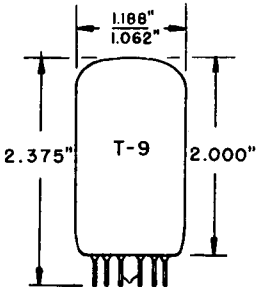
TUNG-SOL

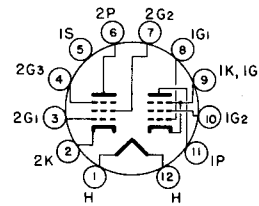
DOUBLE PENTODE

COMPACTRON



DISSIMILAR DOUBLE PENTODE
FOR
USE AS AN FM DETECTOR
AND AUDIO-FREQUENCY OUTPUT
AMPLIFIER IN T.V. RECEIVERS

COATED UNIPOTENTIAL CATHODE
ANY MOUNTING POSITION



GLASS BULB
BUTTON 12 PIN
BASE E12-70
OUTLINE DRAWING
JEDEC 9-58

BOTTOM VIEW
BASING DIAGRAM
JEDEC 12BU

THE 12AL11 IS A SHARP-CUTOFF, DUAL-CONTROL PENTODE (SECTION 2) AND A POWER PENTODE (SECTION 1) IN THE 12 PIN COMPACTRON CONSTRUCTION. THE DUAL-CONTROL PENTODE IS INTENDED FOR USE AS AN FM DETECTOR AND THE POWER PENTODE AS AN AUDIO-FREQUENCY OUTPUT AMPLIFIER IN T.V. RECEIVERS.

DIRECT INTERELECTRODE CAPACITANCES

SECTION 1		
GRID 1 TO PLATE: (1_{G1} TO 1P)	0.26	pf
INPUT: 1G1 TO (H+ 1K + 1G2 + 1G3 + I.S.)	11	pf
OUTPUT: 1P TO (H + 1K + 1G2 + 1G3 + I.S.)	12	pf
SECTION 2		
GRID 1 TO PLATE: (2G1 TO 2P)	0.034	pf
GRID 3 TO PLATE: (2 G3 TO 2P)	3.2	pf
GRID 1 TO ALL EXCEPT PLATE: 2_{G1} TO (H + 2K + 2G2 + 2G3 + I.S.)	6.5	pf
GRID 3 TO ALL: 2_{G3} TO (H + 2K + 2G1 + 2G2 + 2P + I.S.)	7.5	pf
GRID 1 TO GRID 3: (2 G1 TO 2G3)	0.24	pf
PLATE TO PLATE: (1P TO 2P)	0.12	pf

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HEATER CHARACTERISTICS AND RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

AVERAGE CHARACTERISTICS	12.6 VOLTS	450	MA.
HEATER WARM-UP TIME		11	SECONDS
LIMITS OF SUPPLIED CURRENT		450 ± 30	MA.
HEATER-CATHODE VOLTAGE	SECTION 1	SECTION 2	
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 RATINGS

DESIGN MAXIMUM VALUES - SEE EIA STANDARD RS-239

	SECTION 1	SECTION 2	
PLATE VOLTAGE	275	330	VOLTS
GRID 2 VOLTAGE	275	SEE RATING CHART	VOLTS
GRID 2 SUPPLY VOLTAGE		330	VOLTS
GRID 3 (SUPPESSOR) VOLTAGE		28	VOLTS
POSITIVE DC GRID 1 VOLTAGE		0	VOLTS
PLATE DISSIPATION	10	1.7	WATTS
GRID 2 DISSIPATION	2.0	1.1	WATTS
GRID 1 CIRCUIT RESISTANCE			
WITH FIXED BIAS	0.25		MEGOHMS
WITH CATHODE BIAS	0.5		MEGOHMS

