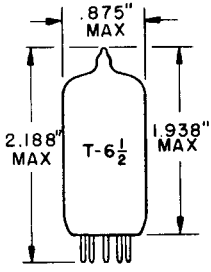
TUNG-SOL

TRIODE PENTODE

MINIATURE TYPE



GLASS BULB

MINIATURE BUTTON
9 PIN BASE E9-1
OUTLINE DRAWING
JEDEC 6-2

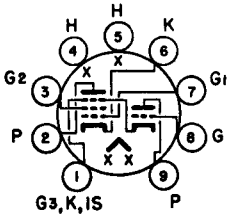
FOR

COLOR AND BLACK AND WHITE

T.V. APPLICATIONS

COATED UNIPOTENTIAL CATHODE

ANY MOUNTING POSITION



BOTTOM VIEW

BASING DIAGRAM
JEDEC 9GM

THE 6CU8 IS A GENERAL-PURPOSE MEDIUM-MU TRIODE AND SHARP-CUTOFF PENTODE IN THE 9 PIN MINIATURE CONSTRUCTION. IT IS INTENDED FOR A WIDE VARIETY OF APPLICATIONS IN BLACK-AND-WHITE AND COLOR TELEVISION RECEIVERS. 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.

DIRECT INTERELECTRODE CAPACITANCES

WITHOUT EXTERNAL SHIELD

PENTODE GRID 1 TO PENTODE PLATE: (PG TO PP)	max.	0.025	pf
PENTODE INPUT: PG1 TO (H+PK+PG3+TK+I.S.+PG2)		7	pf
PENTODE OUTPUT: PP TO (H+PK+PG3+TK+I.S.+PG2)		2.4	pf
TRIODE GRID TO TRIODE PLATE: TG TO TP		1.6	pf
TRIODE INPUT: TG TO (TK+H+PG3+I.S.)		1.9	pf
TRIODE OUTPUT: TP TO (TK+H+PG3+I.S.)		1.6	pf
PENTODE GRID 1 TO TRIODE PLATE (PG1 TO TP)	max.	0.03 ←	pf
PENTODE PLATE TO TRIODE PLATE (PP TO TP)	max.	0.07 ←	pf

HEATER CHARACTERISTICS AND RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239 ←

AVERAGE CHARACTERISTICS	6.3	VOLTS	450	MA.
HEATER WARM-UP TIME [A]			11	SECONDS
LIMITS OF APPLIED VOLTAGE			6.3±0.6	VOLTS
LIMITS OF SUPPLIED CURRENT			450 ±30	MA.
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

CONTINUED ON FOLLOWING PAGE

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MAXIMUM RATINGS

→ DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

PENTODE PLATE VOLTAGE	→ 330	VOLTS
TRIODE PLATE VOLTAGE	→ 330	VOLTS
GRID 2 SUPPLY VOLTAGE	→ 330	VOLTS
GRID 2 VOLTAGE	See rating chart	
PENTODE PLATE DISSIPATION	→ 2.3	WATTS
TRIODE PLATE DISSIPATION	→ 2.8	WATTS
GRID 2 DISSIPATION	→ 0.55	WATT
POSITIVE DC PENTODE GRID 1 VOLTAGE	0	VOLTS
POSITIVE DC TRIODE GRID VOLTAGE	0	VOLTS

