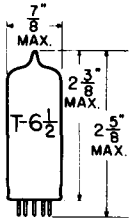
TUNG-SOL

TRIODE-PENTODE

MINIATURE TYPE



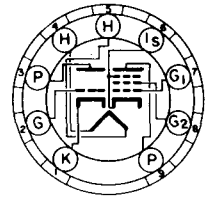
GLASS BULB

COATED UNIPOTENTIAL CATHODE

HEATER

6.3 VOLTS 0.75 AMP.
AC OR DC

ANY MOUNTING POSITION



BOTTOM VIEW
SMALL BUTTON
9 PIN BASE
90X

THE 6CX8 IS A SHARP-CUTOFF PENTODE AND A MEDIUM-MU TRIODE IN THE 9 PIN MINIATURE CONSTRUCTION. THE PENTODE SECTION IS INTENDED PRIMARILY FOR USE AS A VIDEO AMPLIFIER. THE TRIODE SECTION IS SUITABLE FOR A 4.5 MEGACYCLE SOUND IF AMPLIFIER, SWEEP OSCILLATOR, SYNC SEPARATOR, SYNC AMPLIFIER, OR SYNC CLIPPER. EXCEPT FOR HEATER RATINGS AND HEATER WARM-UP TIME, THE 6CX8 IS IDENTICAL TO THE 8CX8.

DIRECT INTERELECTRODE CAPACITANCES

WITHOUT EXTERNAL SHIELD

PENTODE SECTION:		
GRID #1 TO PLATE	0.06	μμf
INPUT	9.0	μμf
OUTPUT	4.4	μμf
TRIODE SECTION:		
GRID TO PLATE	4.4	μμf
INPUT	2.2	μμf
OUTPUT	0.38	μμf
PENTODE GRID #1 TO TRIODE PLATE (MAX.)	.005	μμf
TRIODE GRID TO PENTODE PLATE (MAX.)	.018	μμf
PENTODE PLATE TO TRIODE PLATE (MAX.)	0.17	μμf

RATINGS

INTERPRETED ACCORDING TO DESIGN CENTER SYSTEM

	PENTODE SECTION	TRIODE SECTION	
HEATER VOLTAGE	6.3±10%	6.3±10%	VOLTS
MAXIMUM PLATE VOLTAGE	330	330	VOLTS
MAXIMUM SCREEN-SUPPLY VOLTAGE	330	---	VOLTS
MAXIMUM SCREEN VOLTAGE	SEE RATING CHART		
MAXIMUM POSITIVE DC GRID #1 VOLTAGE	0	0	VOLTS
MAXIMUM PLATE DISSIPATION	5.0	2.0	WATTS
MAXIMUM SCREEN DISSIPATION	1.1	---	WATTS

