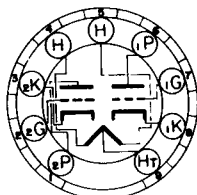
## PARALLEL

6.3 VOLTS  
300 MA.

AC OR DC



GLASS BULB


**BOTTOM VIEW**  
 SMALL BUTTON  
 9 PIN BASE  
 9A

FOR 12.6 VOLT OPERATION APPLY HEATER VOLTAGE BETWEEN PINS #4 AND #5. FOR 6.3 VOLT OPERATION APPLY HEATER VOLTAGE BETWEEN PIN #9 AND PINS #4 AND #5 CONNECTED TOGETHER.

ANY MOUNTING POSITION

THE 12AT7 COMBINES TWO HIGH TRANSCONDUCTANCE TRIODES IN A 9 PIN MINIATURE CONSTRUCTION. ITS LOW CAPACITANCE AND HIGH RATIO OF PLATE CURRENT TO TRANSCONDUCTANCE ADAPT IT TO USE AS A HIGH FREQUENCY COMBINED OSCILLATOR AND MIXER OR AS A GROUNDED GRID RADIO FREQUENCY AMPLIFIER.

## DIRECT INTERELECTRODE CAPACITANCES

	WITHOUT SHIELD	WITH SHIELD #316 <sup>A</sup>	
INPUT: G TO (H+K) (EACH SECTION)	2.2	2.2	μμf
OUTPUT: P TO (H+K) (SECTION #1)	0.5	1.2	μμf
(SECTION #2)	0.4	1.5	μμf
GRID TO PLATE: (G TO P) (EACH SECTION)	1.5	1.5	μμf
HEATER TO CATHODE: (H TO K) (EACH SECTION)	2.4	2.4	μμf

	WITHOUT SHIELD	WITH SHIELD #316 <sup>B</sup>	
INPUT: K TO (H+G) (EACH SECTION)	4.6	4.6	μμf
OUTPUT: P TO (H+G) (EACH SECTION)	1.8	2.6	μμf
PLATE TO CATHODE (P TO K) (EACH SECTION)	0.2	0.2	μμf

<sup>A</sup> CONNECTED TO CATHODE OF SECTION UNDER TEST.

<sup>B</sup> CONNECTED TO GRID OF SECTION UNDER TEST.

## RATINGS

INTERPRETED ACCORDING TO RMA STANDARD MB-210

## EACH TRIODE UNIT

HEATER VOLTAGE	12.6	6.3	VOLTS
MAXIMUM HEATER-CATHODE VOLTAGE	90		VOLTS
MAXIMUM PLATE VOLTAGE	300		VOLTS
MAXIMUM NEGATIVE DC GRID VOLTAGE	-50		VOLTS
MAXIMUM PLATE DISSIPATION	2.5		WATTS

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→ INDICATES A CHANGE OR ADDITION.

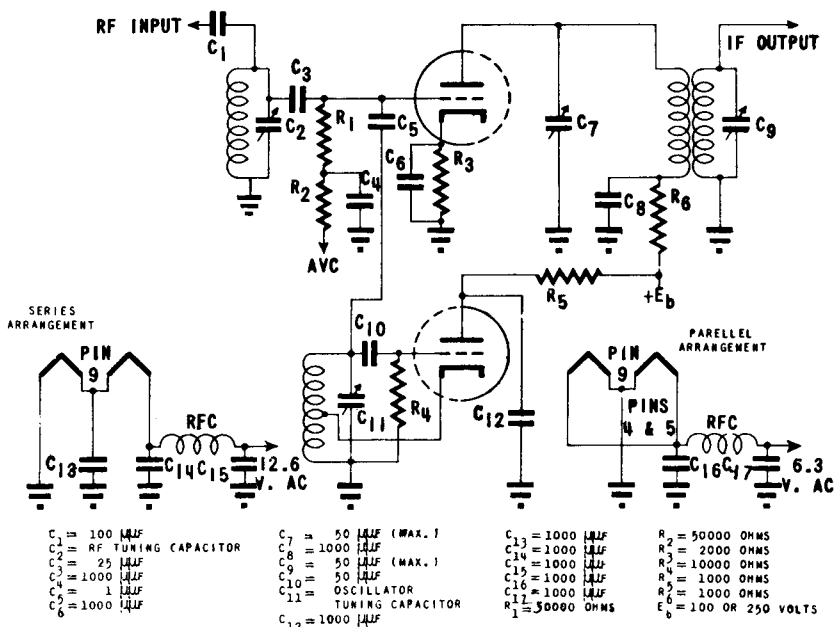
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### TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

