

TUNG-SOL

DOUBLE TRIODE

MINIATURE TYPE

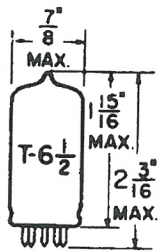
COATED UNIPOTENTIAL CATHODES

HEATER

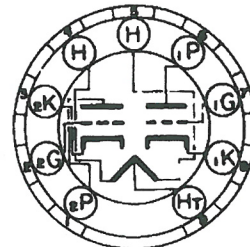
SERIES
12.6 VOLTS
150 MA.

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 ^A	
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 ^B	
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

^A CONNECTED TO CATHODE OF SECTION UNDER TEST.

^B 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.

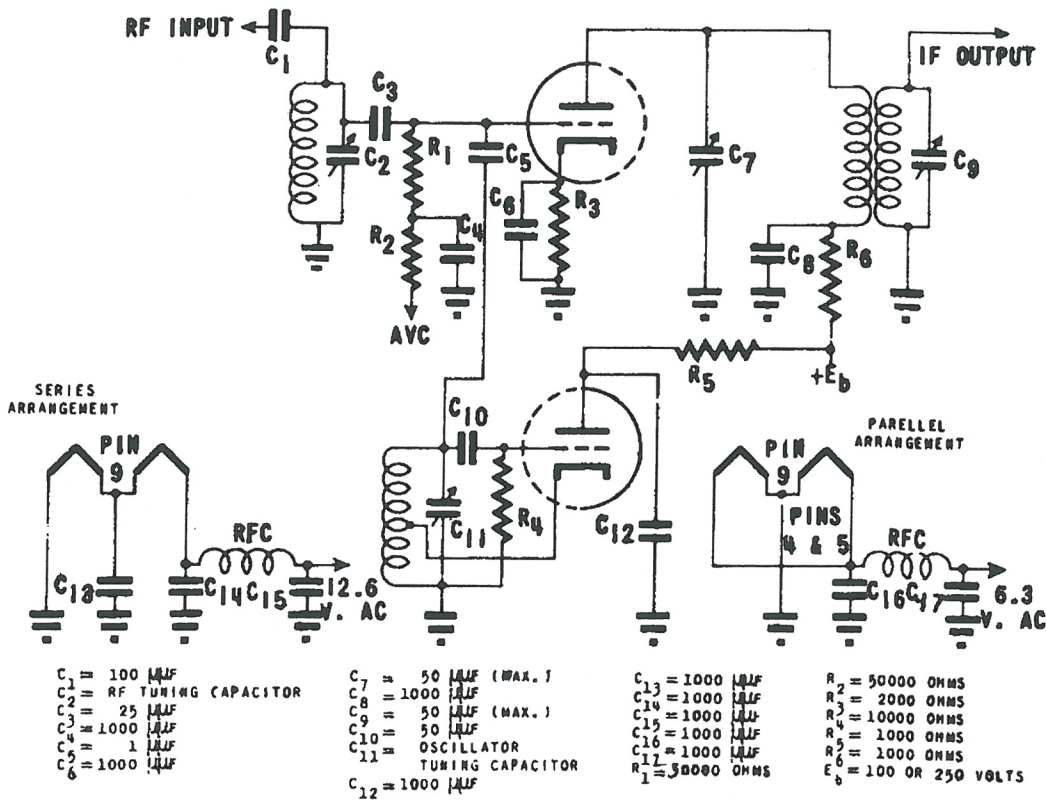
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TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

CLASS A₁ 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		μMHMS
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.