→ TYPICAL OPERATING CHARACTERISTICS

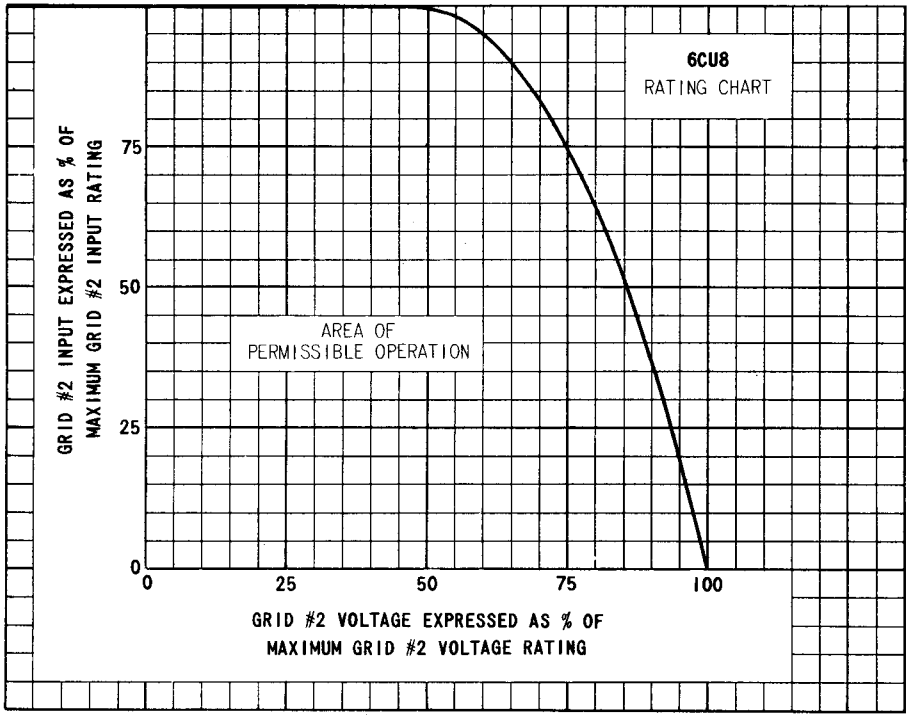
CLASS A1 AMPLIFIER

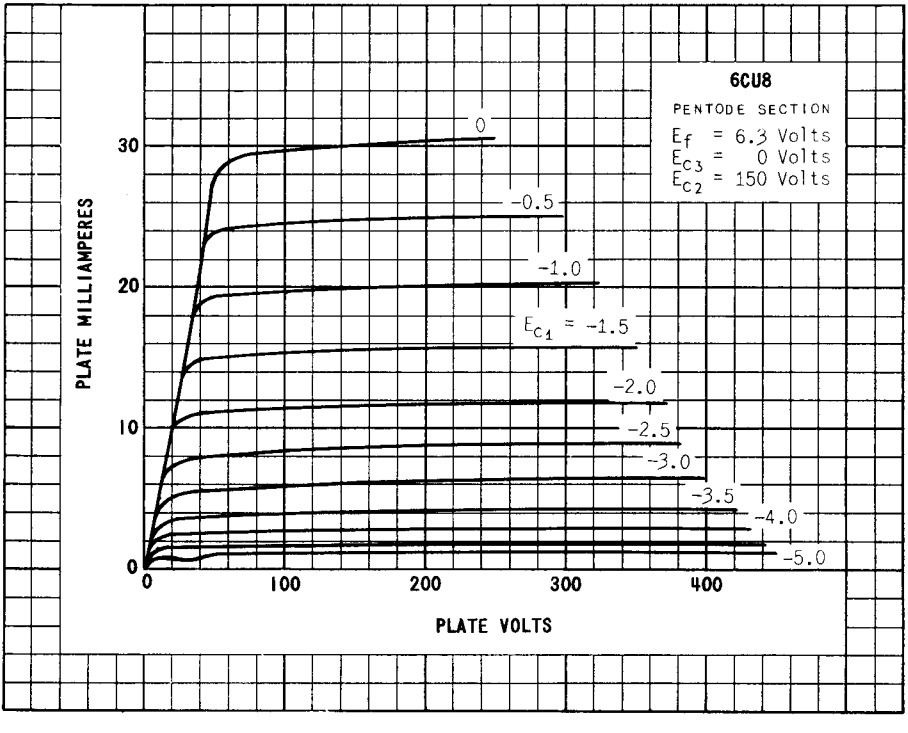
		TRIODE	PENTODE	
PLATE VOLTAGE		125	125	VOLTS
GRID 2 VOLTAGE		------	125	VOLTS
GRID 1 VOLTAGE		−1.0	0	VOLTS
CATHODE BIAS RESISTOR		0	56	OHMS
PLATE CURRENT		17	12	MA.
GRID 2 CURRENT		------	3.8	MA.
TRANSCONDUCTANCE		5,800	7,800	μMHOS
AMPLIFICATION FACTOR		24	------	
PLATE RESISTANCE	APPROX.	4.1	170	KOHMS
PLATE CURRENT AT Ec1 =-3; Rk =0		------	1.6	MA.
GRID 1 VOLTAGE, APPROX. FOR Ib = 20 μA		12	−6	MA.

