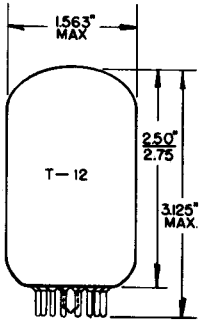
TUNG-SOL

DIODE - PENTODE

COMPACTRON



GLASS BULB
BUTTON 12 PIN BASE E1274
OUTLINE DRAWING
JEDEC 12 - 57

FOR

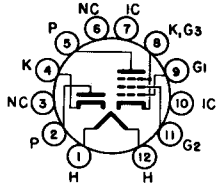
COMBINED DAMPING

AND AMPLIFIER SERVICE

IN TV RECEIVERS

COATED UNIPOTENTIAL CATHODE

ANY MOUNTING POSITION



BOTTOM VIEW
BASING DIAGRAM
JEDEC 12 FS

THE 38HE7 IS A HIGH-PERVEANCE DIODE AND A BEAM-POWER PENTODE IN THE T-12 COMPACTRON CONSTRUCTION. THE DIODE 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)	8.0	pf
PLATE TO CATHODE AND HEATER: P TO (K + H)	7.0	pf
HEATER TO CATHODE: (H TO K)	1.6	pf

PENTODE SECTION

GRID 1 TO PLATE: (G_1 TO P)	0.38	pf
INPUT: G 1 TO (H + K + G_2 + G_3)	19	pf
OUTPUT: P TO (H + K + G_2 + G_3)	8.0	pf

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HEATER CHARACTERISTICS AND RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

AVERAGE CHARACTERISTICS	37.8	VOLTS	450	MA.
HEATER WARM-UP TIME		APPROX.	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		500		
TOTAL DC AND PEAK		4,200	200	VOLTS

RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

HORIZONTAL-DEFLECTION AMPLIFIER SERVICE

DC PLATE-SUPPLY VOLTAGE (BOOST + DC POWER SUPPLY)	500	VOLTS
PEAK POSITIVE PULSE PLATE VOLTAGE	5,000	VOLTS
PEAK NEGATIVE PULSE PLATE VOLTAGE	0	VOLTS
GRID 2 VOLTAGE	150	VOLTS
NEGATIVE DC GRID 1 VOLTAGE	55	VOLTS
PEAK NEGATIVE GRID 1 VOLTAGE	330	VOLTS
PLATE DISSIPATION	10	WATTS
GRID 2 DISSIPATION	3.5	WATTS
GRID 2 DISSIPATION FOR $P_p \leq 9$ WATTS	4.0	WATTS
DC CATHODE CURRENT	230	MA.
GRID 1 CIRCUIT RESISTANCE	1.0	MEGOHMS

TV DAMPER SERVICE

PEAK INVERSE PLATE VOLTAGE	4,200	VOLTS
STEADY-STATE PEAK PLATE CURRENT	1,200	MA.
DC OUTPUT CURRENT	200	MA.
BULB TEMPERATURE AT HOTTEST POINT	200	°C