CONTINUED ON FOLLOWING PAGE

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TUNG-SOL

CONTINUED FROM PRECEDING PAGE

RATINGS - CONT'D

INTERPRETED ACCORDING TO DESIGN CENTER SYSTEM

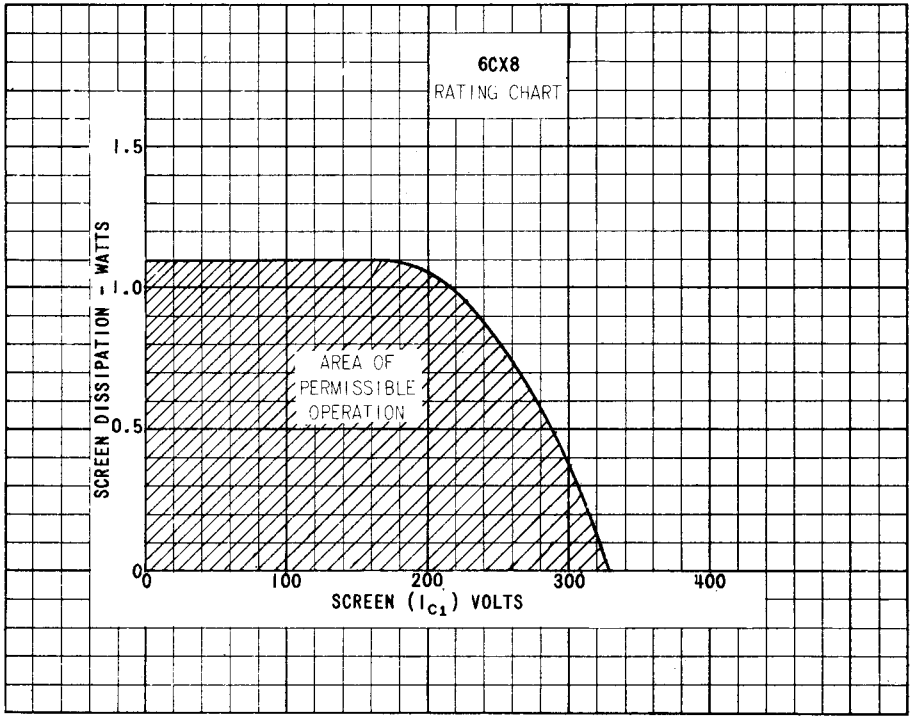
	PENTODE SECTION	TRIODE SECTION	
MAXIMUM HEATER-CATHODE VOLTAGE:			
HEATER POSITIVE WITH RESPECT TO CATHODE			
DC COMPONENT	100	100	VOLTS
TOTAL DC AND PEAK	200	200	VOLTS
HEATER NEGATIVE WITH RESPECT TO CATHODE			
TOTAL DC AND PEAK	200	200	VOLTS
MAXIMUM GRID #1 CIRCUIT RESISTANCE			
WITH FIXED BIAS	0.25	0.5	MEGOHMS
WITH CATHODE BIAS	1.0	1.0	MEGOHMS
HEATER WARM-UP TIME (APPROX.)*	11.0		SECONDS

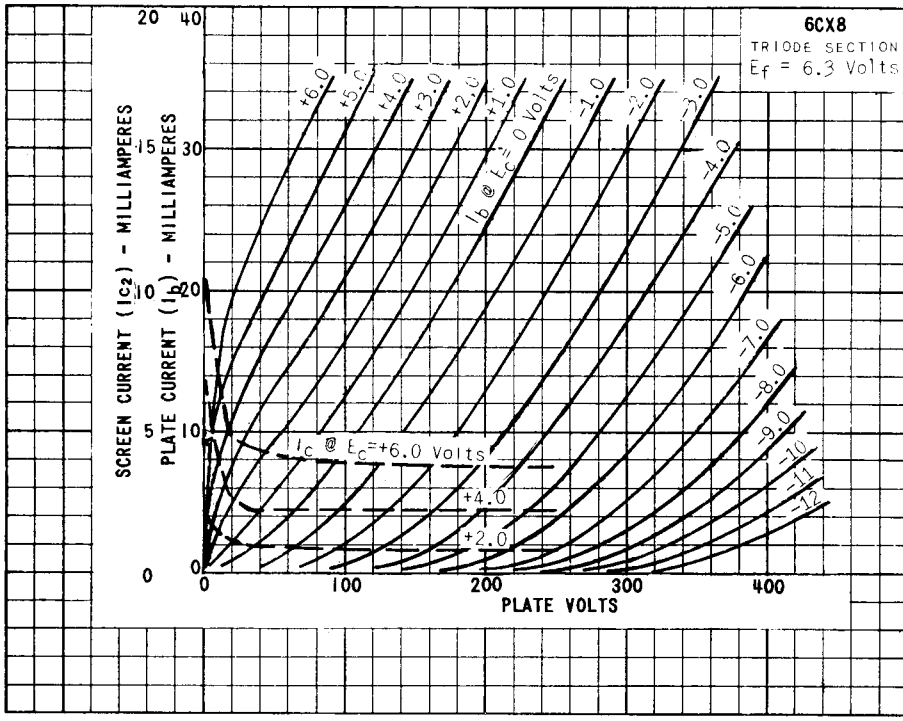
TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

