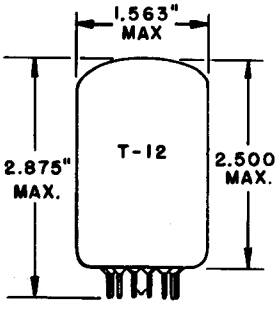
TUNG-SOL

DIODE-PENTODE



COMPACTRON

HIGH-PERVEANCE

DIODE

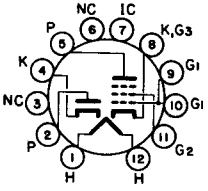
AND BEAM POWER PENTODE

FOR

TELEVISION APPLICATIONS

COATED UNIPOTENTIAL CATHODE

ANY MOUNTING POSITION



GLASS BULB
BUTTON 12 PIN
BASE E12-74
OUTLINE DRAWING
JEDEC 12-56

BOTTOM VIEW
BASING DIAGRAM
JEDEC 12 FN
SOCKET TERMINALS
3,6,7 SHOULD NOT
BE USED AS TIE POINTS

THE 33GY7 IS A HIGH-PERVEANCE DIODE AND A BEAM-POWER PENTODE IN THE T-12 COMPACTRON CONSTRUCTION. IT IS DESIGNED FOR SERVICE AS THE DAMPING DIODE AND THE PENTODE AS THE HORIZONTAL-DEFLECTION AMPLIFIER IN TELEVISION RECEIVERS.

DIRECT INTERELECTRODE CAPACITANCES
WITHOUT EXTERNAL SHIELD

DIODE SECTION		
CATHODE TO PLATE AND HEATER: K TO (P + H)	8.5	pf
PLATE TO CATHODE AND HEATER: P TO (K + H)	5.5	pf
HEATER TO CATHODE: (H TO K)	3.2	pf
PENTODE SECTION		
GRID 1 TO PLATE: (G1 TO P)	0.2	pf
INPUT: G1 TO (H + K + G2 + G3)	17	pf
OUTPUT: P TO (H + K + G2 + G3)	7.0	pf

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HEATER CHARACTERISTICS AND RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

AVERAGE CHARACTERISTICS	33.6 VOLTS	450	MA.
HEATER WARM-UP TIME		11	SECONDS
LIMITS OF SUPPLIED CURRENT		450 ± 30	MA.
HEATER-CATHODE VOLTAGE	DIODE SECTION	PENTODE SECTION	
HEATER POSITIVE WITH RESPECT TO CATHODE			
DC COMPONENT	100	100	VOLTS
TOTAL DC AND PEAK	200	200	VOLTS
HEATER NEGATIVE WITH RESPECT TO CATHODE			
DC COMPONENT	400		VOLTS
TOTAL DC AND PEAK	4,200	200	VOLTS

MAXIMUM RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

BULB TEMPERATURE AT HOTTEST POINT	200	^{0} C
DIODE SECTION		
PEAK INVERSE PLATE VOLTAGE	4,200	VOLTS
PLATE DISSIPATION [B]	3.8	WATTS
STEADY-STATE PEAK PLATE CURRENT	810	MA.
DC OUTPUT CURRENT	135	MA.
PENTODE SECTION		
DC PLATE-SUPPLY VOLTAGE (BOOST + DC POWER SUPPLY)	400	VOLTS
PEAK POSITIVE PULSE PLATE VOLTAGE	5,000	VOLTS
PEAK NEGATIVE PULSE PLATE VOLTAGE	0	VOLTS
GRID 2 VOLTS	150	VOLTS
NEGATIVE DC GRID 1 VOLTAGE	55	VOLTS
PEAK NEGATIVE GRID 1 VOLTAGE	330	VOLTS
PLATE DISSIPATION	9.0	WATTS
GRID 2 DISSIPATION	3.0	WATTS
DC CATHODE CURRENT	155	MA.
PEAK CATHODE CURRENT	540	MA.
GRID 1 CIRCUIT RESISTANCE	1.0	MEGOHMS

