

MINISTRY OF SUPPLY (S.R.D.E.)

Specification MOS/CV1935/Issue 4	<u>SECURITY</u>	
Dated 4.11.46	<u>Specification</u>	<u>Valve</u>
To be read in conjunction with K1001	Restricted	Unclassified

→ indicates a change

<u>TYPE OF VALVE:-</u> R.F. Pentode				<u>MARKING</u>	
<u>CATHODE:-</u> Indirectly heated				See K1001/4	
<u>ENVELOPE:-</u> Glass-unmetallised				Additional marking :-	
<u>PROTOTYPE:-</u> 6J7G				6J7G	
<u>RATING</u>			Note	<u>BASE</u> <i>See K1001/Al/D2</i>	
				<u>IO</u> <i>M Dimension (ii) applies</i>	
Heater volts		6.3	A	Pin	Electrode
Heater current	(A)	0.3		1	Internal shield
Max. anode volts		300		2	Heater
Max. screen volts		125		3	Anode
Max. anode dissipation	(W)	0.75		4	Screen grid
Max. screen dissipation	(W)	0.1		5	Suppressor grid
Anode current	(mA)	2.0		6	Pin omitted
Screen current	(mA)	0.5		7	Heater
Mutual conductance	(mA/V)	1.25	A	8	Cathode
<u>CAPACITANCES (pF)</u>				T.C	Control grid
Cag		0.0035	B	<u>TOP CAP</u>	
Cae		12.0	B	See K1001/Al/D5.2	
Cge		4.6	B	<u>DIMENSIONS</u>	
<u>NOTES</u>				See K1001/Al/D1	
A. At $V_a = 250V$, $V_{g2} = 100V$, $V_{g1} = -3V$, $V_{g3} = 0$				Dimension	Min. Max.
B. Taken with conventional shield.				A mm	105 114
				B mm	- 40

TESTS

To be performed in addition to those applicable in K1001

	Test conditions				Test	Limits		No. tested
						Min.	Max.	
a	See K1001/AIII				Capacitances (pF)			
	Links to H.P.	Links to L.P.	Links to E					
	3	TC1	1,2,4,5, 6,7,8,9, 10, TC2		(i) Cag	-	0.007	T.A.
	3	1,2,4,5, 7,8	TC1, TC2, 6,9,10		(ii) Cae	9.0	15.0	6 per week
	TC1	1,2,4,5, 7,8	3,6,9,10, TC2		(iii) Cge	3.8	5.4	
b	Vh	Va	Vg2	Vg1				
	6.3	0	0	0	Ih (A)	0.27	0.33	100% or S
c	6.3	250	100	-3	Ia (mA)	1.3	2.9	100%
d	6.3	250	100	-3	Ig2 (mA)	-	1.1	100% or S
e	6.3	250	100	-3	gm (mA/V)	0.9	1.6	100%
f	6.3	250	100	-3	Rev Ig (uA)	-	1.0	100%
g	6.3	250	100	-8	Ia tail (uA)	-	150	100%

R.F. PENTODE.

DATA SHEET.

6J7G

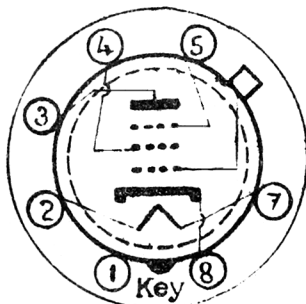
Data given for information of equipment designers and not subject to acceptance testing.

Issue No. b. Dated 18.12.44.

No. of pages :- 3.

Vh = 6.3 V.

Ih = 0.3 A.

See specifications for dimensions,
connections, main ratings, and capacities.Bottom
viewTYPICAL OPERATION AND CHARACTERISTICS.CLASS A AMPLIFIER - PENTODE CONNECTION.

Anode voltage (V)	100	250
Screen voltage (V)	100	100
Grid Bias volts (V)	-3.0	-3.0
Anode resistance (Megohms)	1.0	1.5
Mutual Conductance (mA/V)	1.185	1.225
Grid bias "cut-off" volts (V)	-7.0	-7.0 (approx.)
Anode current average (mA)	2.0	2.0
Screen current (mA)	0.5	0.5

NOTES.

