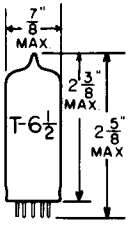
TUNG-SOL

TRIODE PENTODE

MINIATURE TYPE

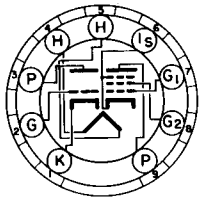


GLASS BULB

COATED UNIPOTENTIAL CATHODE

HEATER
6.3 VOLTS 0.6 AMP.
AC OR DC

ANY MOUNTING POSITION



BOTTOM VIEW
MINIATURE BUTTON
9 PIN BASE
9DX

THE 6BH8 IS A SHARP CUTOFF PENTODE AND A MEDIUM MU TRIODE IN THE 9-PIN MINIATURE CONSTRUCTION. THE TUBE IS SUITABLE FOR GENERAL PURPOSE APPLICATIONS IN BOTH MONOCHROME AND COLOR TELEVISION RECEIVERS. THE HIGH FIGURE OF MERIT OF THE PENTODE SECTION MAKES IT PARTICULARLY SUITED FOR SERVICE AS A VIDEO AMPLIFIER, VIDEO INTERMEDIATE FREQUENCY AMPLIFIER AND SOUND INTERMEDIATE FREQUENCY AMPLIFIER. THE TRIODE SECTION IS INTENDED FOR USE AS A SYNC AMPLIFIER, SEPARATOR, OR CLIPPER OR AS A SWEEP OSCILLATOR. THE TRIODE SECTION MAY ALSO BE CONNECTED AS A DIODE FOR VIDEO-DETECTOR APPLICATIONS. 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

WITH NO EXTERNAL SHIELD

	PENTODE SECTION	TRIODE SECTION	
GRID #1 TO PLATE	0.046	2.4	μμf
INPUT	7	2.6	μμf
OUTPUT	2.4	0.38	μμf

PENTODE GRID #1 TO TRIODE PLATE	0.004	μμf
TRIODE GRID TO PENTODE PLATE	0.016	μμf
PENTODE PLATE TO TRIODE PLATE	0.095	μμf

CONTINUED ON FOLLOWING PAGE

TUNG-SOL

CONTINUED FROM PRECEDING PAGE

RATINGS

INTERPRETED ACCORDING TO DESIGN CENTER SYSTEM

	PENTODE SECTION	TRIODE SECTION	
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 GRID #2 SUPPLY VOLTAGE	300	---	VOLTS
MAXIMUM GRID #2 VOLTAGE	SEE RATING CHART		
MAXIMUM POSITIVE DC GRID #1 VOLTAGE	0	0	VOLTS
MAXIMUM PLATE DISSIPATION	3.0	2.5	WATTS
MAXIMUM GRID #2 DISSIPATION	1.0	---	WATTS
MAXIMUM GRID #1 CIRCUIT RESISTANCE:			
FIXED BIAS	0.25	0.5	MEGOHM
CATHODE BIAS	1.0	1.0	MEGOHM
HEATER WARM-UP TIME (APPROX.)[A]	11.0		SECONDS

[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 OPERATING RESISTANCE.

