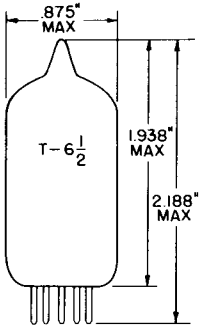
TUNG-SOL

TRIODE PENTODE

MINIATURE TYPE



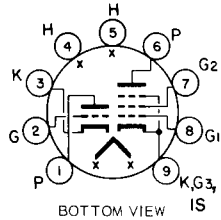
GLASS BULB
MINIATURE BUTTON
9 PIN BASE E9-1
OUTLINE DRAWING
JEDEC 6-2

COATED UNIPOTENTIAL CATHODE

FOR GENERAL PURPOSE

APPLICATIONS IN TV RECEIVERS

ANY MOUNTING POSITION



BOTTOM VIEW
BASING DIAGRAM
JEDEC 9DA

THE 6AN8A IS A MEDIUM MU TRIODE AND A SHARP CUTOFF PENTODE IN THE 9 PIN MINIATURE CONSTRUCTION. THE PENTODE SECTION MAY BE USED AS AN IF AMPLIFIER OR A REACTANCE TUBE WHILE THE TRIODE SECTION IS WELL SUITED FOR USE IN LOW-FREQUENCY OSCILLATOR, SYNC CLIPPER, SYNC SEPARATOR AND PHASE SPLITTER CIRCUITS. 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

TRIODE UNIT:		
GRID TO PLATE: (TG TO TP)	1.5	pf
INPUT: TG TO (H+TK)	2.0	pf
OUTPUT: TP TO (H+TK)	→ 0.26	pf
PENTODE UNIT:		
GRID 1 TO PLATE: (PG1 TO PP) MAX.	0.04	pf
INPUT: PG1 TO (H+PK+PG2+PG3+I.S.)	7.0	pf
OUTPUT: PP TO (H+PK+PG2+PG3+I.S.)	→ 2.4	pf
COUPLING:		
TRIODE GRID TO PENTODE PLATE: (TG TO PP) MAX.	→ 0.02	pf
PENTODE GRID 1 TO TRIODE PLATE: (PG1 TO TP) MAX.	→ 0.02	pf
PENTODE PLATE TO TRIODE PLATE: (P_P TO TP) MAX.	→ 0.15	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
HEATER SUPPLY LIMITS:			
VOLTAGE OPERATION		6.3±0.6	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

CONTINUED ON FOLLOWING PAGE

TUNG-SOL

→ MAXIMUM RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

	TRIODE	PENTODE	
PLATE VOLTAGE	330	330	VOLTS
GRID 2 VOLTAGE	----	SEE RATING CHART	
GRID 2 SUPPLY VOLTAGE	----	330	VOLTS
PLATE DISSIPATION	2.8	2.3	WATTS
GRID 2 DISSIPATION	----	0.55	WATTS
POSITIVE DC GRID 1 VOLTAGE	0	0	VOLTS
GRID 1 CIRCUIT RESISTANCE: [B]			
FOR CATHODE-BIAS OPERATION	1.0	1.0	MEGOHM
FOR FIXED-BIAS OPERATION	0.5	0.25	MEGOHM