CHARACTERISTICS AND TYPICAL OPERATION

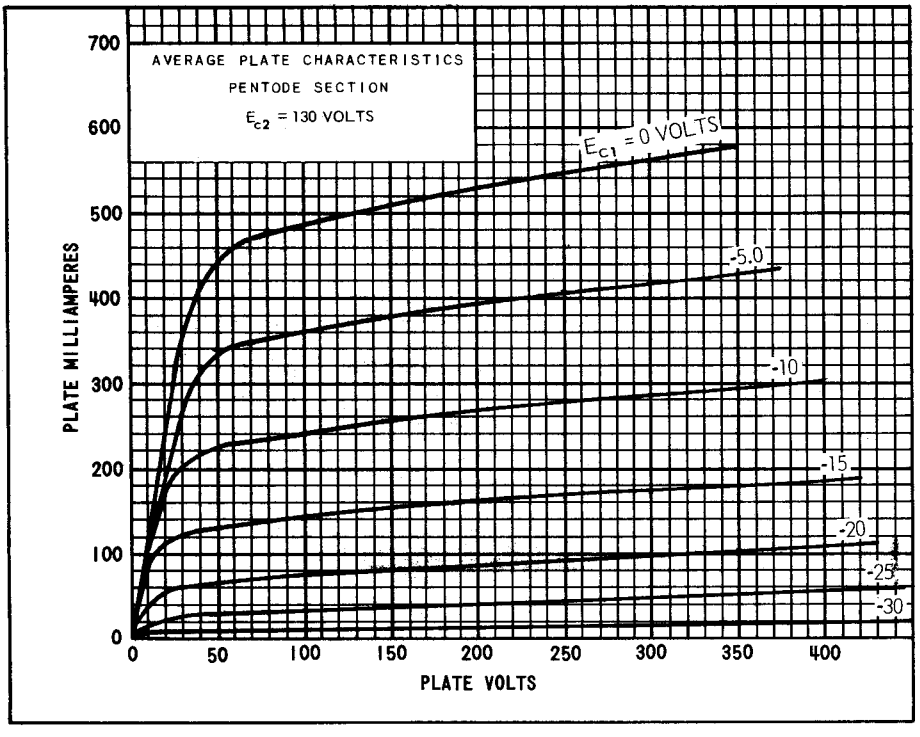
PENTODE SECTION

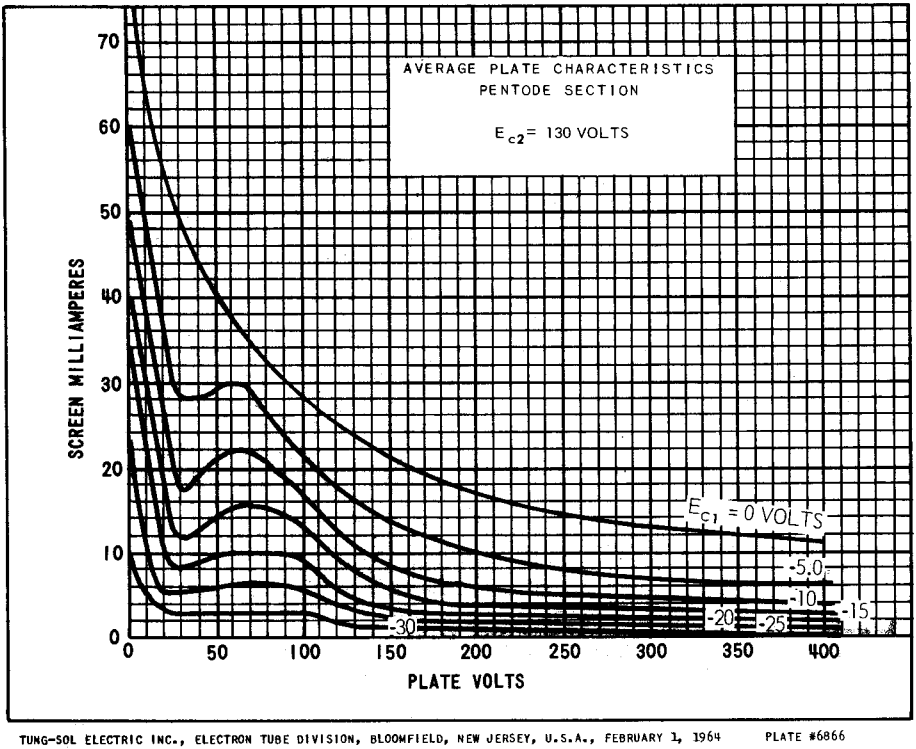
PLATE VOLTAGE	5,000	50	130	VOLTS
GRID 2 VOLTAGE	130	130	130	VOLTS
GRID 1 VOLTAGE	-	0 [A]	-22	VOLTS
PLATE CURRENT	-	450	60	MA.
GRID 2 CURRENT	-	40	2.8	MA.
TRANSCONDUCTANCE	-	-	8,800	MICROMHOS
TRIODE AMPLIFICATION FACTOR - GRID 2 TIED TO PLATE	-	-	4.2	
GRID 1 VOLTAGE FOR I_b = 1.0 MA. APPROX.	-80	-	-39	VOLTS

DIODE SECTION

TUBE VOLTAGE DROP FOR I_b = 350 MADC	21	VOLTS

A - APPLIED FOR SHORT INTERVAL (2 SECONDS MAX.) SO AS NOT TO DAMAGE TUBE.





