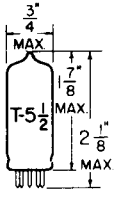
TUNG-SOL

PENTODE

MINIATURE TYPE



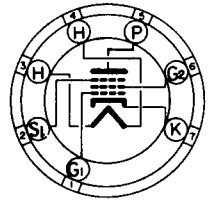
GLASS BULB

COATED UNIPOTENTIAL CATHODE

HEATER

4.2 VOLTS 0.45 AMP.
AC OR DC

ANY MOUNTING POSITION



BOTTOM VIEW
MINIATURE BUTTON
7 PIN BASE
78K

THE 4AU6 IS A PENTODE AMPLIFIER HAVING A SHARP CUT-OFF CONTROL CHARACTERISTIC USING THE MINIATURE CONSTRUCTION. WITH HIGH TRANSCONDUCTANCE, LOW GRID-PLATE CAPACITANCE, IT IS INTENDED FOR SERVICE AS EITHER AN RF OR AF AMPLIFIER. THERMAL CHARACTERISTICS OF THE HEATER ARE CONTROLLED SUCH THAT HEATER VOLTAGE SURGES DURING THE WARM-UP CYCLE ARE MINIMIZED PROVIDED IT IS USED WITH OTHER TYPES WHICH ARE SIMILARLY CONTROLLED. EXCEPT FOR THE CONTROLLED HEATER WARM-UP TIME AND HEATER RATINGS THE 4AU6 IS IDENTICAL TO THE 6AU6.

DIRECT INTERELECTRODE CAPACITANCES

	WITH SHIELD[A]	WITHOUT SHIELD	
PENTODE CONNECTION:			
GRID TO PLATE: (G_1 TO P) MAX.	0.003	0.003	μμf
INPUT: G_1 TO (H+K+G_2+G_3&IS)	5.5	5.5	μμf
OUTPUT: P TO (H+K+G_2+G_3&IS)	5	5	μμf
TRIODE CONNECTION:			
GRID TO PLATE: G_1 TO (P+G_2+G_3&IS)	2.6	2.6	μμf
INPUT: G_1 TO (H+K)	3.2	3.2	μμf
OUTPUT: (P+G_2+G_3&IS) TO (H+K)	8.5	1.2	μμf

[A] SHIELD #316 CONNECTED TO PIN #7.

RATINGS

INTERPRETED ACCORDING TO DESIGN CENTER SYSTEM

	TRIODE CONNECTION[B]	PENTODE CONNECTION	
HEATER VOLTAGE	4.2	4.2	VOLTS
MAXIMUM HEATER-CATHODE VOLTAGE:			
HEATER NEGATIVE WITH RESPECT TO CATHODE	180	180	VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE	100	100	VOLTS
MAXIMUM PLATE VOLTAGE	250	300	VOLTS
MAXIMUM GRID #2 SUPPLY VOLTAGE	PLATE	300	VOLTS
MAXIMUM GRID #2 VOLTAGE	PLATE	SEE J5-C4	
MAXIMUM GRID #3 VOLTAGE PIN #2 CONNECTED TO:	PLATE	CATHODE	
MAXIMUM PLATE DISSIPATION	3.2	3	WATTS
MAXIMUM GRID #2 DISSIPATION	---	0.65	WATTS
MAXIMUM POSITIVE DC GRID #1 VOLTAGE	0	0	VOLTS
HEATER WARM-UP TIME (APPROX.)*	11.0		SECONDS

[B] TRIODE CONNECTION: G_2 AND G_3 CONNECTED TO PLATE.

*HEATER WARM-UP TIME IS DEFINED AS THE TIME REQUIRED FOR THE VOLTAGE ACROSS THE HEATER TO REACH 80% OF ITS RATED VOLTAGE AFTER APPLYING 4 TIMES RATED HEATER VOLTAGE TO A CIRCUIT CONSISTING OF THE TUBE HEATER IN SERIES WITH A RESISTANCE OF VALUE 3 TIMES THE NOMINAL HEATER OPERATING RESISTANCE.

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TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