CLASS A_1 AMPLIFIER

		PENTODE SECTION	TRIODE SECTION	
HEATER VOLTAGE	6.3±10%	6.3±10%	6.3±10%	VOLTS
HEATER CURRENT	0.75	0.75	0.75	AMP.
PLATE VOLTAGE	40	200	150	VOLTS
SCREEN VOLTAGE	125	125	---	VOLTS
GRID #1 VOLTAGE	0[A]	---	---	VOLTS
CATHODE-BIAS RESISTOR	---	68	150	OHMS
AMPLIFICATION FACTOR	---	---	40	
PLATE RESISTANCE (APPROX.)	---	70 000	8 700	OHMS
TRANSCONDUCTANCE	---	10 000	4 600	μMHOS
PLATE CURRENT	40	24	9.2	MA.
SCREEN CURRENT	15.5	5.2	---	MA.
GRID #1 VOLTAGE (APPROX.)				
I_b = 100μA.	---	-8.5	-5.0	VOLTS

DESIGN-MAXIMUM RATINGS ARE THE LIMITING VALUES EXPRESSED WITH RESPECT TO BOGIE TUBES AT WHICH SATISFACTORY TUBE LIFE CAN BE EXPECTED TO OCCUR. TO OBTAIN SATISFACTORY CIRCUIT PERFORMANCE, THEREFORE, THE EQUIPMENT DESIGNER MUST ESTABLISH THE CIRCUIT DESIGN SO THAT NO DESIGN-MAXIMUM VALUE IS EXCEEDED WITH A BOGIE TUBE UNDER THE WORST PROBABLE OPERATING CONDITIONS WITH RESPECT TO SUPPLY-VOLTAGE VARIATION, EQUIPMENT COMPONENT VARIATION, EQUIPMENT CONTROL ADJUSTMENT, LOAD VARIATION, AND ENVIRONMENTAL CONDITIONS.