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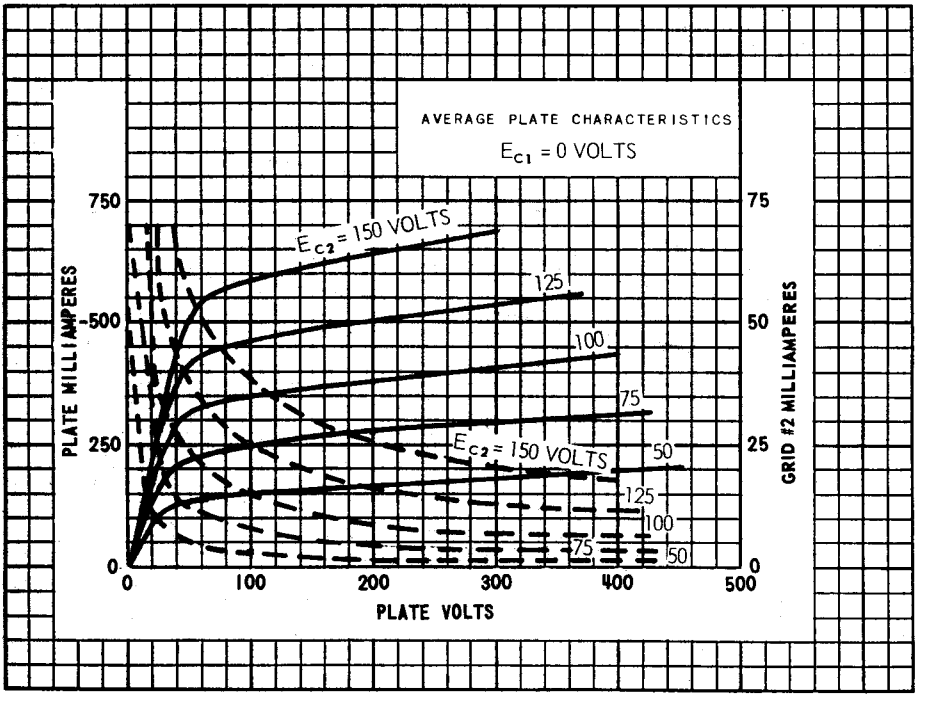
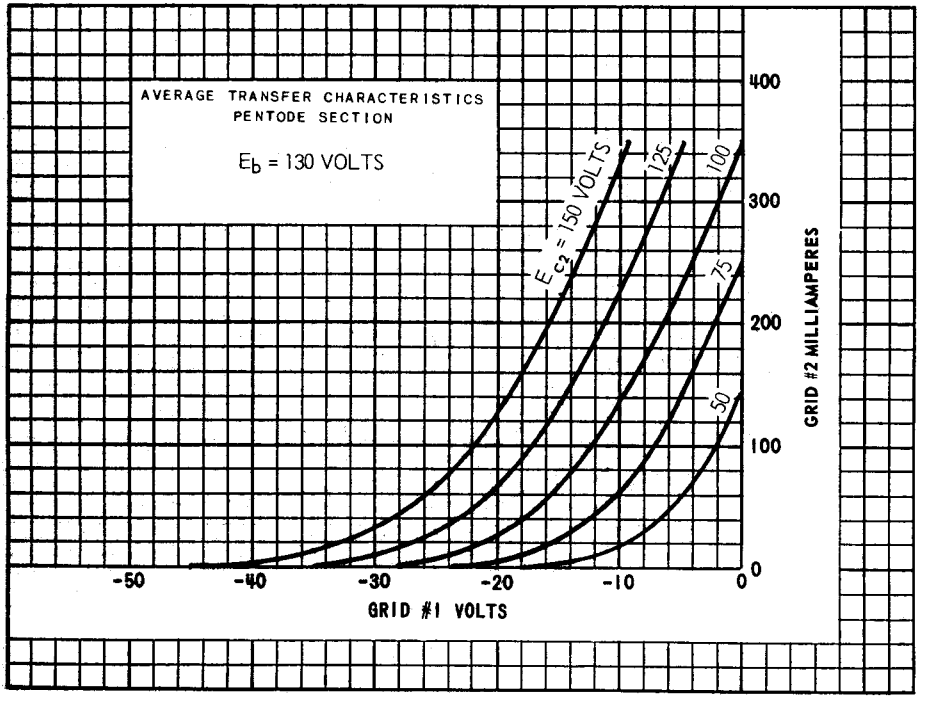
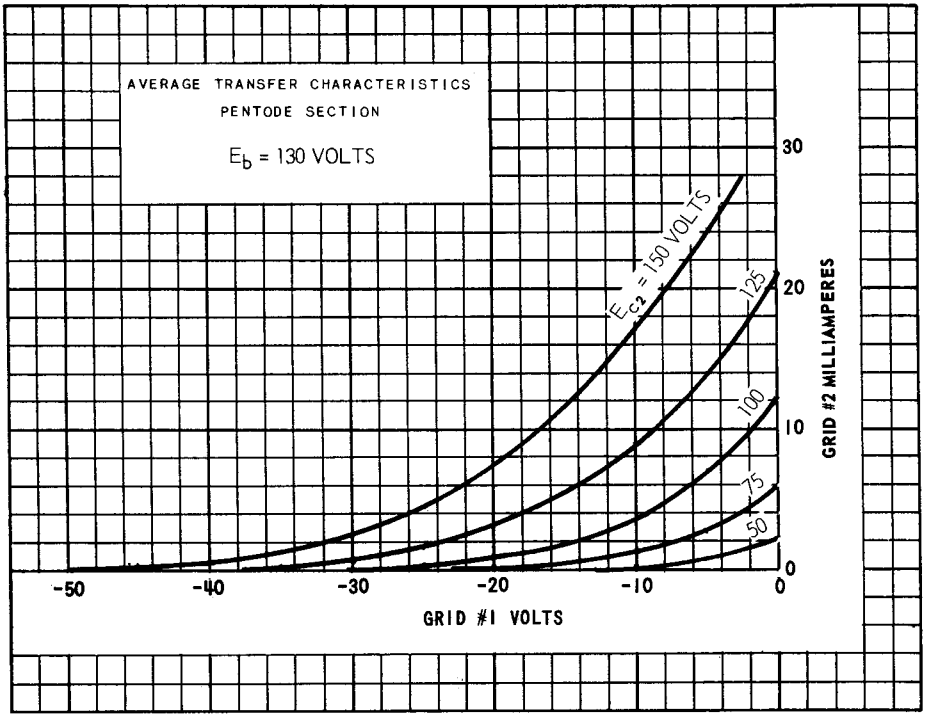
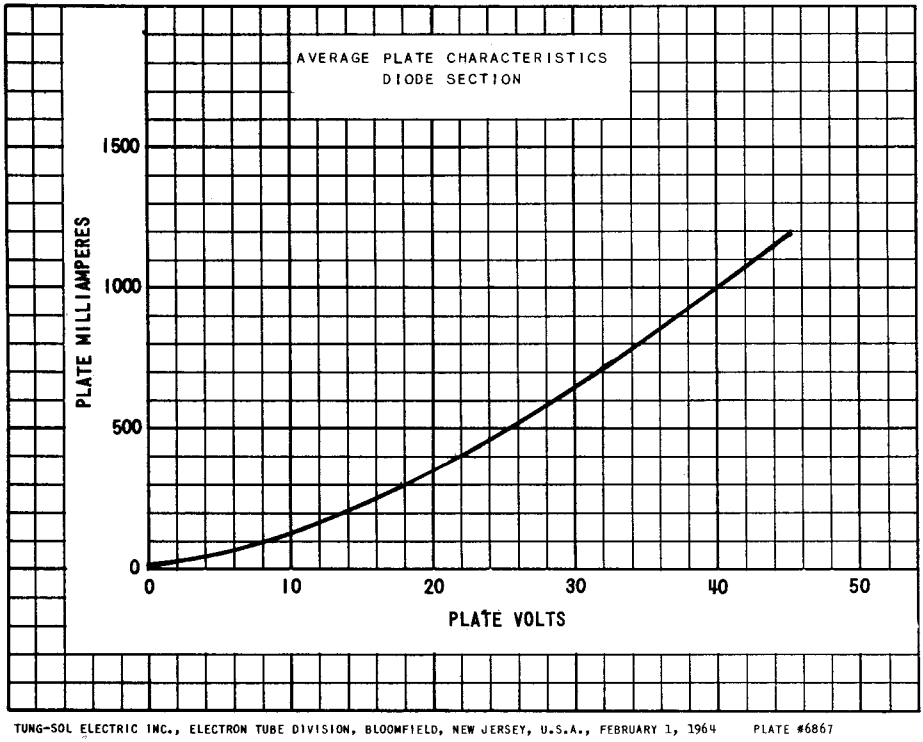

AVERAGE PLATE CHARACTERISTICS
E_{c1} = 0 VOLTS
PLATE MILLIAMPERES
750
500
250
0
E_{c2} = 150 VOLTS
125
100
75
50
E_{c2} = 150 VOLTS
125
100
75
50
0
100
200
300
400
500
PLATE VOLTS
75
50
25
0
GRID #2 MILLIAMPERES


AVERAGE TRANSFER CHARACTERISTICS
PENTODE SECTION
E_b = 130 VOLTS
E_{c2} = 150 VOLTS
125
100
75
50
400
300
200
100
0
GRID #2 MILLIAMPERES
-50
-40
-30
-20
-10
0
GRID #1 VOLTS


AVERAGE TRANSFER CHARACTERISTICS
PENTODE SECTION
E_b = 130 VOLTS
E_{c_2} = 150 VOLTS
125
100
75
50
30
20
10
0
GRID #2 MILLIAMPERES
-50
-40
-30
-20
-10
0
GRID #1 VOLTS


AVERAGE PLATE CHARACTERISTICS
DIODE SECTION
1500
1000
500
0
PLATE MILLIAMPERES
0
10
20
30
40
50
PLATE VOLTS