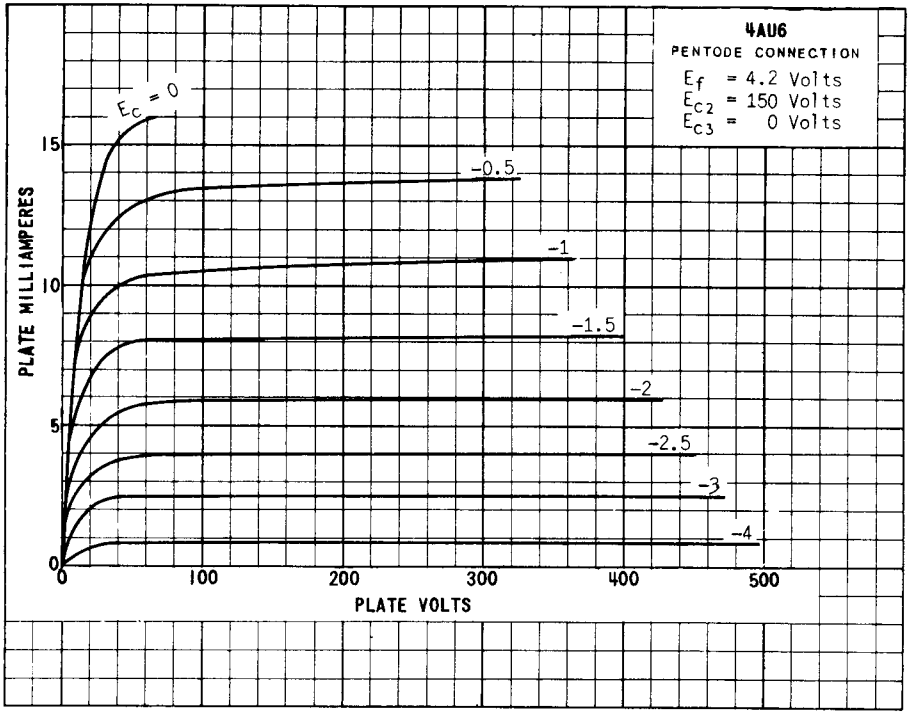
CLASS A_1 AMPLIFIER – PENTODE CONNECTION

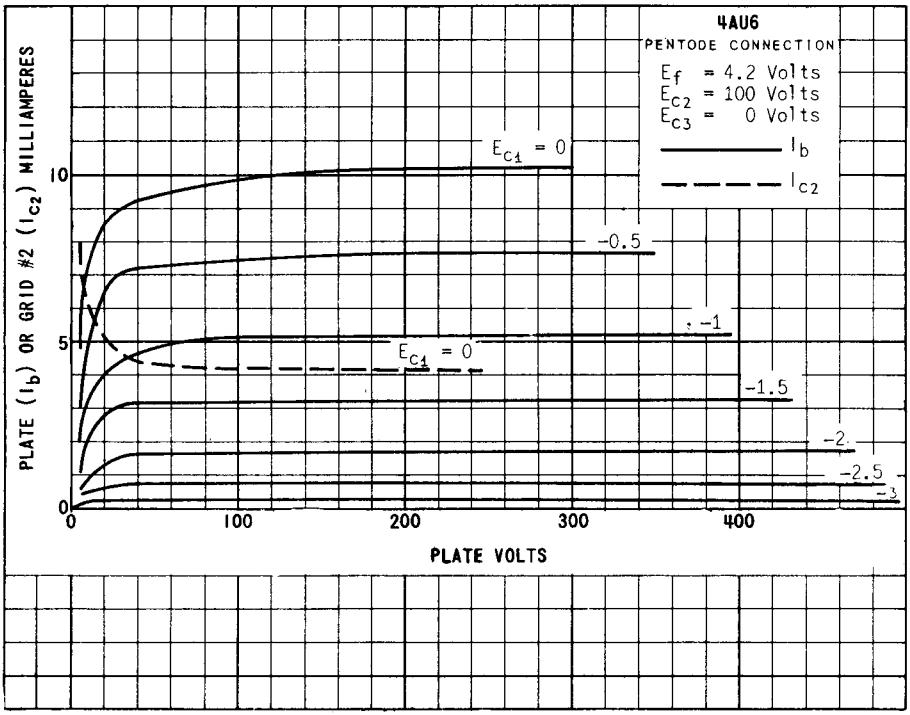
HEATER VOLTAGE	4.2	4.2	4.2	VOLTS
HEATER CURRENT	0.45	0.45	0.45	AMP.
PLATE VOLTAGE	100	250	250	VOLTS
GRID #2 VOLTAGE	100	125	150	VOLTS
CATHODE BIAS RESISTOR	150	100	68	OHMS
GRID #3 VOLTAGE	PIN #2 CONNECTED TO PIN #7 AT SOCKET			
TRANSCONDUCTANCE	3 900	4 500	5 200	µMHOS
PLATE CURRENT	5	7.6	10.6	MA.
GRID #2 CURRENT	2.1	3	4.3	MA.
PLATE RESISTANCE (APPROX.)	0.5	1.5	1	MEGOHMS
GRID #1 VOLTAGE (APPROX.) FOR I_b = 10 µA.	-4.2	-5.5	-6.5	VOLTS