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

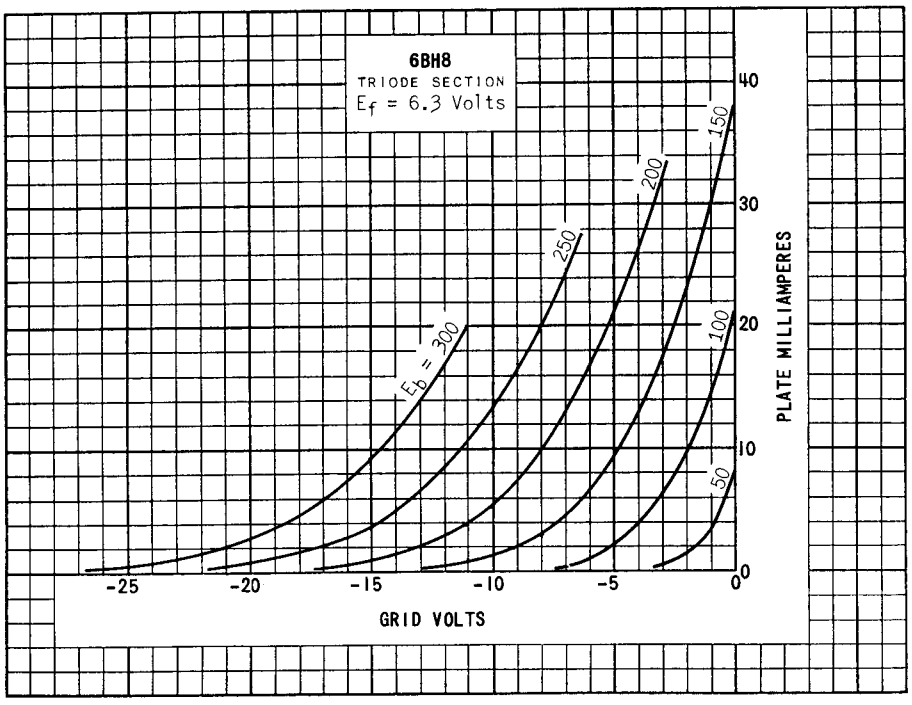
CLASS A_1 AMPLIFIER

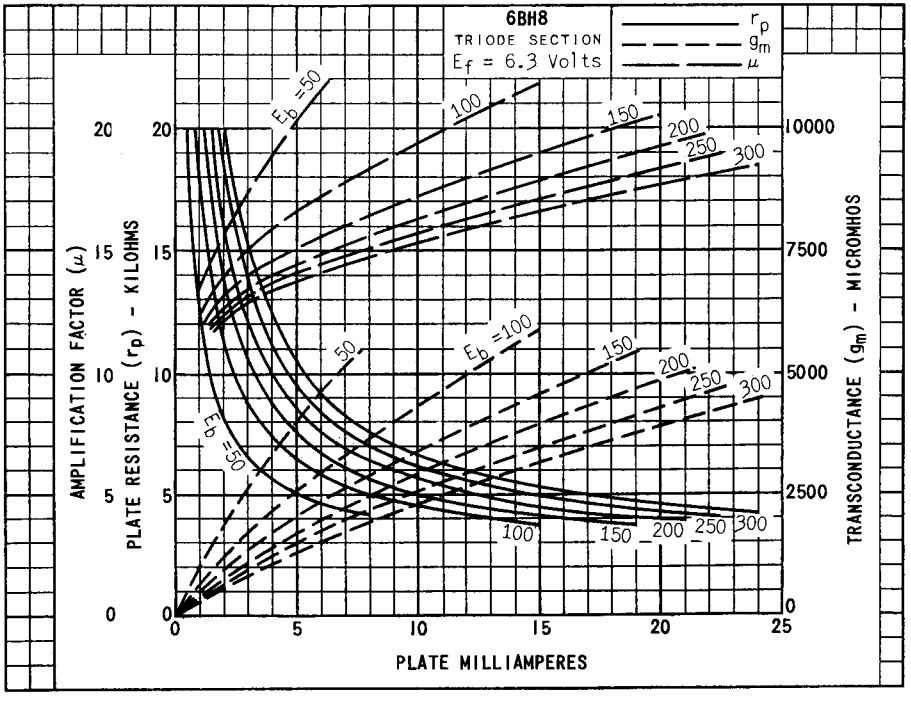
	PENTODE SECTION	TRIODE SECTION	
HEATER VOLTAGE	6.3		VOLTS
HEATER CURRENT	0.6		AMP.
PLATE VOLTAGE	200	150	VOLTS
GRID #2 VOLTAGE	125	---	VOLTS
CATHODE BIAS RESISTOR	82	---	OHMS
AMPLIFICATION FACTOR	---	17	
PLATE RESISTANCE (APPROX.)	150 000	5 150	OHMS
TRANSCONDUCTANCE	7 000	3 300	μMHOS
PLATE CURRENT	15	9.5	MA.
GRID #2 CURRENT	3.4	---	MA.
GRID #1 VOLTAGE (APPROX.) FOR I_b = 100 μAMP.	-8	-14	VOLTS
GRID #1 VOLTAGE	---	-5	VOLTS

