

TUNG-SOL

TWIN TRIODE

MINIATURE TYPE

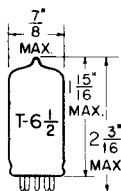
UNIPOTENTIAL CATHODE

HEATER

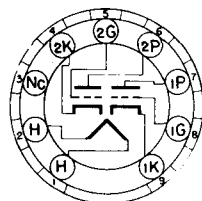
6.3±10% VOLTS 0.3 AMP.

AC OR DC

ANY MOUNTING POSITION



GLASS BULB



BOTTOM VIEW

SMALL-BUTTON NOVAL
9 PIN BASE
9LS

THE 6EU7 IS A HIGH-MU TWIN TRIODE IN THE 9 PIN MINIATURE CONSTRUCTION. IT IS ESPECIALLY DESIGNED FOR USE IN HIGH-GAIN RESISTANCE-COUPLED LOW-LEVEL AUDIO-AMPLIFIER APPLICATIONS, SUCH AS PREAMPLIFIERS FOR MONOPHONIC AND STEREOPHONIC PHONOGRAPHS, AND MICROPHONE AMPLIFIERS. THE BASING ARRANGEMENT ENABLES THE CIRCUIT DESIGNER TO OBTAIN GOOD ISOLATION BETWEEN CHANNELS WHEN THE TUBE IS USED IN A STEREO SYSTEM.

DIRECT INTERELECTRODE CAPACITANCES

WITHOUT EXTERNAL SHIELD

	UNIT #1	UNIT #2	
GRID TO PLATE	1.5	1.5	$\mu\mu\text{f}$
GRID TO CATHODE AND HEATER	1.6	1.6	$\mu\mu\text{f}$
PLATE TO CATHODE AND HEATER	0.2	0.2	$\mu\mu\text{f}$

RATINGS

INTERPRETED ACCORDING TO DESIGN MAXIMUM SYSTEM

AMPLIFIER - CLASS A₁

VALUES ARE FOR EACH UNIT

HEATER VOLTAGE	6.3±10%	VOLTS
MAXIMUM PLATE VOLTAGE	330	VOLTS
MAXIMUM GRID VOLTAGE:		
NEGATIVE BIAS VALUE	55	VOLTS
POSITIVE BIAS VALUE	0	VOLTS
MAXIMUM PLATE DISSIPATION	1.2	WATTS
MAXIMUM PEAK HEATER-CATHODE VOLTAGE:		
HEATER NEGATIVE WITH RESPECT TO CATHODE	200 ^A	VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE	200 ^A	VOLTS

^A THE DC COMPONENT MUST NOT EXCEED 100 VOLTS.

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TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

CLASS A₁ AMPLIFIER

HEATER VOLTAGE	6.3±10%	VOLTS
HEATER CURRENT	0.3	AMP.
PLATE VOLTAGE	100 250	VOLTS
GRID VOLTAGE	-1 -2	VOLTS
AMPLIFICATION FACTOR	100 100	
PLATE RESISTANCE (APPROX.)	80 000 62 500	OHMS
TRANSCONDUCTANCE	1 250 1 600	μMHOS
PLATE CURRENT	0.5 1.2	MA.

EQUIVALENT NOISE AND HUM VOLTAGE

REFERENCED TO GRID, EACH UNIT

AVERAGE VALUE	RMS	1.8	μVOLTS
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- MEASURED IN "TRUE RMS" UNITS UNDER THE FOLLOWING CONDITIONS; HEATER VOLTAGE OF 6.3 VOLTS AC; CENTER TAP OF HEATER TRANSFORMER GROUNDED; PLATE SUPPLY VOLTAGE, 250 VOLTS DC; PLATE LOAD RESISTOR, 100,000 OHMS; CATHODE RESISTOR, 2700 OHMS BYPASSED BY 100-μF CAPACITOR GRID RESISTOR, 0 OHMS; AND AMPLIFIER COVERING FREQUENCY RANGE BETWEEN 25 AND 10,000 CPS.

