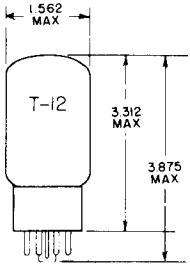
TUNG-SOL

BEAM PENTODE



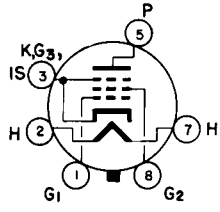
GLASS BULB
SHORT MEDIUM SHELL
6 PIN OCTAL B6-112

OUTLINE DRAWING
JEDEC 12-14

COATED UNIPOTENTIAL CATHODE

FOR HORIZONTAL-DEFLECTION AMPLIFIER APPLICATIONS IN TV RECEIVERS

ANY MOUNTING POSITION



BOTTOM VIEW

BASING DIAGRAM
JEDEC 6CK

THE 6FW5 IS A BEAM-POWER PENTODE PRIMARILY DESIGNED FOR USE AS THE HORIZONTAL-DEFLECTION AMPLIFIER IN TELEVISION RECEIVERS. ITS HIGH ZERO-BIAS PLATE CURRENT AT LOW PLATE AND SCREEN VOLTAGES MAKES THE TUBE WELL SUITED FOR USE IN RECEIVERS THAT OPERATE AT LOW PLATE-SUPPLY VOLTAGES.

DIRECT INTERELECTRODE CAPACITANCES - APPROX.

WITHOUT EXTERNAL SHIELD

GRID #1 TO PLATE: (G1 TO P)	0.5	pf
INPUT: G1 TO (H+K+G2+B.P.)	15	pf
OUTPUT: P TO (H+K+G2+B.P.)	7.0	pf

HEATER CHARACTERISTICS AND RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

AVERAGE CHARACTERISTICS	6.3 VOLTS	1200	MA.
HEATER SUPPLY LIMITS:			
VOLTAGE OPERATION		6.3±0.6	VOLTS
MAXIMUM HEATER CATHODE VOLTAGE:			
HEATER POSITIVE WITH RESPECT TO CATHODE			
TOTAL DC AND PEAK		200	VOLTS
HEATER NEGATIVE WITH RESPECT TO CATHODE			
DC		100	VOLTS
TOTAL DC AND PEAK		200	VOLTS

CONTINUED ON FOLLOWING PAGE

CONTINUED FROM PRECEDING PAGE

MAXIMUM RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

HORIZONTAL-DEFLECTION AMPLIFIER SERVICE[A]

DC PLATE-SUPPLY VOLTAGE (BOOST+DC POWER SUPPLY)	770	VOLTS
PEAK POSITIVE PULSE PLATE VOLTAGE	6500	VOLTS
SCREEN VOLTAGE	220	VOLTS
NEGATIVE DC GRID #1 VOLTAGE	55	VOLTS
PEAK NEGATIVE GRID #1 VOLTAGE	330	VOLTS
PLATE DISSIPATION[B]	18	WATTS
SCREEN DISSIPATION	3.6	WATTS
DC CATHODE CURRENT	175	MA.
PEAK CATHODE CURRENT	610	MA.
GRID #1 CIRCUIT RESISTANCE	1.0	MEGOHMS
BULB TEMPERATURE AT HOTTEST POINT	220	°C

TYPICAL OPERATING CHARACTERISTICS

AVERAGE CHARACTERISTICS

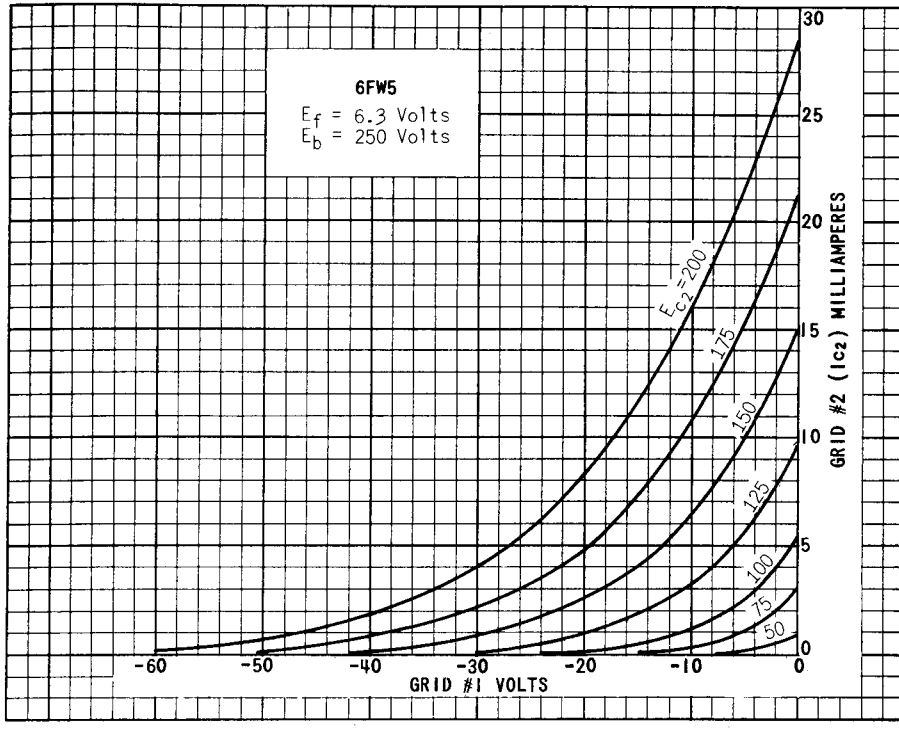
PLATE VOLTAGE	5000	60	250	VOLTS
SCREEN VOLTAGE	150	150	150	VOLTS
GRID #1 VOLTAGE	---	0[C]	-22.5	VOLTS
PLATE RESISTANCE (APPROX.)	---	---	18000	OHMS
TRANSCONDUCTANCE	---	---	7300	μMHOS
PLATE CURRENT	---	345	65	MA.
SCREEN CURRENT	---	27	1.8	MA.
GRID #1 VOLTAGE (APPROX.)				
Ib = 1.0 MA.	-100	---	-42	VOLTS
TRIODE AMPLIFICATION FACTOR[D]	---	---	4.4	