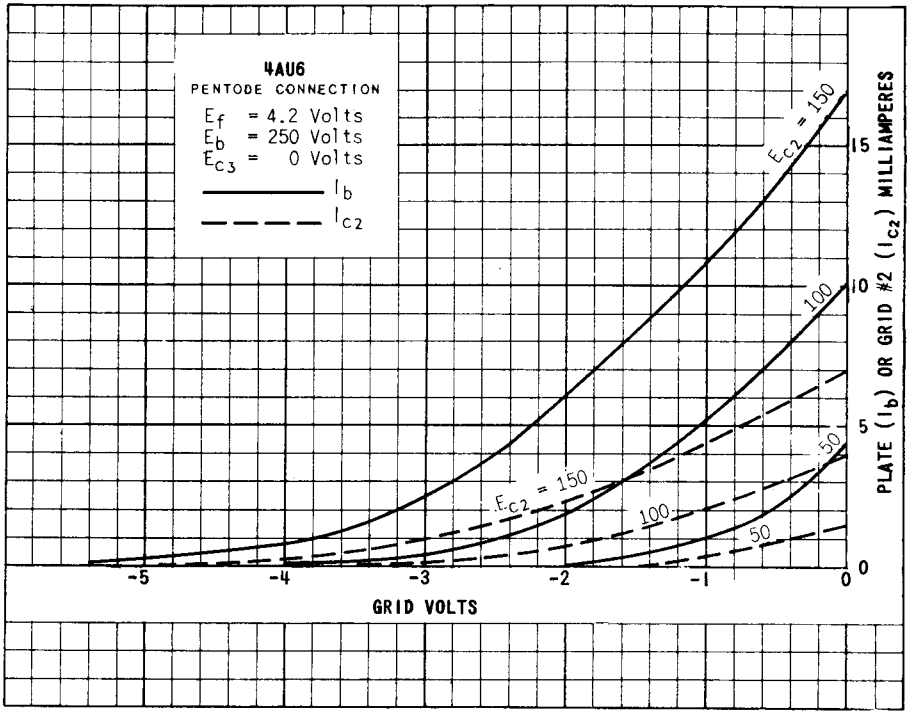
CLASS A_1 AMPLIFIER – TRIODE CONNECTION[C]

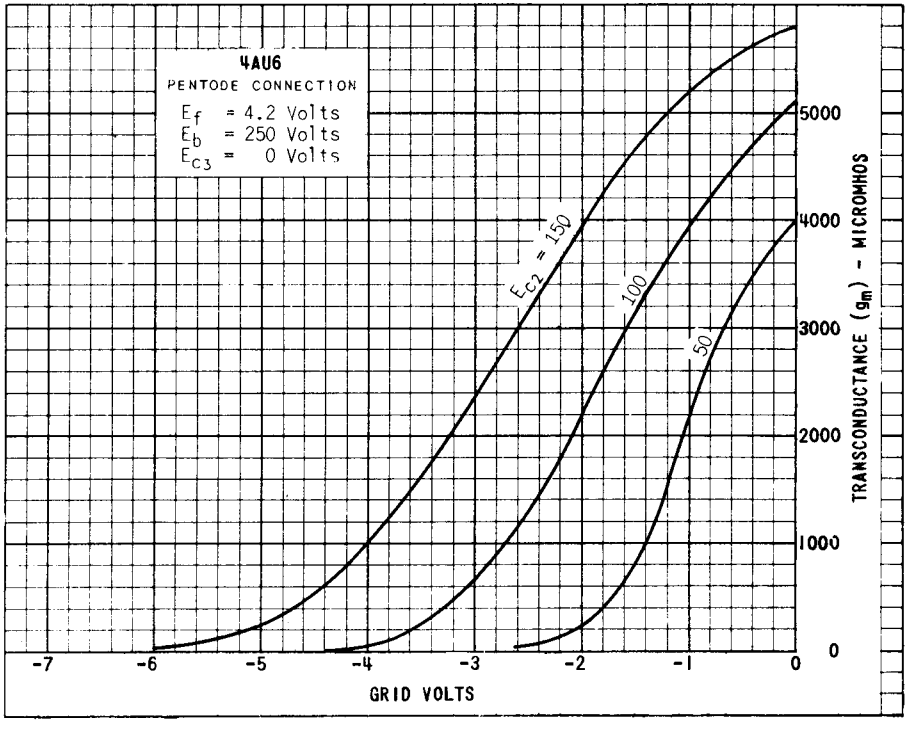
HEATER VOLTAGE	4.2	VOLTS
HEATER CURRENT	0.45	AMP.
PLATE VOLTAGE	250	VOLTS
GRID #2 VOLTAGE	PLATE	
CATHODE RESISTOR	330	OHMS
GRID #3 VOLTAGE	PLATE	
TRANSCONDUCTANCE	4 800	µMHOS
PLATE CURRENT	12.2	MA.
AMPLIFICATION FACTOR	36	

[C] TRIODE CONNECTION: GRID #2 AND GRID #3 CONNECTED TO PLATE.






4AU6
PENTODE CONNECTION
Ef = 4.2 Volts
Eb = 250 Volts
Ec3 = 0 Volts
Ib
Ic2
Ec2 = 150
100
50
Ec2 = 150
100
50
-5
-4
-3
-2
-1
0
GRID VOLTS
0
5
10
15
PLATE (Ib) OR GRID #2 (Ic2) MILLIAMPERES


4AU6
PENTODE CONNECTION
Ef = 4.2 Volts
Eb = 250 Volts
Ec3 = 0 Volts
Ec2 = 150
100
50
-7
-6
-5
-4
-3
-2
-1
0
GRID VOLTS
0
1000
2000
3000
4000
5000
TRANSCONDUCTANCE (gm) - MICROMHOS