→ TYPICAL OPERATING CHARACTERISTICS

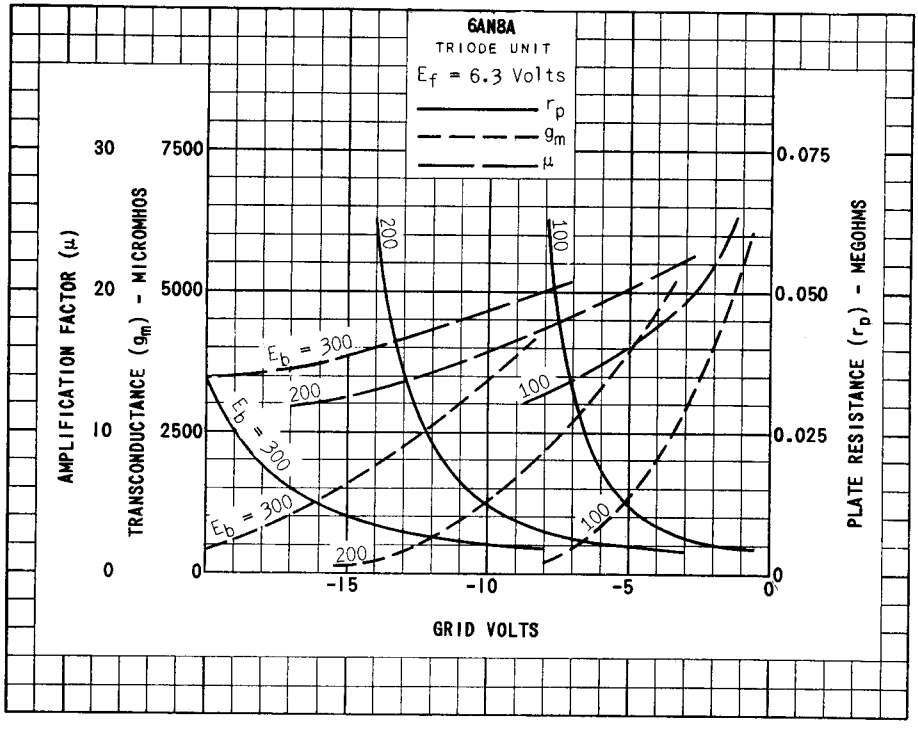
CLASS A_1 AMPLIFIER

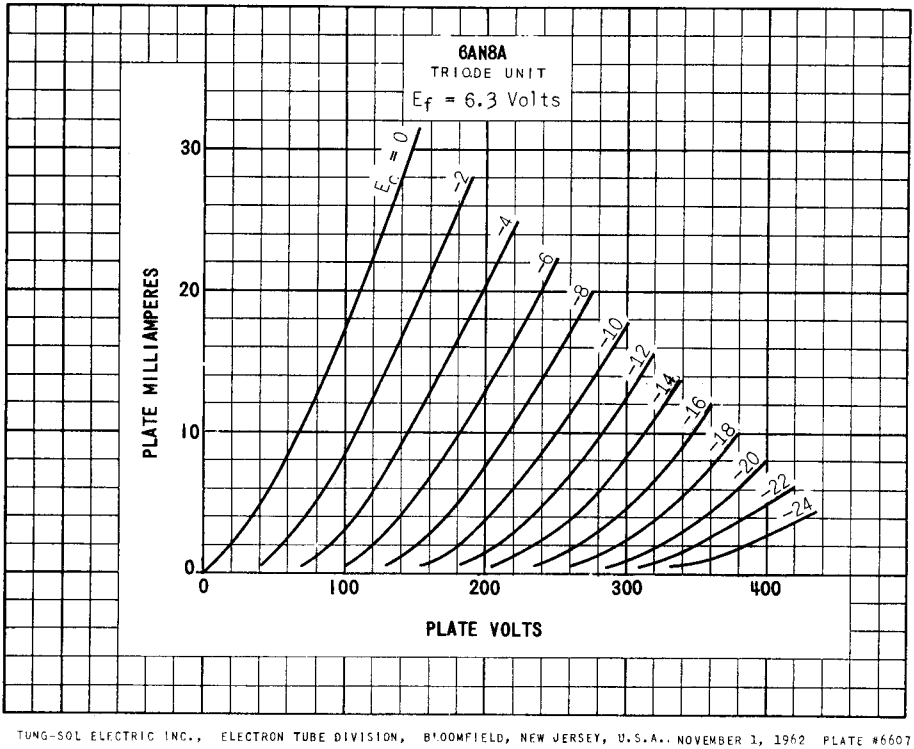
	TRIODE	PENTODE	
PLATE SUPPLY VOLTAGE	150	125	VOLTS
GRID 2 SUPPLY VOLTAGE	----	125	VOLTS
GRID 1 VOLTAGE	-3	0	VOLTS
CATHODE BIAS RESISTOR	0	56	OHMS
AMPLIFICATION FACTOR	21	----	
TRANSCONDUCTANCE	4500	7800	μMHOS
PLATE CURRENT	15	12	MA.
PLATE RESISTANCE (APPROX)	4700	170,000	OHMS
GRID 2 CURRENT	----	3.8	MA.
GRID 1 VOLTAGE (APPROX.) FOR I_b=20 μA	-17	----	VOLTS
PLATE CURRENT AT E_{c1}=-3 V., Rk=0	----	1.6	MA.
GRID 1 VOLTAGE (APPROX.) FOR I_b=20 μA.	----	-6	VOLTS