1. Suppressor grid connected to cathode at socket.
2. The D.C. resistance in grid circuit should not exceed 1.0 Megohm.

CLASS A AMPLIFIER - TRIODE CONNECTION.

Anode voltage (V)	180	250
Grid bias voltage (V)	-5.2	-8.0
Amplification factor	20.0	20.0
Anode resistance (ohms)	11,000	10,500
Mutual conductance (mA/V)	1.8	1.9
Anode current (mA)	5.3	6.5

NOTES.

1. Screen and suppressor connected to anode.
2. The D.C. resistance of grid circuit should not exceed 1.0 Megohm.

DETECTOR - ANODE BEND.

Anode Supply Voltage (V)	100	100	250	250
Screen Voltage (V)	12.0	30.0	50.0	100.0
Grid Bias Volts (V)	-1.2	-1.8	-2.0	-4.3
Cathode Resistance (ohms)	18,000	10,000	3,000	10,000
Cathode (zero signal) current (mA)	0.063	0.183	0.65	0.43
Anode Load Resistance (Megohms)	1.0	0.25	0.25	0.5
Coupling Condenser (uFd.)	0.01	0.01	0.3	0.3
Grid Resistance (Following Stage) (Megohms)...	1.0	0.5	0.25	0.25
R.F. Signal Input (R.M.S. Volts)	1.05	1.6	1.18	1.37

(See Note 4).

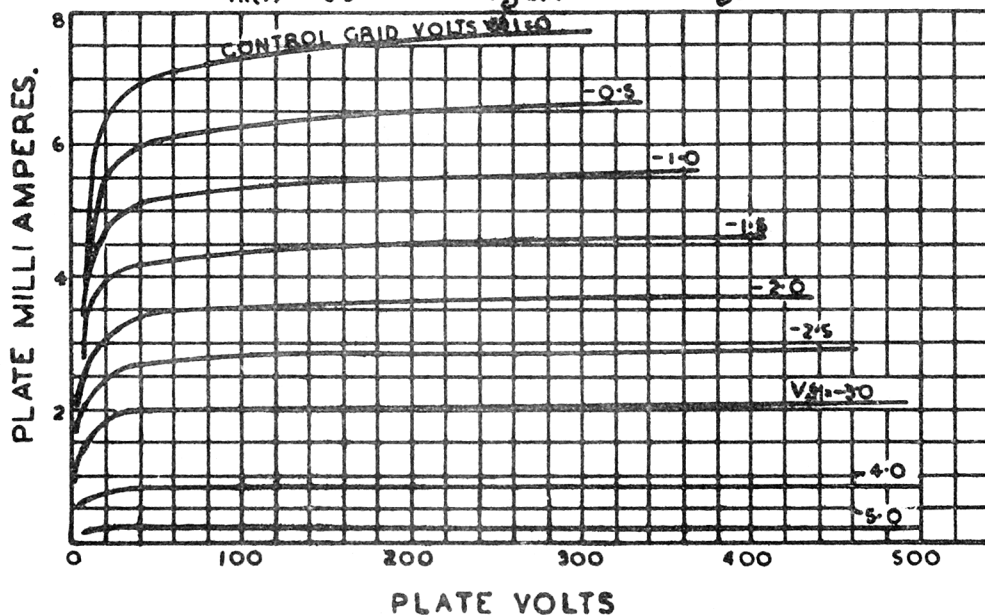
NOTES.

1. Tube D.C. resistance of grid circuit should not exceed 1.0 Megohm.
2. Suppressor connected to cathode.
3. Anode voltage equals supply voltage minus drop across anode load resistance.
4. With these signal valves modulated 20% the voltage output under each set of conditions is 17 V. peak to the grid of following amplifier.

RATINGS - CONNECTED AS TRIODE.

Anode voltage (V)	250 Max.
Grid Voltage (V)	0 Min.
Anode + Screen Dissipation (W)	1.75 (Total)

AVERAGE PLATE CHARACTERISTICS.

 $V_h(V) = 6.3$ $V_{g2}(V) = 100$ $V_{g3}(V) = 0$ AVERAGE PLATE CHARACTERISTICS
TRIODE CONNECTION