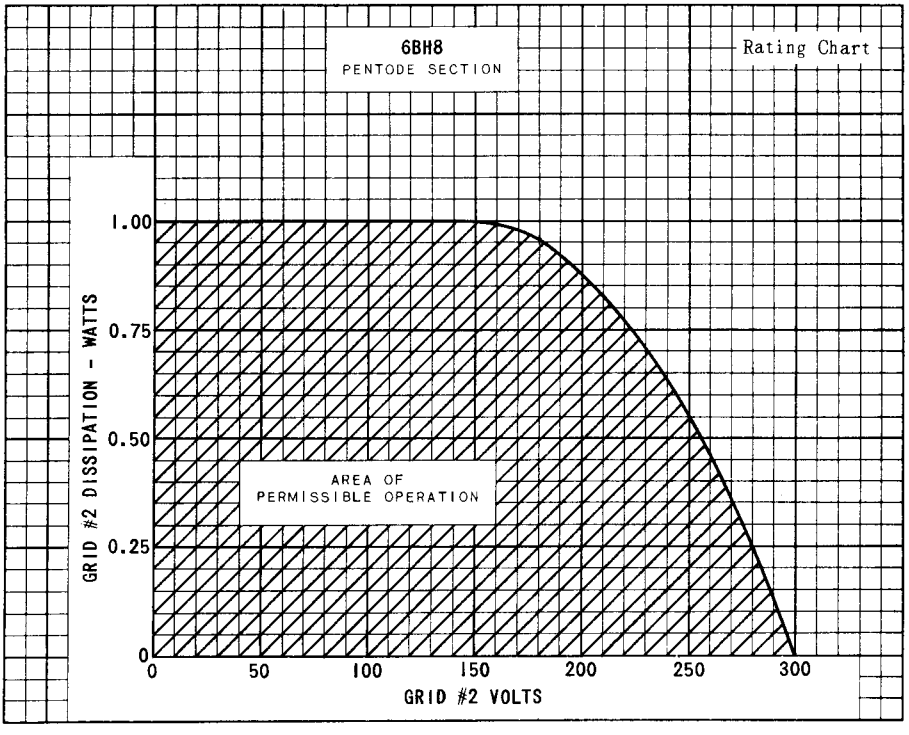
NOTE:

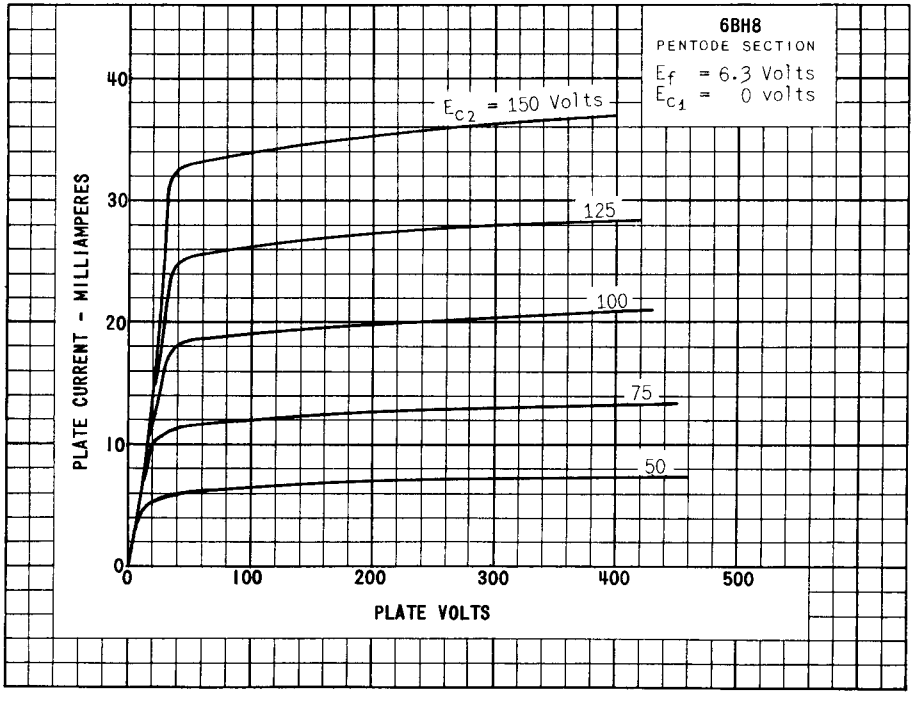
THE TRIODE SECTION OF THE 6BH8 MAY BE DIODE-CONNECTED AND EMPLOYED AS A HIGH-PERVEANCE DIODE IN VIDEO-DETECTOR APPLICATIONS. THE DIODE OPERATION CAN BE OBTAINED EITHER WITH THE TRIODE GRID CONNECTED TO THE TRIODE PLATE AND THE COMBINATION OPERATED AS THE PLATE OF THE DIODE, OR WITH THE TRIODE PLATE GROUNDED AND THE TRIODE GRID OPERATED AS THE PLATE OF THE DIODE.