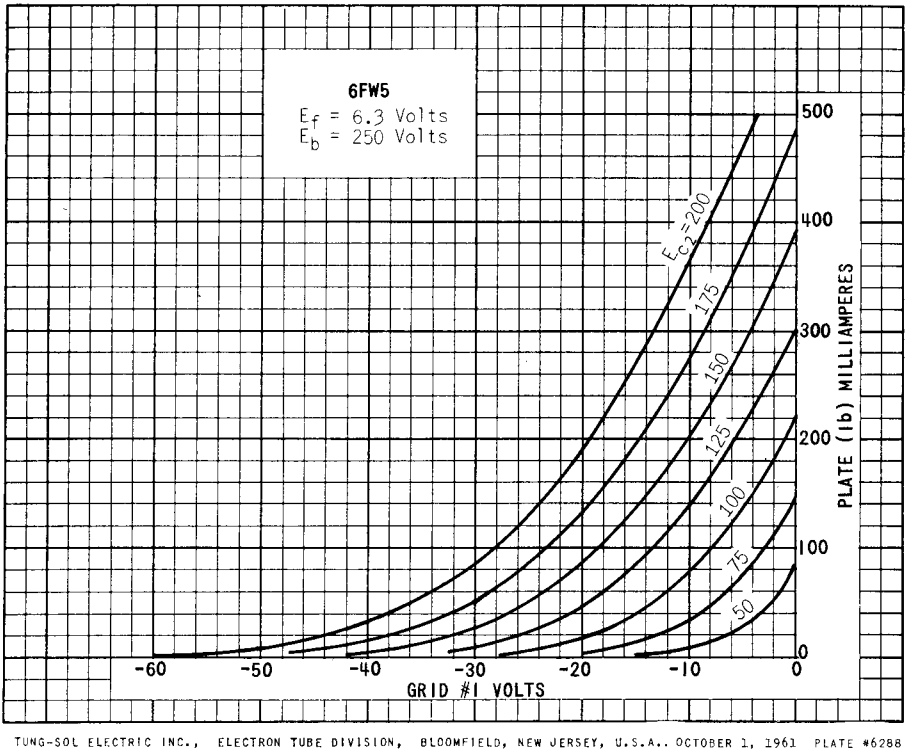
[A] FOR OPERATION IN A 525-LINE, 30-FRAME SYSTEM AS DESCRIBED IN "STANDARDS OF GOOD ENGINEERING PRACTICE FOR TELEVISION BROADCAST STATIONS: FEDERAL COMMUNICATIONS COMMISSION", THE DUTY CYCLE OF THE VOLTAGE PULSE MUST NOT EXCEED 15% OF ONE SCANNING CYCLE.

[B] IN STAGES OPERATING WITH GRID LEAK BIAS, AN ADEQUATE CATHODE BIAS RESISTOR OR OTHER SUITABLE MEANS IS REQUIRED TO PROTECT THE TUBE IN THE ABSENCE OF EXCITATION.