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

CONTINUED ON FOLLOWING PAGE

TUNG-SOL

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AVERAGE CHARACTERISTICS

PENTODE SECTION

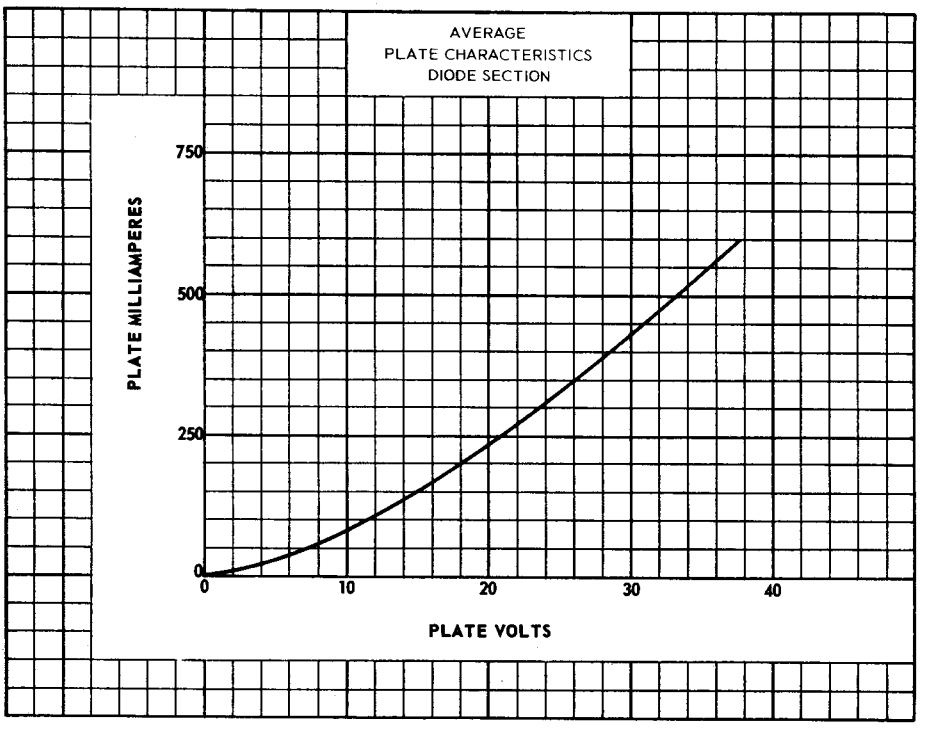
PLATE VOLTAGE		5,000	60	130	VOLTS
GRID 2 VOLTAGE		130	130	130	VOLTS
GRID 1 VOLTAGE		-	0 [C]	-22.5	VOLTS
PLATE CURRENT		-	320	48	MA.
GRID 2 CURRENT		-	22	2.9	MA.
TRANSCONDUCTANCE		-	-	6,500	μMHOS
PLATE RESISTANCE	(Approx.)	-	-	10,000	OHMS
GRID 1 VOLTAGE FOR I_b = 1.0 MA.	(Approx.)	-80	-	-40	VOLTS
TRIODE AMPLIFICATION FACTOR [D]		-	-	4.0	