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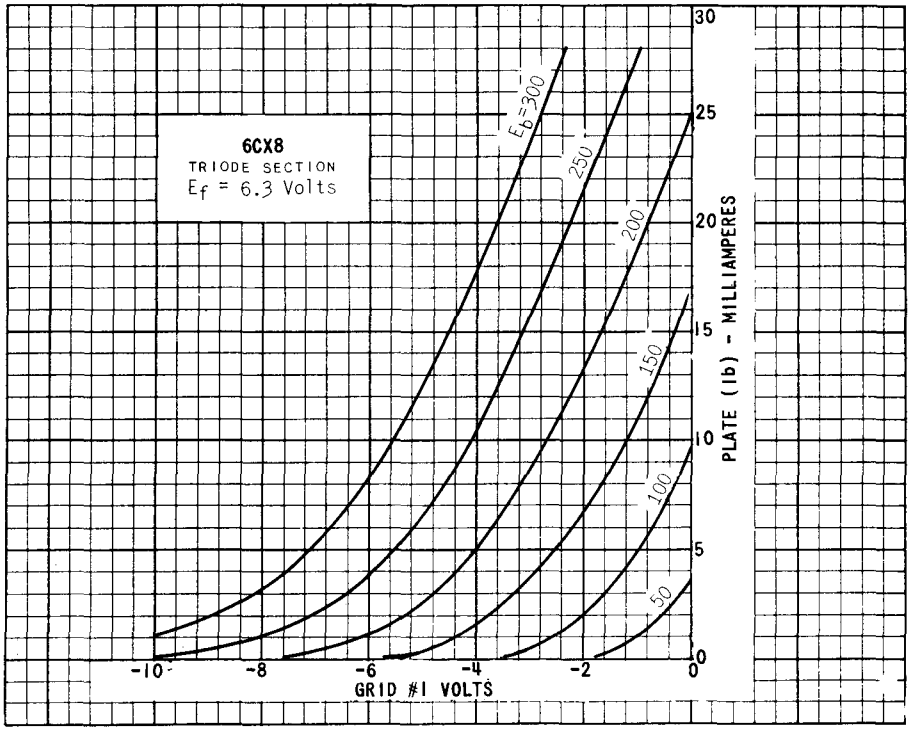
