

TUNG-SOL

TRIODE

MINIATURE TYPE

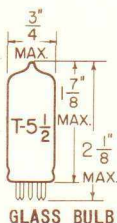
COATED UNIPOTENTIAL CATHODE

HEATER

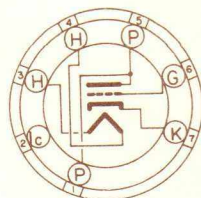
6.3 VOLTS 0.15 AMP.

AC OR DC

ANY MOUNTING POSITION



GLASS BULB



BOTTOM VIEW

MINIATURE BUTTON
7 PIN BASE

6B8

THE 6C4 IS A LOW-MU TRIODE VOLTAGE AMPLIFIER OF THE MINIATURE TYPE. IT IS PARTICULARLY USEFUL AS A HIGH FREQUENCY LOW-POWER OSCILLATOR DUE TO ITS HIGH TRANSCONDUCTANCE, LOW CAPACITANCES AND LEAD INDUCTANCES. LOW HEATER POWER REQUIREMENTS MAKE IT ATTRACTIVE FOR USE IN PORTABLE AND ALSO IN SERIES-HEATER CONNECTED CIRCUITS.

DIRECT INTERELECTRODE CAPACITANCES

	WITH ^A SHIELD	WITHOUT SHIELD	
GRID TO PLATE: (G TO P)	1.4	1.6	$\mu\mu\text{f}$
INPUT: G TO (H+K)	1.8	1.8	$\mu\mu\text{f}$
OUTPUT: P TO (H+K)	2.5	1.3	$\mu\mu\text{f}$

RATINGS

INTERPRETED ACCORDING TO DESIGN CENTER SYSTEM

	CLASS A ₁ AMPLIFIER	CLASS C TELEGRAPHY	
HEATER VOLTAGE	6.3		VOLTS
MAXIMUM HEATER-CATHODE VOLTAGE: ←			
HEATER NEGATIVE WITH RESPECT TO CATHODE:			
TOTAL DC AND PEAK	200		VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE:			
DC	100		VOLTS
TOTAL DC AND PEAK	200		VOLTS
MAXIMUM PLATE VOLTAGE	300	300	VOLTS
MAXIMUM NEGATIVE DC GRID VOLTAGE	---	-50	VOLTS
MAXIMUM PLATE DISSIPATION	3.5	5	WATTS
MAXIMUM DC PLATE CURRENT	---	25	MA.
MAXIMUM DC GRID CURRENT	---	8	MA.
MAXIMUM GRID CIRCUIT RESISTANCE:			
FIXED BIAS OPERATION	0.25	0.25	MEGOHM
CATHODE BIAS OPERATION	1.0	1.0	MEGOHM

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

CLASS A₁ AMPLIFIER

HEATER VOLTAGE	6.3	6.3	VOLTS
HEATER CURRENT	0.15	0.15	AMP.
PLATE VOLTAGE	100	250	VOLTS
GRID VOLTAGE ^B	0	-8.5	VOLTS
AMPLIFICATION FACTOR	19.5	17	
PLATE RESISTANCE	6 250	7 700	OHMS
TRANSCONDUCTANCE	3 100	2 200	μMHOS
PLATE CURRENT	11.8	10.5	MA.
GRID VOLTAGE FOR $I_b = 10 \mu\text{A}$. (APPROX.)	-10	-25	VOLTS

^B TRANSFORMER OR IMPEDANCE-TYPE INPUT COUPLING DEVICES ARE RECOMMENDED TO MINIMIZE RESISTANCE IN THE GRID CIRCUIT.

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↑ INDICATES A CHANGE

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TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

CLASS C - TELEGRAPHY^C

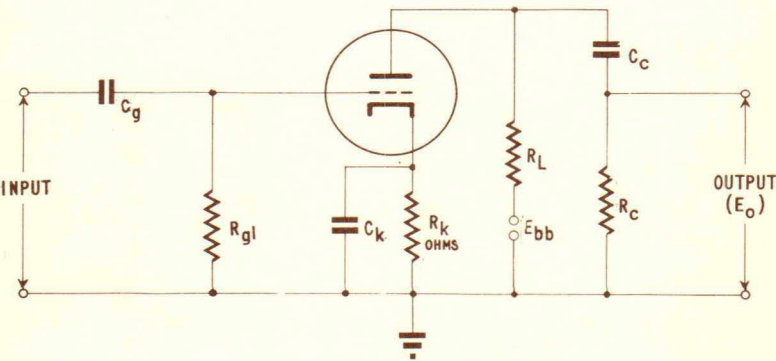
HEATER VOLTAGE	6.3	VOLTS
HEATER CURRENT	0.15	AMP.
PLATE VOLTAGE	300	VOLTS
GRID VOLTAGE	-27	VOLTS
PLATE CURRENT	25	MA.
GRID CURRENT (APPROX.)	7	MA.
GRID DRIVING POWER (APPROX.)	0.35	WATT
POWER OUTPUT (APPROX.)	5.5	WATTS

^C APPROXIMATELY 2.5 WATTS OUTPUT CAN BE OBTAINED WHEN THE 6C4 IS USED AT 150 MEGACYCLES AS AN OSCILLATOR WITH A GRID RESISTOR OF 10,000 OHMS AND WITH MAXIMUM RATED INPUT.

RESISTANCE COUPLED AMPLIFIER

R_L MEG.	R_{g1} MEG.	R_c MEG.	$E_{bb} = 90 \text{ VOLTS}$			$E_{bb} = 180 \text{ VOLTS}$			$E_{bb} = 300 \text{ VOLTS}$		
			R_k	GAIN	E_o	R_k	GAIN	E_o	R_k	GAIN	E_o
0.10	A	0.10	3000	11	12	2000	12	23	1600	13	34
0.10	A	0.24	3300	12	15	2400	12	30	1800	13	40
0.24	A	0.24	7500	12	14	4700	13	25	3600	13	37
0.24	A	0.51	8200	12	16	6200	13	32	4300	13	43
0.51	A	0.51	12000	12	13	8200	13	24	6200	13	33
0.51	A	1.0	13000	12	15	9100	13	28	6800	13	36
0.24	10	0.24	---	13	12	----	15	24	----	16	35
0.24	10	0.51	---	14	15	----	16	28	----	17	49
0.51	10	0.51	---	14	13	----	15	25	----	17	40
0.51	10	1.0	---	14	16	----	16	32	----	17	54

^A VALUE OF R_{g1} IS NOT CRITICAL.
GAIN MEASURED AT $E_o = 2.0$ VOLTS RMS OUTPUT.
 E_o IS RMS OUTPUT FOR 5% TOTAL HARMONIC DISTORTION.



NOTE: COUPLING CAPACITORS C_g AND C_c SHOULD BE SELECTED TO GIVE DESIRED FREQUENCY RESPONSE. R_k SHOULD BE ADEQUATELY BY-PASSED BY CAPACITOR C_k .