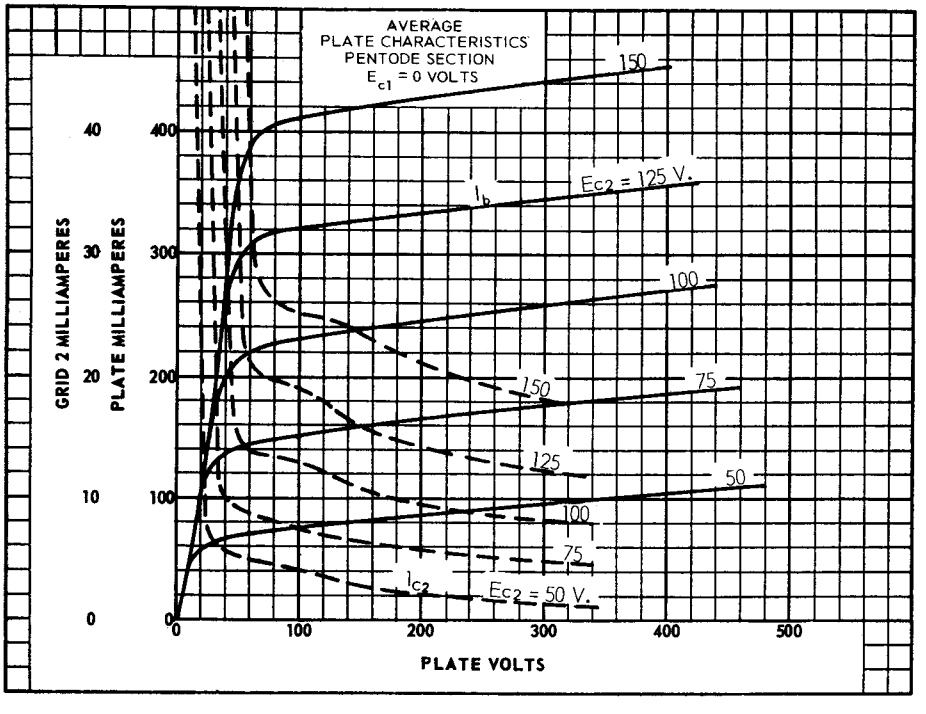
DIODE SECTION

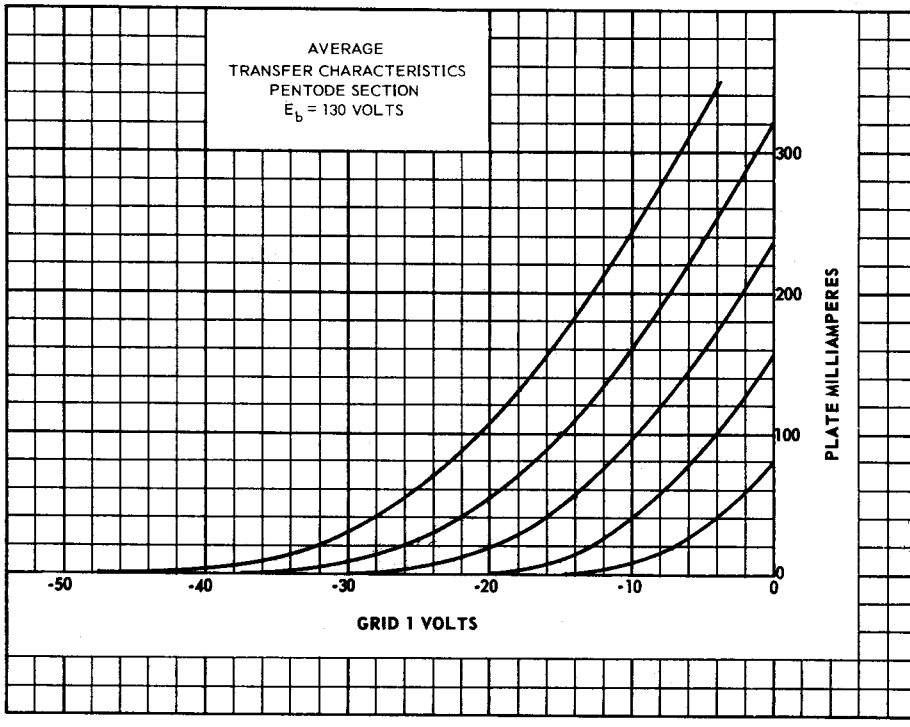
TUBE VOLTAGE DROP FOR I_b = 250 MA.				21	VOLTS

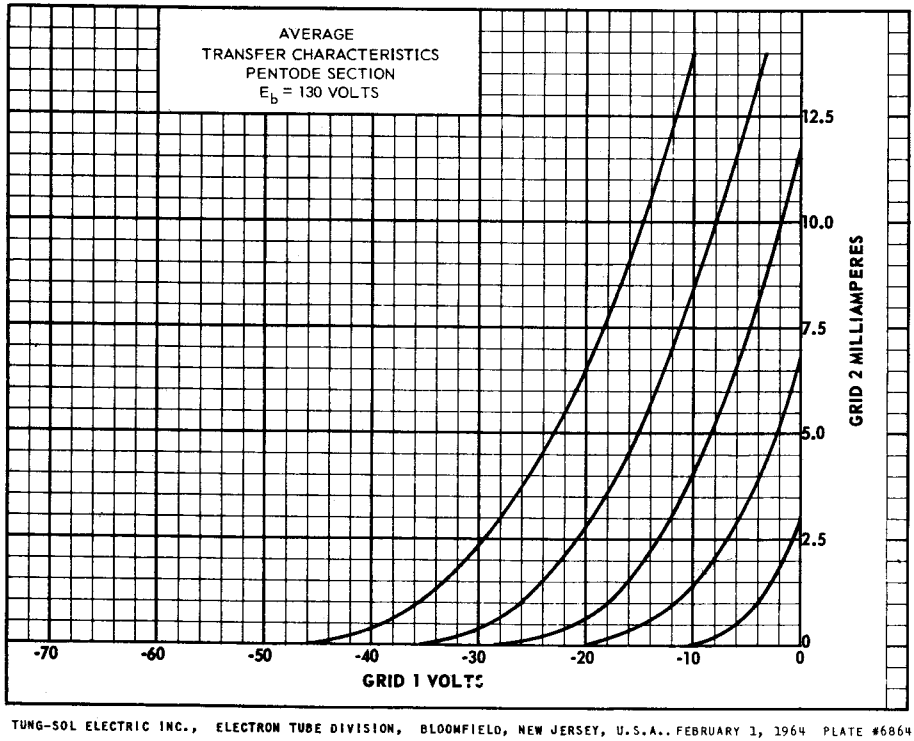
C- APPLIED FOR SHORT INTERVAL (TWO SECONDS MAXIMUM) SO AS NOT TO DAMAGE TUBE.
D- TRIODE CONNECTION (GRID 2 TIED TO PLATE) WITH Eb = Ec2 = 130 VOLTS AND Ec1 = - 22.5 VOLTS.

33GY7


AVERAGE
PLATE CHARACTERISTICS
DIODE SECTION
PLATE MILLIAMPERES
750
500
250
0
0
10
20
30
40
PLATE VOLTS


AVERAGE
PLATE CHARACTERISTICS
PENTODE SECTION
E_{c1} = 0 VOLTS
GRID 2 MILLIAMPERES
PLATE MILLIAMPERES
40
30
20
10
0
400
300
200
100
0
0
100
200
300
400
500
PLATE VOLTS
150
I_b
E_{c2} = 125 V.
100
150
75
125
50
100
75
I_{c2}
E_{c2} = 50 V.





TUNG-SOL ELECTRIC INC., ELECTRON TUBE DIVISION, BLOOMFIELD, NEW JERSEY, U.S.A.. FEBRUARY 1, 1964 PLATE #6864