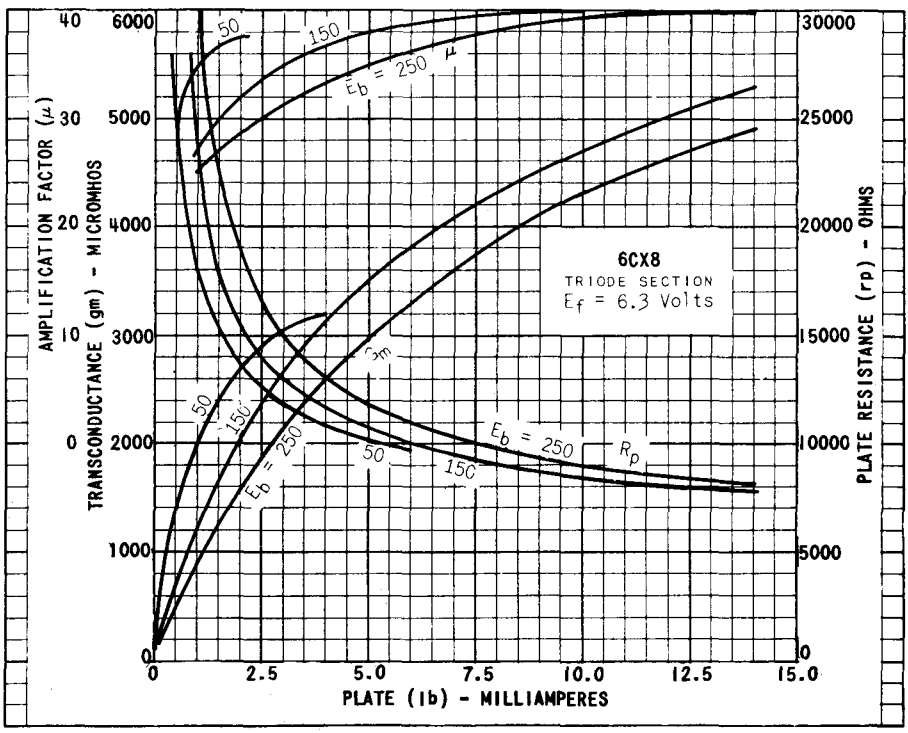
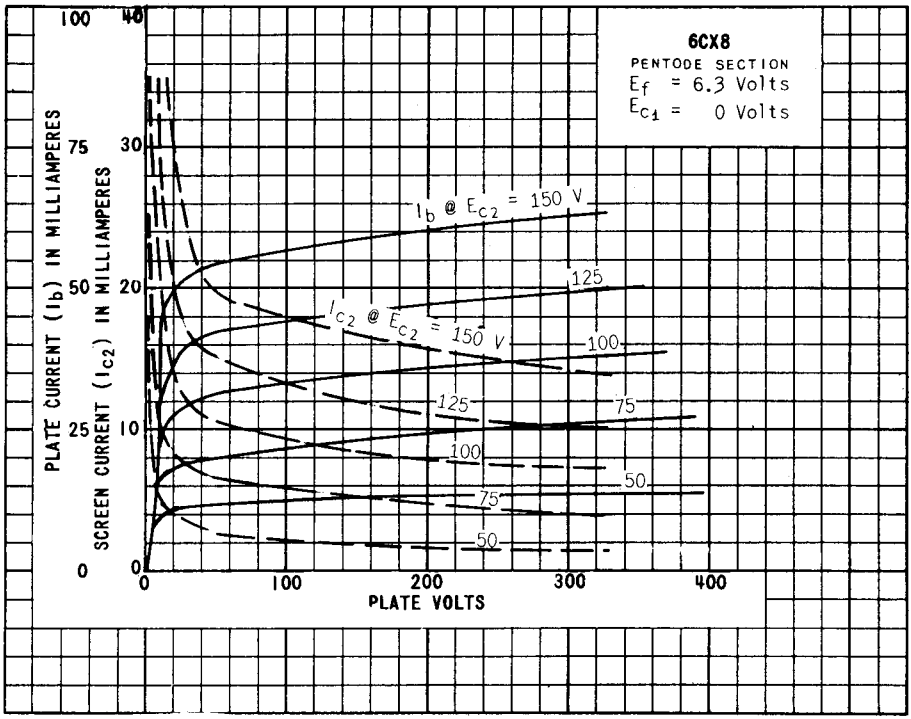
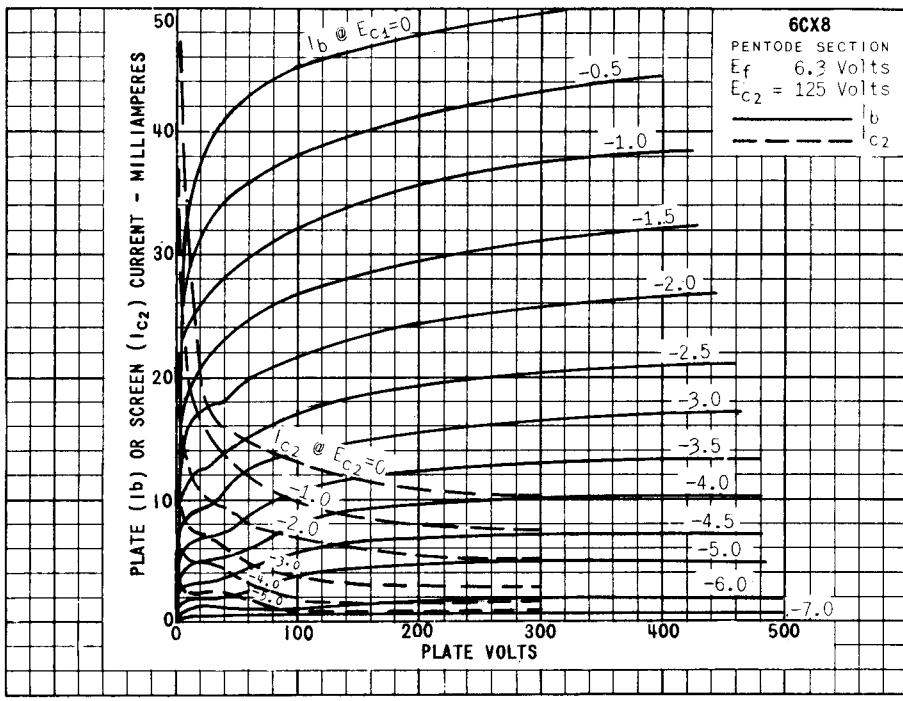