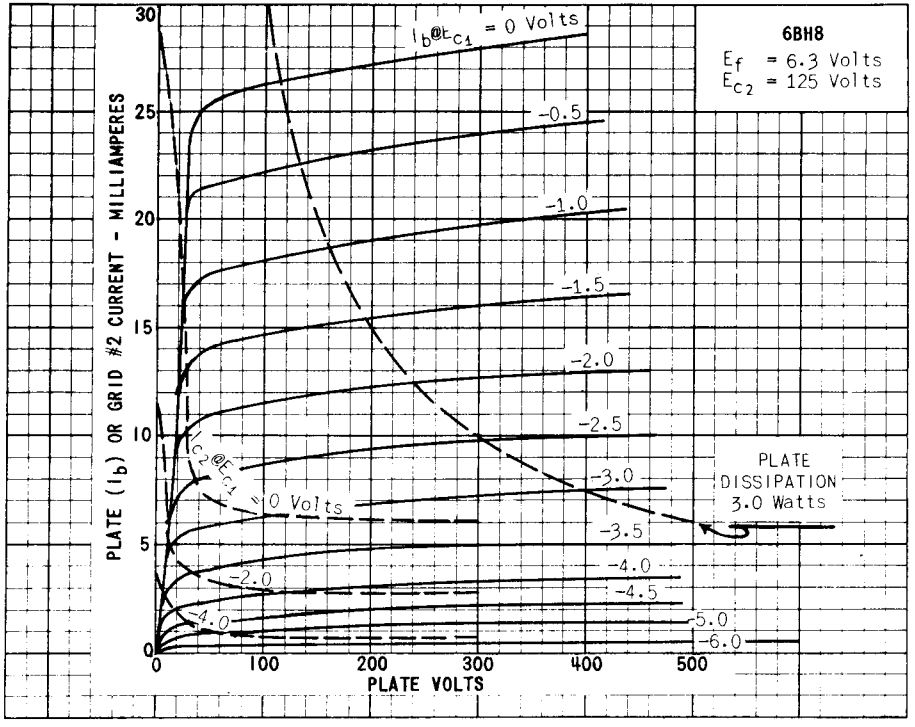
SIMILAR TYPE REFERENCE: EXCEPT FOR THE ELECTRICAL CHARACTERISTICS OF THE TRIODE SECTION, THE 6BH8 IS IDENTICAL TO THE 6AU8.