[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 SEREIS WITH A RESISTANCE OF VALUE 3 TIMES THE NOMINAL HEATER OPERATING RESISTANCE.**

[B] IF EITHER UNIT IS OPERATING AT MAXIMUM RATED CONDITIONS, GRID #1 CIRCUIT RESISTANCES FOR BOTH UNITS SHOULD NOT EXCEED THE STATED VALUES.

→ INDICATES A CHANGE.





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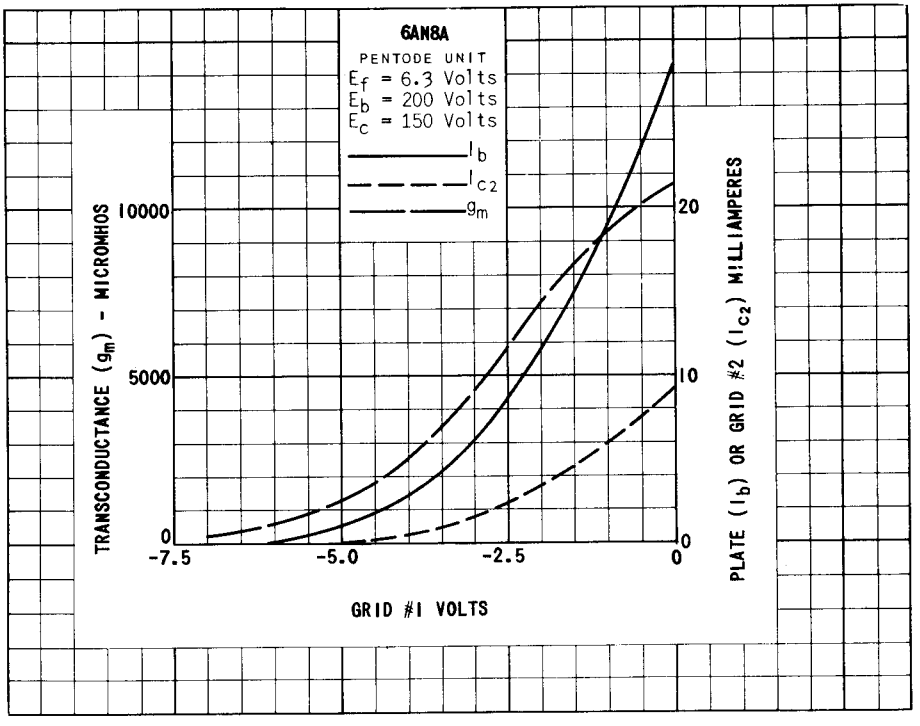
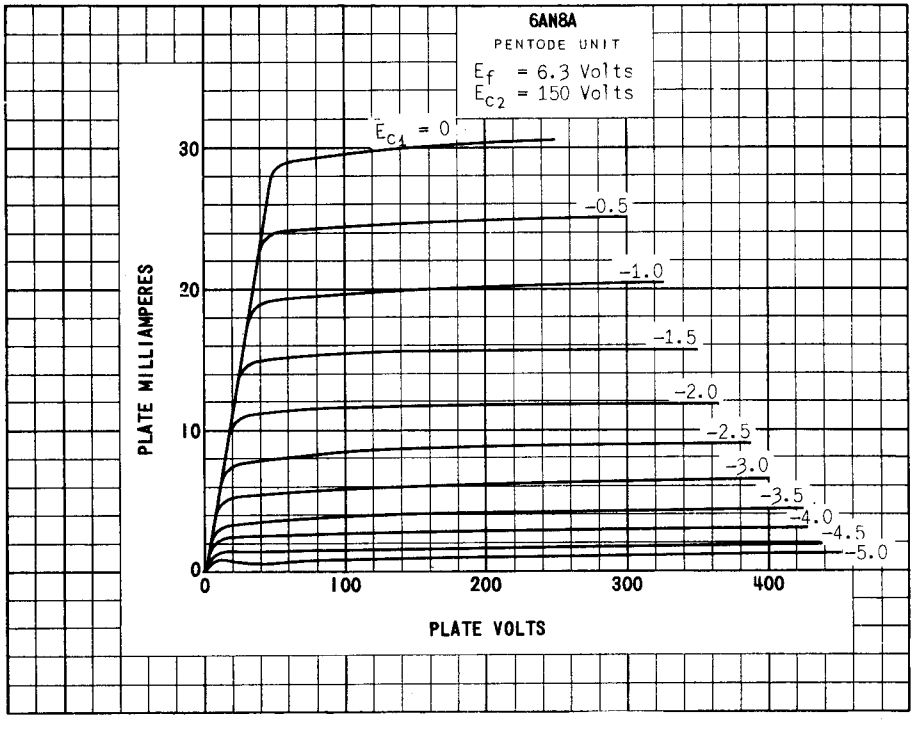
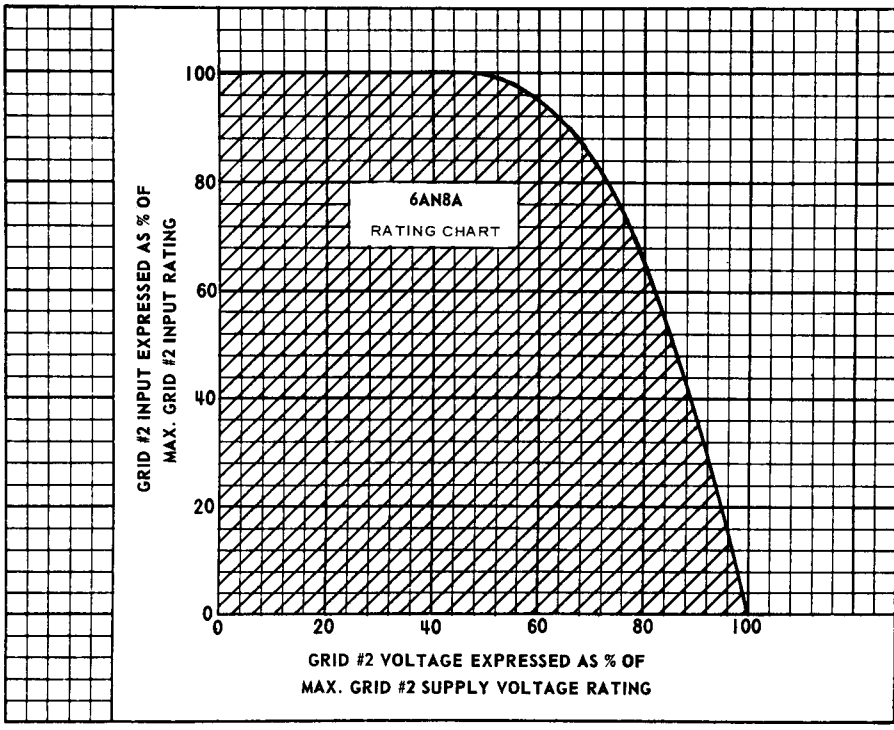
6AN8A


6AN8A
PENTODE UNIT
E_f = 6.3 Volts
E_b = 200 Volts
E_c = 150 Volts
I_b
I_{c2}
g_m
TRANSCONDUCTANCE (g_m) - MICROMHOS
10000
5000
0
20
10
0
-7.5
-5.0
-2.5
0
GRID #1 VOLTS
PLATE (I_b) OR GRID #2 (I_{c2}) MILLIAMPERES


6AN8A
PENTODE UNIT
E_f = 6.3 Volts
E_{c2} = 150 Volts
E_{c1} = 0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
-4.0
-4.5
-5.0
PLATE MILLIAMPERES
30
20
10
0
0
100
200
300
400
PLATE VOLTS



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