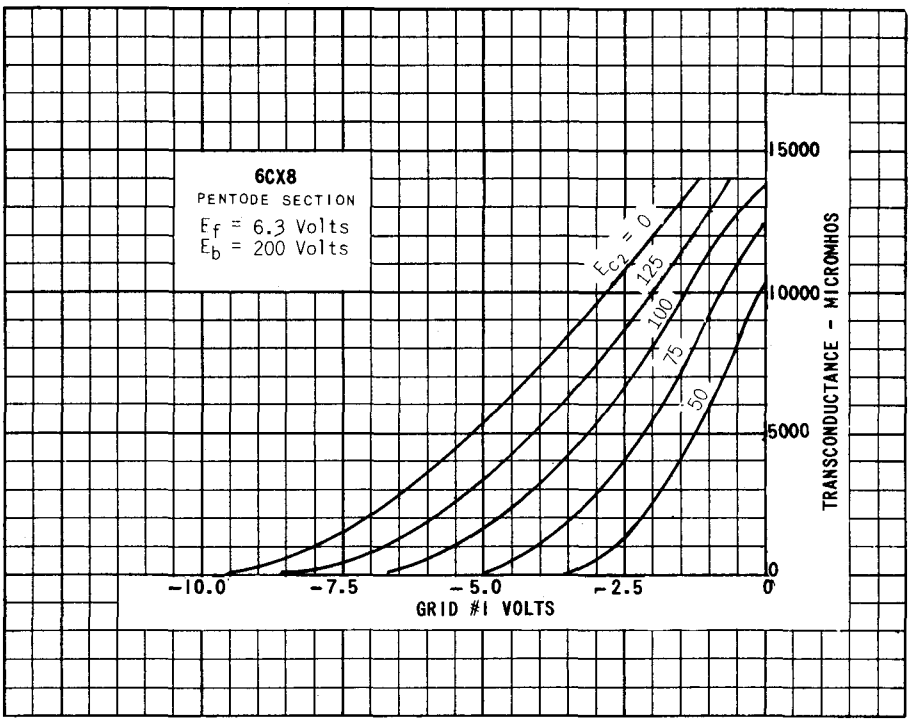
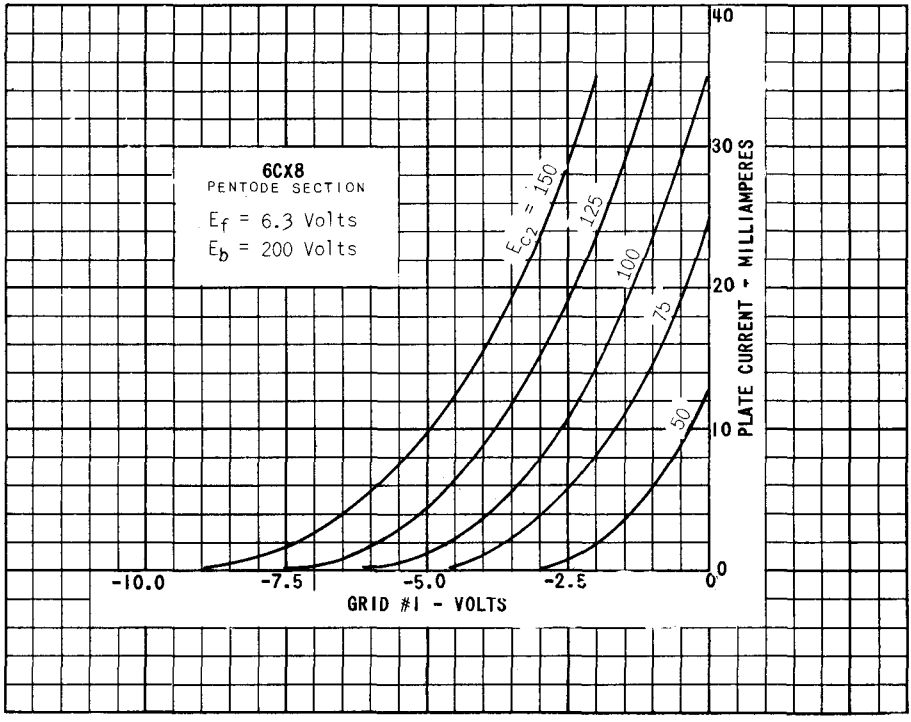