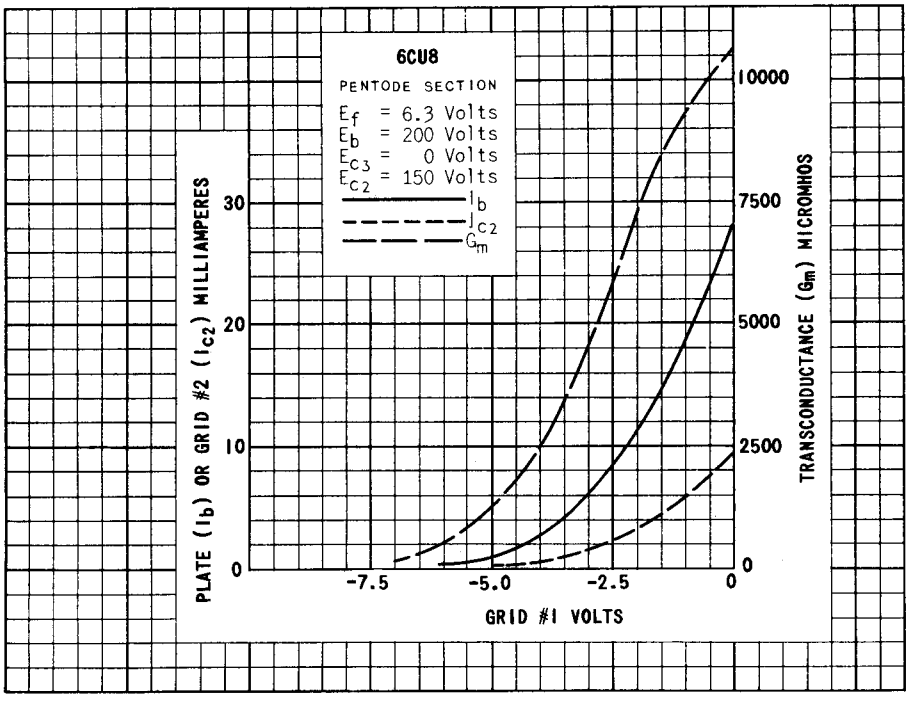
→ INDICATES A CHANGE.