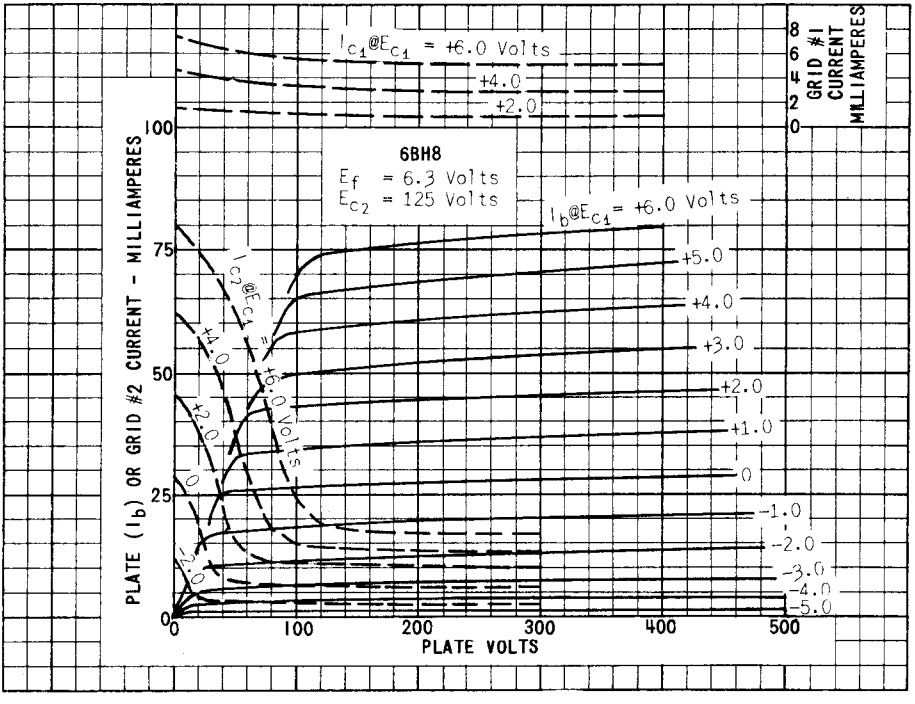


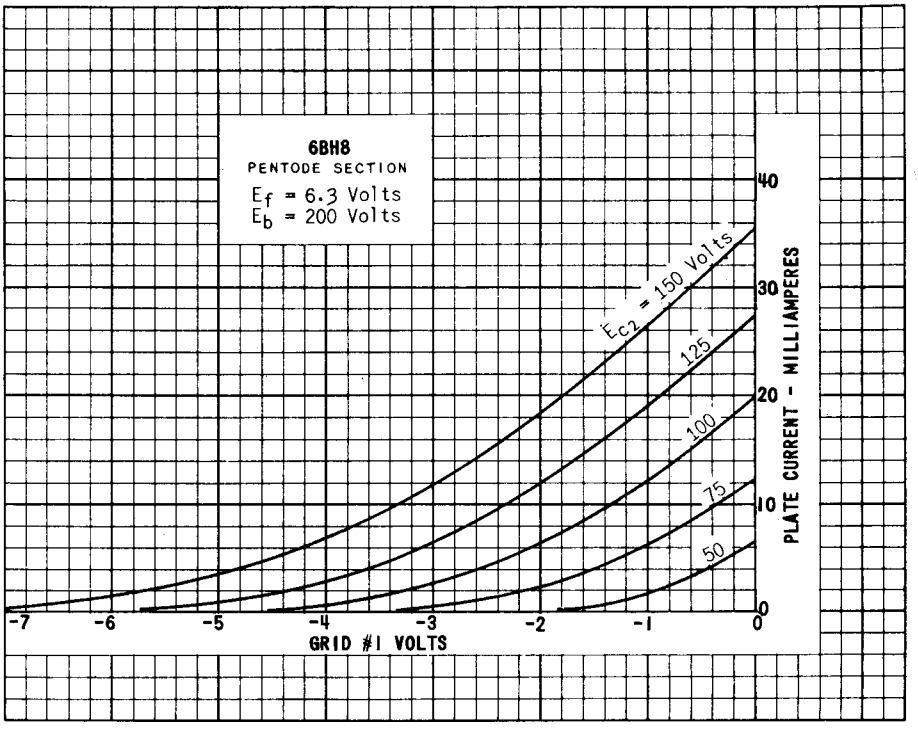


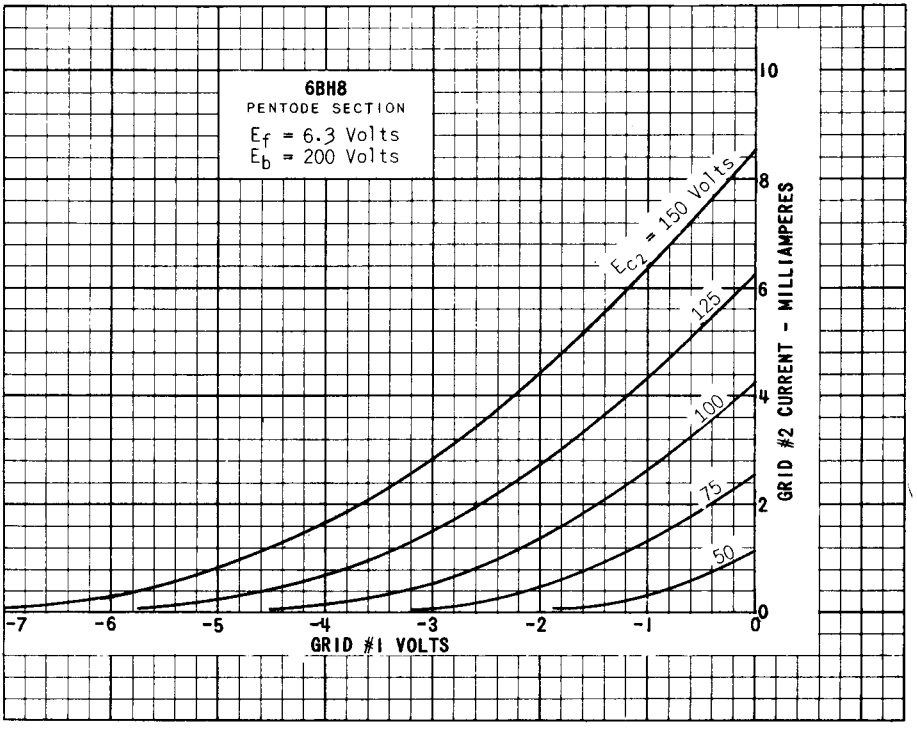

6BH8
PENTODE SECTION
Rating Chart
GRID #2 DISSIPATION - WATTS
1.00
0.75
0.50
0.25
0
AREA OF
PERMISSIBLE OPERATION
0