6CX8
TRIODE SECTION
Ef = 6.3 Volts
Eb=300
250
200
150
100
50
-10
-8
-6
-4
-2
0
GRID #1 VOLTS
30
25
20
15
10
5
0
PLATE (Ib) - MILLIAMPERES

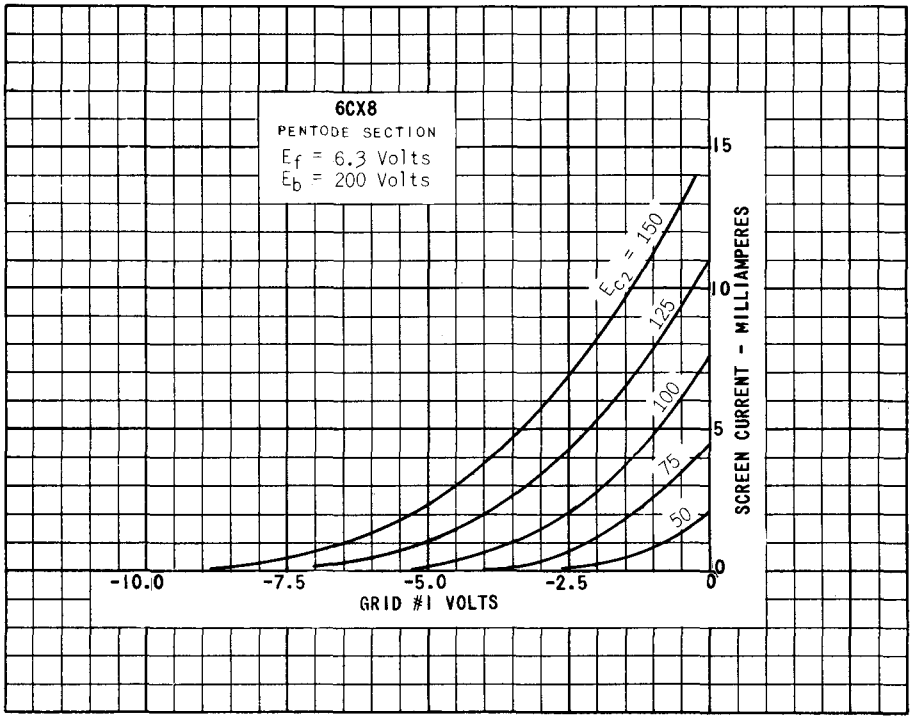

6CX8
TRIODE SECTION
Ef = 6.3 Volts
50
150
Eb = 250
μ
gm
Rp
40
30
20
10
0
AMPLIFICATION FACTOR (μ)
6000
5000
4000
3000
2000
1000
0
TRANSCONDUCTANCE (gm) - MICROMHOS
30000
25000
20000
15000
10000
5000
0
PLATE RESISTANCE (rp) - OHMS
0
2.5
5.0
7.5
10.0
12.5
15.0
PLATE (Ib) - MILLIAMPERES


6CX8
PENTODE SECTION
Ef = 6.3 Volts
Ec1 = 0 Volts
PLATE CURRENT (Ib) IN MILLIAMPERES
SCREEN CURRENT (Ic2) IN MILLIAMPERES
Ib @ Ec2 = 150 V
125
100
75
50
Ic2 @ Ec2 = 150 V
125
100
75
50
PLATE VOLTS


6CX8
PENTODE SECTION
Ef 6.3 Volts
Ec2 = 125 Volts
Ib
Ic2
PLATE (Ib) OR SCREEN (Ic2) CURRENT - MILLIAMPERES
Ib @ Ec1=0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
-4.0
-4.5
-5.0
-6.0
-7.0
Ic2 @ Ec2=0
-1.0
-2.0
-3.0
-4.0
-5.0
PLATE VOLTS


6CX8
PENTODE SECTION
Ef = 6.3 Volts
Eb = 200 Volts
Ec2 = 0
125
100
75
50
15000
10000
5000
0
TRANSCONDUCTANCE - MICROMHOS
-10.0
-7.5
-5.0
-2.5
0
GRID #1 VOLTS


6CX8
PENTODE SECTION
Ef = 6.3 Volts
Eb = 200 Volts
Ec2 = 150
125
100
75
50
40
30
20
10
0
PLATE CURRENT - MILLIAMPERES
-10.0
-7.5
-5.0
-2.5
0
GRID #1 - VOLTS



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