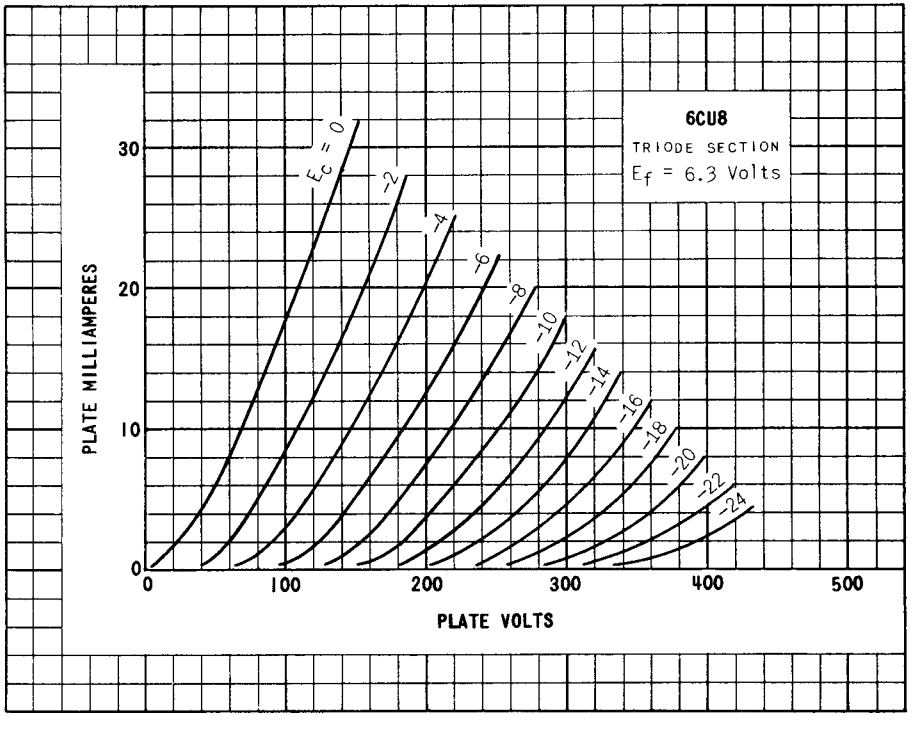
A

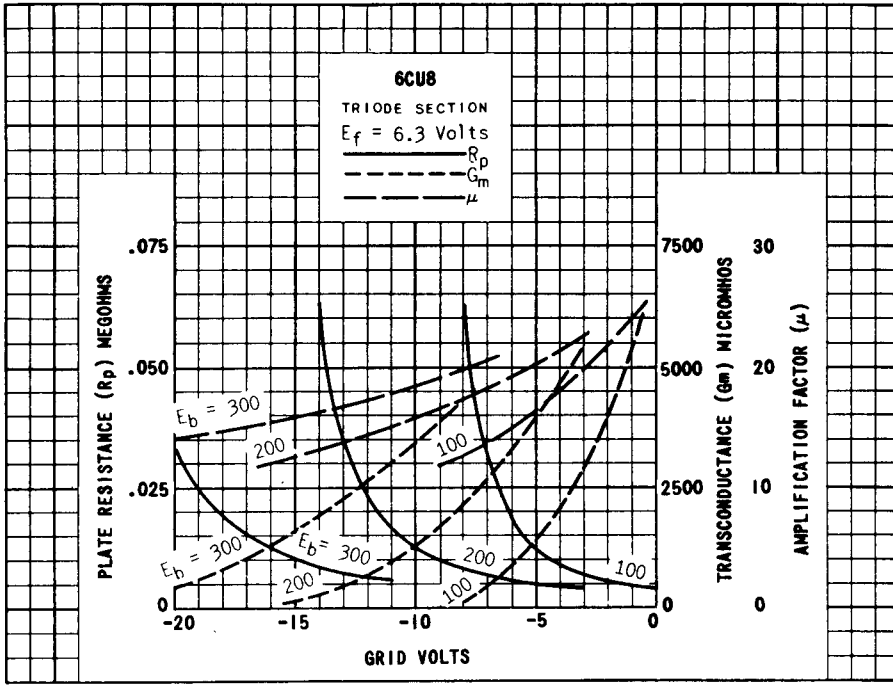
HEATER WARM-UP TIME IS DEFINED AS THE TIME REQUIRED FOR THE VOLTAGE ACROSS THE HEATER TO REACH 80% OF ITS RATED VOLTAGE AFTER APPLYING 4 TIMES RATED HEATER VOLTAGE TO A CIRCUIT CONSISTING OF THE TUBE HEATER IN SERIES WITH A RESISTANCE OF VALUE 3 TIMES THE NOMINAL HEATER HEATER OPERATING RESISTANCE.






6CU8
PENTODE SECTION
E_f = 6.3 Volts
E_b = 200 Volts
E_{c3} = 0 Volts
E_{c2} = 150 Volts
I_b
I_{c2}
G_m
PLATE (I_b) OR GRID #2 (I_{c2}) MILLIAMPERES
TRANSCONDUCTANCE (G_m) MICROMHOS
GRID #1 VOLTS
0
10
20
30
2500
5000
7500
10000
-7.5
-5.0
-2.5
0


6CU8
TRIODE SECTION
E_f = 6.3 Volts
E_c = 0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
PLATE MILLIAMPERES
PLATE VOLTS
0
10
20
30
100
200
300
400
500


6CU8
TRIODE SECTION
E_f = 6.3 Volts
R_p
G_m
μ
PLATE RESISTANCE (R_p) MEGOHMS
.075
.050
.025
0
TRANSCONDUCTANCE (G_m) MICROMHOS
7500
5000
2500
0
AMPLIFICATION FACTOR (μ)
30
20
10
0
E_b = 300
200
100
-20
-15
-10
-5
0
GRID VOLTS