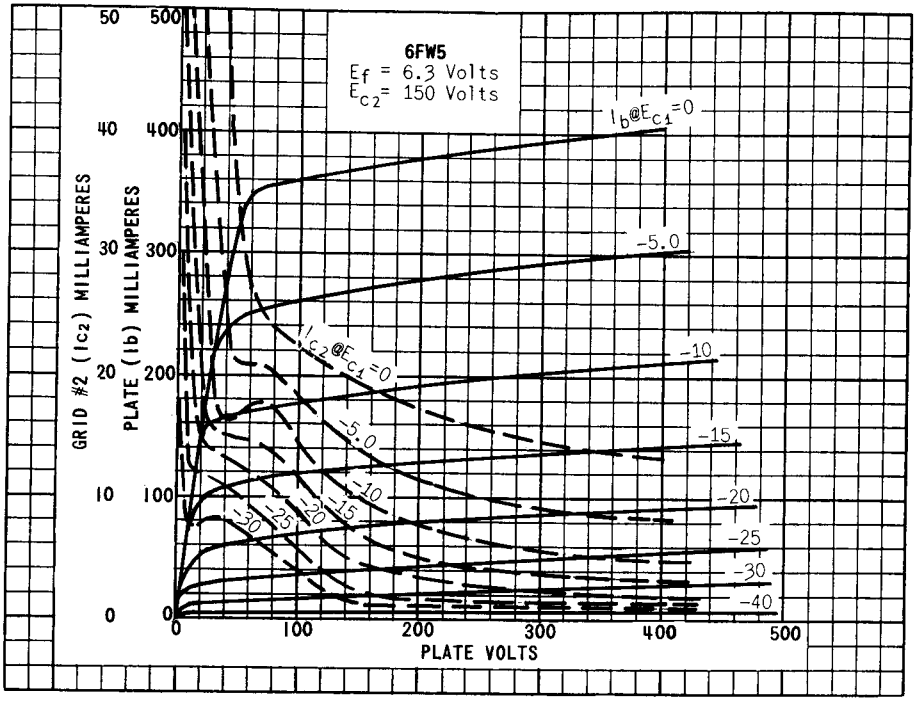
[C] APPLIED FOR SHORT INTERVAL (TWO SECONDS MAXIMUM) SO AS NOT TO DAMAGE TUBE.

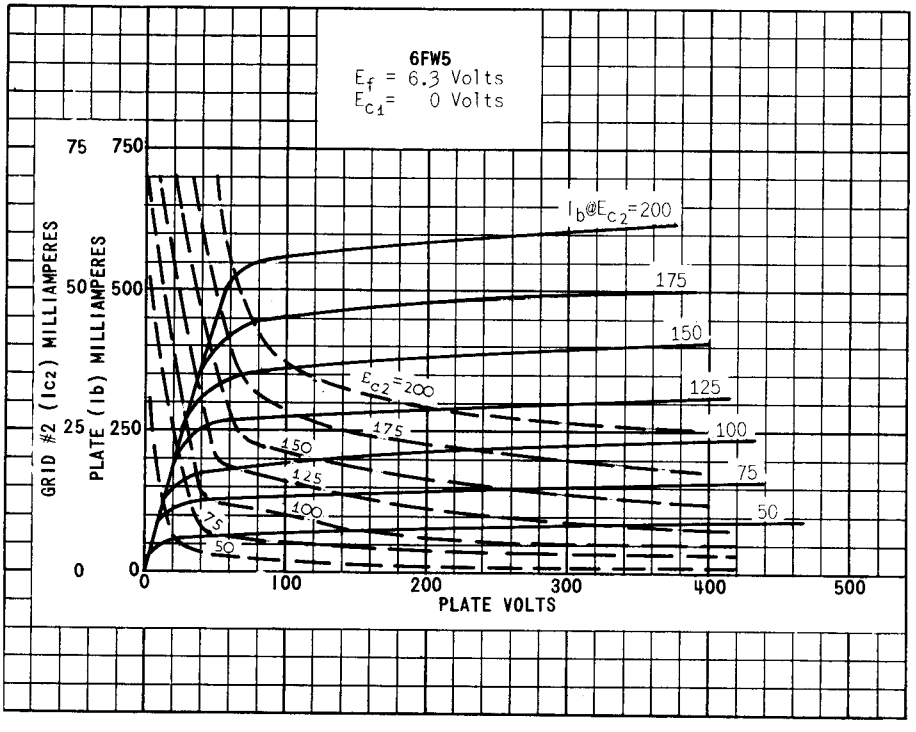
[D] TRIODE CONNECTION (SCREEN TIED TO PLATE) WITH Eb=Ec2=150 VOLTS AND Ec1=-22.5 VOLTS.


6FW5
E_f = 6.3 Volts
E_b = 250 Volts
E_{c2}=200
175
150
125
100
75
50
30
25
20
15
10
5
0
GRID #2 (Ic2) MILLIAMPERES
-60
-50
-40
-30
-20
-10
0
GRID #1 VOLTS


6FW5
E_f = 6.3 Volts
E_b = 250 Volts
E_{c2}=200
175
150
125
100
75
50
500
400
300
200
100
0
PLATE (Ib) MILLIAMPERES
-60
-50
-40
-30
-20
-10
0
GRID #1 VOLTS

6FW5


6FW5
Ef = 6.3 Volts
Ec2 = 150 Volts
Ib@Ec1=0
-5.0
-10
-15
-20
-25
-30
-40
Ic2@Ec1=0
-5.0
-10
-15
-20
-25
-30
GRID #2 (Ic2) MILLIAMPERES
PLATE (Ib) MILLIAMPERES
PLATE VOLTS
0
100
200
300
400
500
10
20
30
40
50


6FW5
Ef = 6.3 Volts
Ec1 = 0 Volts
Ib@Ec2=200
175
150
125
100
75
50
Ec2=200
175
150
125
100
75
50
GRID #2 (Ic2) MILLIAMPERES
PLATE (Ib) MILLIAMPERES
PLATE VOLTS
0
100
200
300
400
500
25
50
75