50
100
150
200
250
300
GRID #2 VOLTS

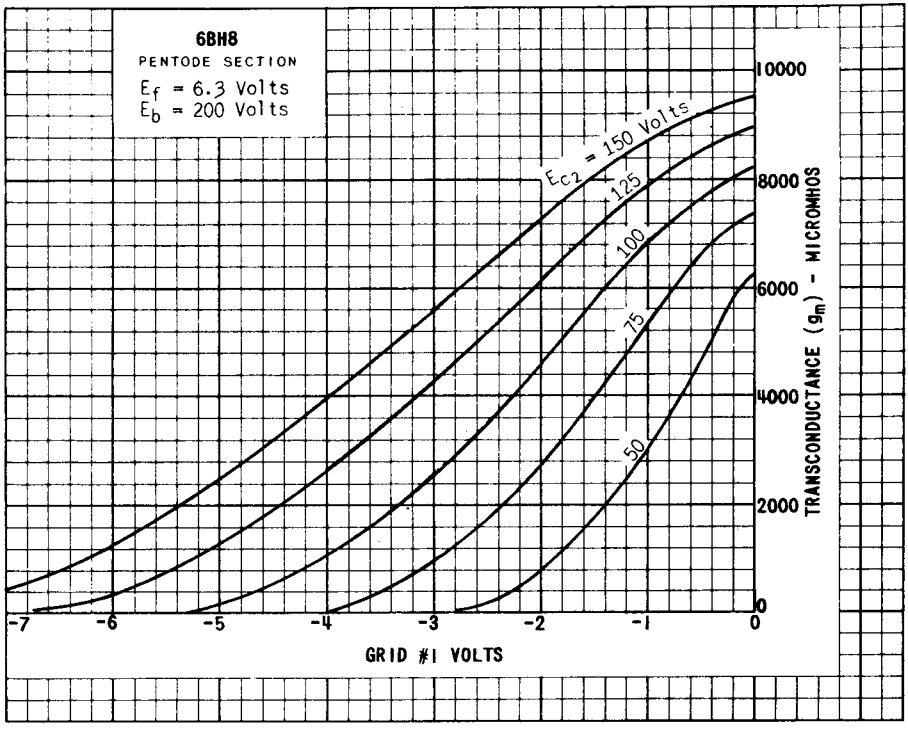

6BH8
PENTODE SECTION
E_f = 6.3 Volts
E_{c_1} = 0 volts
E_{c_2} = 150 Volts
125
100
75
50
PLATE CURRENT - MILLIAMPERES
40
30
20
10
0
0
100
200
300
400
500
PLATE VOLTS