CHARACTERISTICS AND TYPICAL OPERATION

SECTION 1

PLATE VOLTAGE		250	VOLTS
GRID 2 VOLTAGE		250	VOLTS
GRID 1 VOLTAGE		-8.0	VOLTS
PEAK AF GRID 1 VOLTAGE		8.0	VOLTS
ZERO-SIGNAL PLATE CURRENT		35	MA.
MAXIMUM-SIGNAL PLATE CURRENT		39	MA.
ZERO-SIGNAL GRID 2 CURRENT		2.5	MA.
MAXIMUM SIGNAL GRID 2 CURRENT		7.0	MA.
MAXIMUM-SIGNAL POWER OUTPUT		4.2	WATTS
TRANSCONDUCTANCE		6,500	MICROMHOS
PLATE RESISTANCE	Approx.	100,000	OHMS
LOAD RESISTANCE		5,000	OHMS
TOTAL HARMONIC DISTORTION	Approx.	10	PERCENT

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TUNG-SOL

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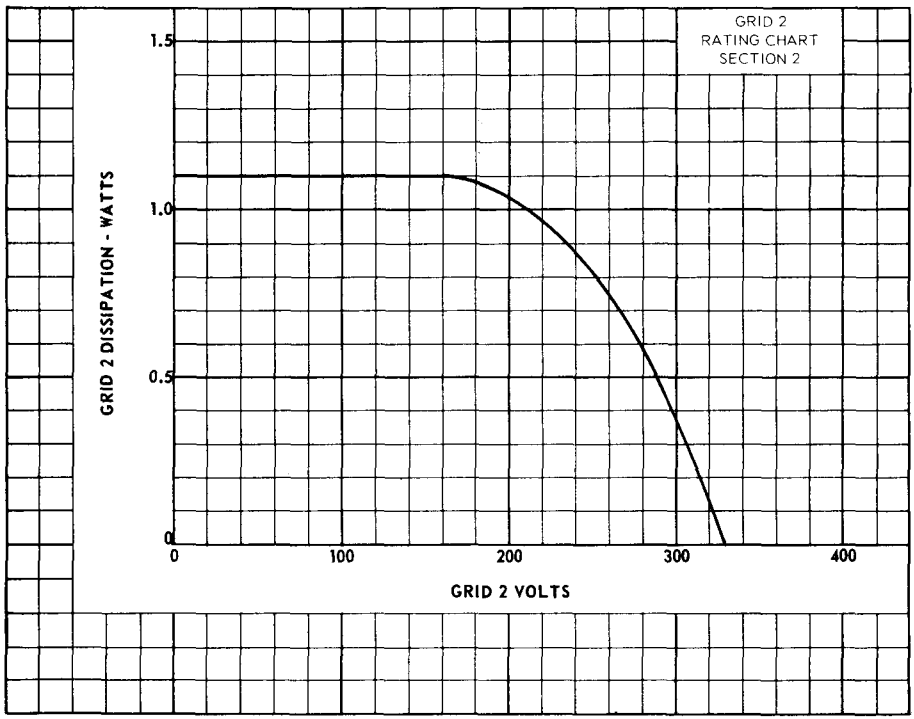
AVERAGE CHARACTERISTICS - SECTION 2

PLATE VOLTAGE		150	VOLTS
GRID 2 VOLTAGE		100	VOLTS
GRID 3 VOLTAGE		0	VOLTS
CATHODE-BIAS RESISTOR		560	OHMS
PLATE CURRENT		1.3	MA.
GRID 2 CURRENT		2.1	MA.
GRID 1 TRANSCONDUCTANCE		1,000	MICROMHOS
GRID 3 TRANSCONDUCTANCE		400	MICROMHOS
PLATE RESISTANCE	Approx.	0.15	MEGOHMS
GRID 1 VOLTAGE FOR $I_b = 30\ \mu A$	Approx.	-4.5	VOLTS
GRID 3 VOLTAGE FOR $I_b = 50\ \mu A$	Approx.	-4.5	VOLTS



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