- B. DESIGN MAXIMUM RATINGS ARE LIMITING VALUES OF OPERATING AND ENVIRONMENTAL CONDITIONS APPLICABLE TO A BOGEY ELECTRON DEVICE OF A SPECIFIED TYPE AS DEFINED BY ITS PUBLISHED DATA, AND SHOULD NOT BE EXCEEDED UNDER THE WORST PROBABLE CONDITIONS. THE DEVICE MANUFACTURER CHOOSES THESE VALUES TO PROVIDE ACCEPTABLE SERVICEABILITY OF THE DEVICE, TAKING RESPONSIBILITY FOR THE EFFECTS OF CHANGES IN OPERATING CONDITIONS DUE TO VARIATION IN DEVICE CHARACTERISTICS. THE EQUIPMENT MANUFACTURER SHOULD DESIGN SO THAT INITIALLY AND THROUGHOUT LIFE NO DESIGN MAXIMUM VALUE FOR THE INTENDED SERVICE IS EXCEEDED WITH A BOGEY DEVICE UNDER THE WORST PROBABLE CONDITIONS WITH RESPECT TO SUPPLY-VOLTAGE VARIATION, EQUIPMENT COMPONENT VARIATION, EQUIPMENT CONTROL ADJUSTMENT, LOAD VARIATION, SIGNAL VARIATION, AND ENVIRONMENTAL CONDITIONS.

OPERATING CONDITIONS AS RESISTANCE COUPLED AMPLIFIER

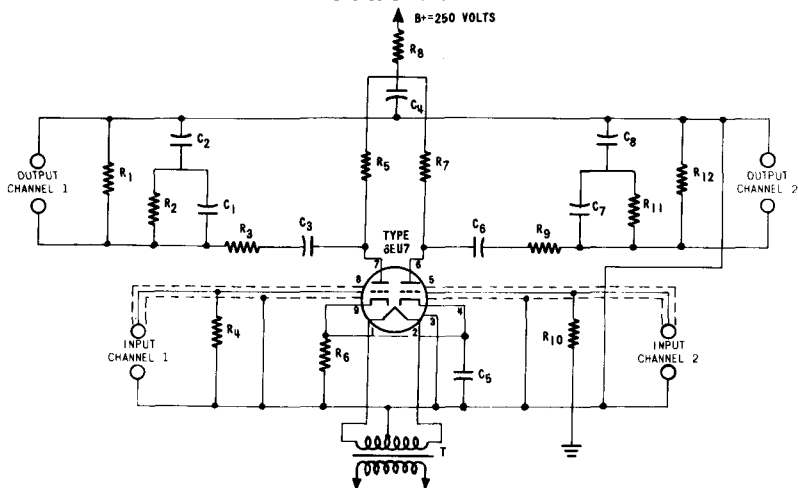
EACH UNIT

PLATE SUPPLY VOLTAGE	90			180			300			VOLTS
PLATE LOAD RESISTOR	0.1	0.22	0.47	0.1	0.22	0.47	0.1	0.22	0.47	MEGOHM
GRID RESISTOR (OF FOLLOWING STAGE)	0.22	0.47	1.0	0.22	0.47	1.0	0.22	0.47	1.0	MEGOHMS
CATHODE RESISTOR	4700	7400	13000	2000	8500	6700	1500	2800	5200	OHMS
PEAK OUTPUT VOLTAGE	6	9	11	25	34	39	57	69	77	VOLTS
VOLTAGE GAIN	35 ^C	45 ^D	52 ^E	47	59	66	52	65	73	

^C AT 2 VOLTS (RMS) OUTPUT^D AT 3 VOLTS (RMS) OUTPUT^E AT 4 VOLTS (RMS) OUTPUT

NOTE: COUPLING CAPACITORS SHOULD BE SELECTED TO GIVE DESIRED FREQUENCY RESPONSE. CATHODE RESISTORS SHOULD BE ADEQUATELY BYPASSED.

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C_1, C_7 : 0.0035 μ f, 600 volts

C_2, C_8 : 0.01 μ f, 600 volts

C_3, C_6 : 0.1 μ f, 600 volts

C_4 : 20 μ f, 450 volts

C_5 : 50 μ f, 25 volts

R_1, R_{12} : 68000 $\pm$ 10% ohms, 1/2 watt

R_2, R_{11} : 22000 $\pm$ 10% ohms, 1/2 watt

R_3, R_9 : 470000 $\pm$ 10% ohms, 1/2 watt

R_4, R_{10} : Value depends on type of magnetic pickup used. Follow pickup manufacturers recommendations.

R_5, R_7 : 100000 $\pm$ 20% ohms, 1/2 watt

R_6 : 1200 $\pm$ 20% ohms, 1/2 watt

R_8 : 3900 $\pm$ 20% ohms, 1 watt

T: 6.3-volt, center-tapped heater transformer.

6EU7

 $E_f = 6.3$ Volts