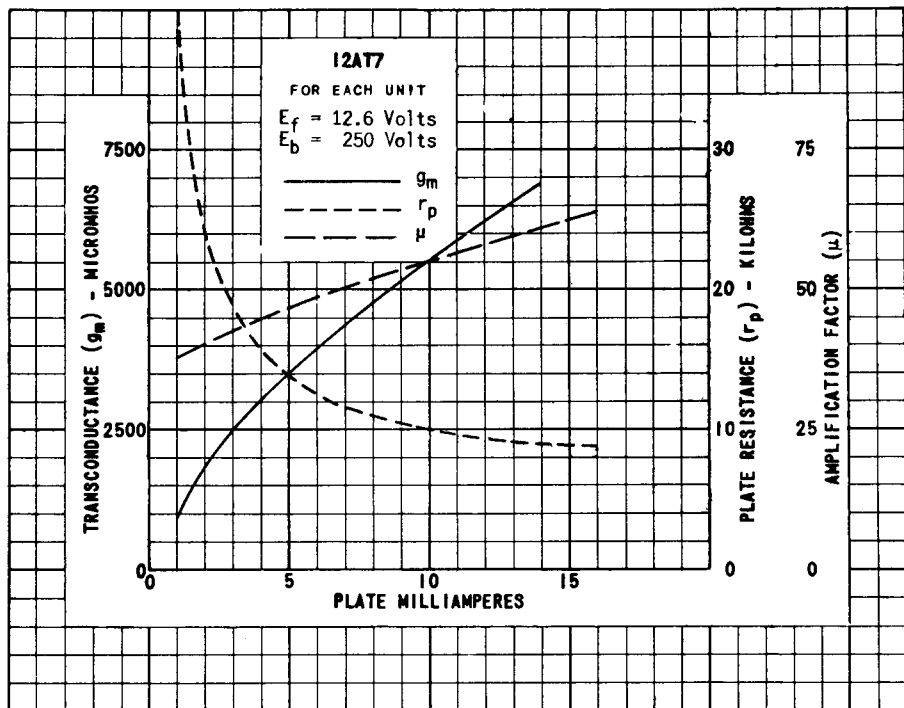
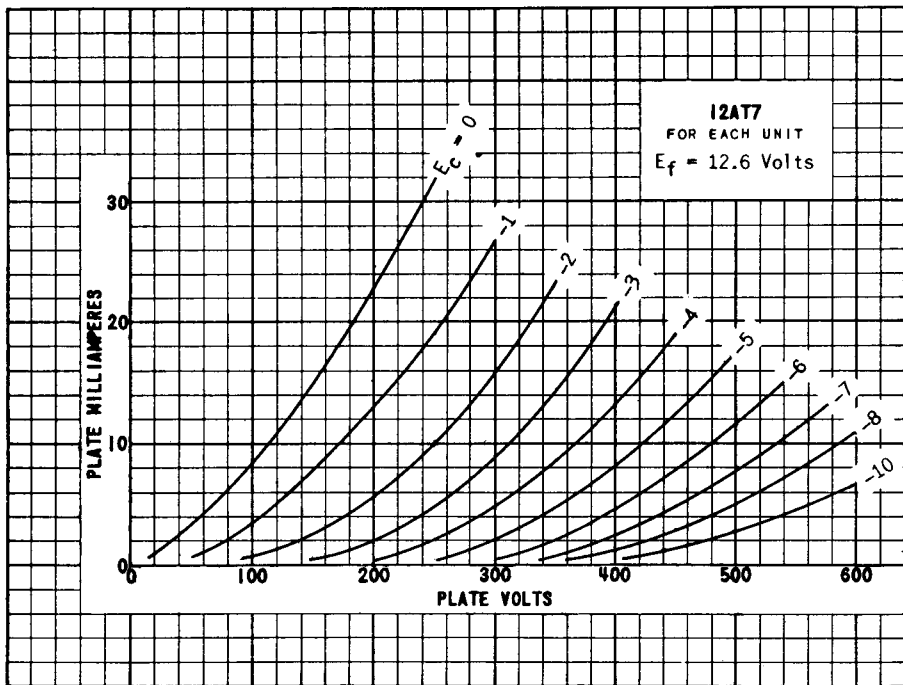
#### CLASS A<sub>1</sub> AMPLIFIER - EACH TRIODE UNIT

HEATER VOLTAGE	12.6	6.3	12.6	6.3	VOLTS
HEATER CURRENT	150	300	150	300	MA.
PLATE VOLTAGE		100		250	VOLTS
CATHODE BIAS RESISTOR		270		200	OHMS
PLATE CURRENT		3.7		10	MA.
PLATE RESISTANCE		15 000		10 900	OHMS
TRANSCONDUCTANCE		4 000		5 500	μMHOS
AMPLIFICATION FACTOR		60		60	
GRID VOLTAGE (APPROX.) FOR $I_b = 10 \mu A.$		-5		-12	VOLTS

#### TYPICAL CIRCUIT FOR CONVERTER OPERATION AT 100 MEGACYCLES



OSCILLATOR VOLTAGE APPLIED TO MIXER SHOULD BE JUST SUFFICIENT TO CAUSE GRID CURRENT TO FLOW IN THE MIXER SECTION.



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