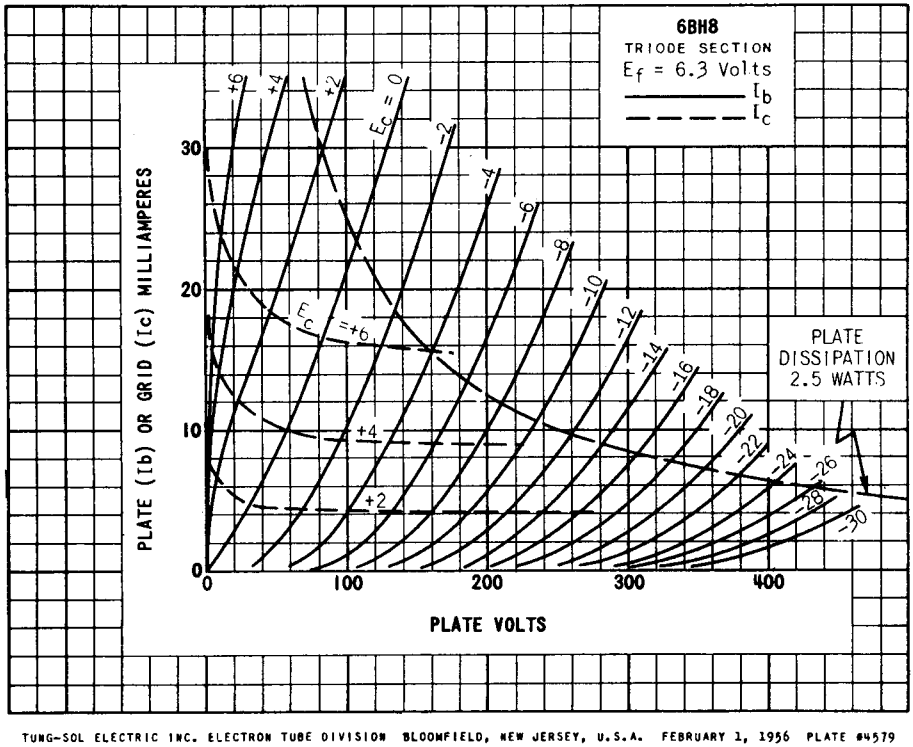

6BH8
E_f = 6.3 Volts
E_{c_2} = 125 Volts
I_b@E_{c_1} = 0 Volts
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
-4.0
-4.5
-5.0
-6.0
I_{c_2}@E_{c_1} = 0 Volts
-2.0
-4.0
PLATE DISSIPATION 3.0 Watts
PLATE (I_b) OR GRID #2 CURRENT - MILLIAMPERES
PLATE VOLTS
0
100
200
300
400
500
5
10
15
20
25
30


I_{c_1}@E_{c_1} = +6.0 Volts
+4.0
+2.0
6BH8
E_f = 6.3 Volts
E_{c_2} = 125 Volts
I_b@E_{c_1} = +6.0 Volts
+5.0
+4.0
+3.0
+2.0
+1.0
0
-1.0
-2.0
-3.0
-4.0
-5.0
I_{c_2}@E_{c_1} = +6.0 Volts
+4.0
+2.0
0
-2.0
GRID #1 CURRENT MILLIAMPERES
PLATE (I_b) OR GRID #2 CURRENT - MILLIAMPERES
PLATE VOLTS
0
100
200
300
400
500
25
50
75
100
2
4
6
8


6BH8
PENTODE SECTION
Ef = 6.3 Volts
Eb = 200 Volts
Ec2 = 150 Volts
125
100
75
50
PLATE CURRENT - MILLIAMPERES
40
30
20
10
0
-7
-6
-5
-4
-3
-2
-1
0
GRID #1 VOLTS


6BH8
PENTODE SECTION
Ef = 6.3 Volts
Eb = 200 Volts
Ec2 = 150 Volts
125
100
75
50
GRID #2 CURRENT - MILLIAMPERES
10
8
6
4
2
0
-7
-6
-5
-4
-3
-2
-1
0
GRID #1 VOLTS


6BH8
PENTODE SECTION
E_f = 6.3 Volts
E_b = 200 Volts
E_{c2} = 150 Volts
125
100
75
50
10000
8000
6000
4000
2000
0
TRANSCONDUCTANCE (g_m) - MICROMHOS
-7
-6
-5
-4
-3
-2
-1
0
GRID #1 VOLTS


6BH8
TRIODE SECTION
E_f = 6.3 Volts
I_b
I_c
+6
+4
+2
E_c = 0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
E_c = +6
+4
+2
PLATE DISSIPATION 2.5 WATTS
30
20
10
0
PLATE (Ib) OR GRID (Ic) MILLIAMPERES
0
100
200
300
400
PLATE VOLTS