

VALVE ELECTRONIC

C.V. 2107

GENERAL POST OFFICE: E-IN-C (S)

Specification: G.P.O./CV 2107/ Issue 3
 Dated: **November 1952**
 To be read in conjunction with K 1001 ignoring
Clause 5.2.

SECURITYSpecification

Unclassified

Valve

Unclassified

—→ indicates a change

<u>TYPE OF VALVE:</u> Sub-miniature pentode			<u>MARKING</u>	
<u>CATHODE:</u> Directly heated			CV 2107	
<u>ENVELOPE:</u> Unmetallised glass			Code date of manufacture	
<u>PROTOTYPE</u> DF 66; XFW 20			Factory identification code	
<u>RATING</u>			NOTE	<u>BASE</u> B5A (See drawing on Page 3)
Filament voltage	(V)	0.625	A A A	<u>CONNECTIONS</u> See drawing on page 3
Nominal filament current	(mA)	15.0		
Max. anode voltage	(V)	45.0		
Max. screen voltage	(V)	45.0		
Mutual conductance	($\mu A/V$)	100.0		
Anode impedance	(megohms)	>2.0		
Optimum anode lead	(megohms)	1.0		
Nominal voltage gain		32.5		
Max. cathode current	(μA)	100		<u>DIMENSIONS</u> See drawing on page 3
<u>CAPACITANCES (pF)</u> (Unscreened)				
C ag		<0.2		
C in		1.7		
C out		2.4		
<u>NOTE</u> A. Measured with $V_a = V_{g2} = 22.5$ and $V_{g1} = -0.625$ A sharp bend must not be made in any valve lead closer than 1.5 mm to the glass seal and soldered joints in the leads must not be made closer than 5.0mm to the seal.				

To be performed in addition to those applicable in K 1001

	TEST CONDITIONS			TEST	LIMITS		No. Tested
	Vf	Vht	f(c/s)		Min.	Max.	
a	0.625	-	-	If (mA)	13.5	16.0	100%
b	0.55	20	50	Gain (Note 2) (db)	27		100%
c	0.55	20	50	Gain (Note 2) (db)	Note 4		Sampling Test
d	0.55	20	1000	Gain (Note 2) (db)	Note 5		Sampling Test
e	0.75	20	50	Gain (Note 2) (db)	27		10 per week
f	0.55	30	50	Gain (Note 2) (db)	Note 6		10 per week
g	0.75	30	-	Microphony (Note 3)		Note 3	100%

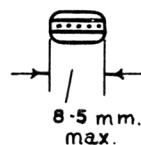
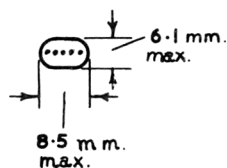
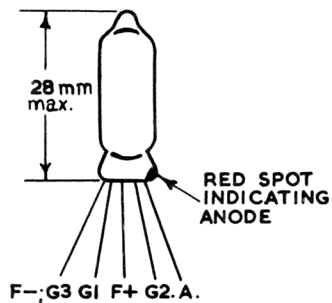
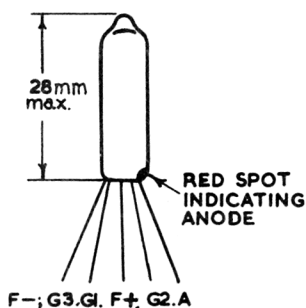
NOTES

1. The equipment used for testing is to be approved by G.P.O.
2. Tested in Test Circuit shown on page 4.
3. The input terminals of the test circuit shown on page 4 shall be short circuited and the output terminals shall be connected to an amplifier having an input impedance greater than 50 Megohms. The amplifier shall have a gain which does not vary more than ± 2 db over a frequency range from 800 to 4,000 c.p.s. but cuts off sharply above 4,000 c.p.s. The response may fall by 3 db at 600 c.p.s. but not more than 6 db per octave below that. The output of the amplifier shall be connected to a meter having a movement with a period of not less than 3 seconds and not greater than 5 seconds and an over-swing of approximately 15% when connected to the amplifier. The amplifier shall have such a gain that an input of 100 mV R.M.S. at approximately 1,000 c.p.s. will give a full scale deflection on the output meter.

The valve shall be tested for microphony by tapping it steadily with a rubber headed mallet at a rate of approximately 3 times per second in such a direction and position on the valve that the greatest possible sustained microphony response is excited as indicated on the meter. The valve shall be rejected if the meter reading can be maintained at a value exceeding that corresponding to an input of 25mV R.M.S. at approximately 1,000 c.p.s. (A suggested mallet for tapping the valve is an ordinary lead pencil fitted at one end with a sleeve of india rubber approximately $\frac{1}{4}$ " thick).

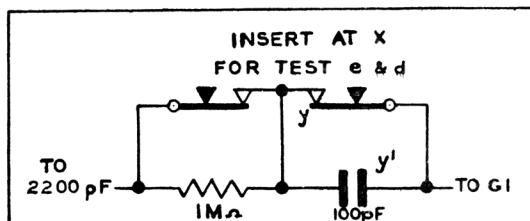
4. With 1.0 M Ω inserted in series with 2,200 pF capacitance in input circuit, the gain to be within 0.7 db of the gain obtained in Test b.
5. With 100 pF inserted in series with 2,200 pF capacitance in input circuit, the gain to be within 1.7 db of the gain obtained without the 100 pF inserted.
6. To be not less than 2 db more than the gain obtained in test b.

PIN CONNEXIONS & OUTLINE DRAWING

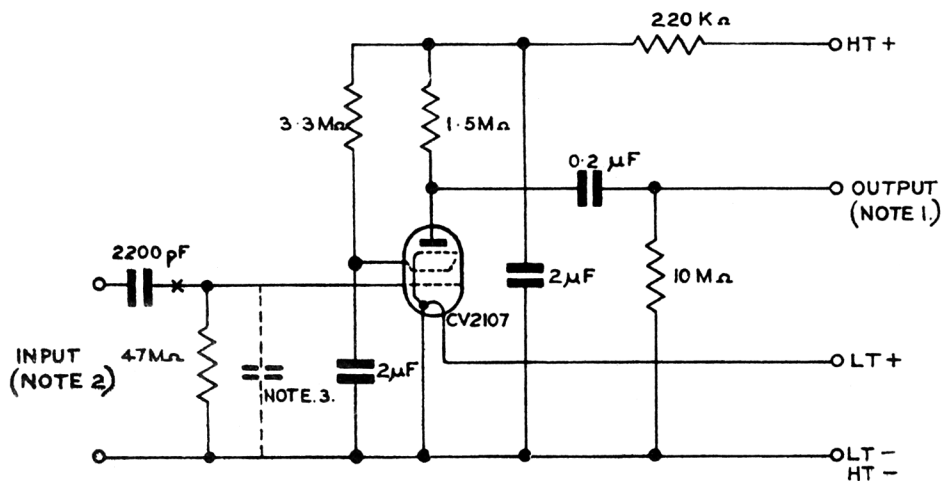


SPACING OF LEADS 1.3 mm.

THE LEADS SHALL BE FLEXIBLE TINNED, COPPER CLAD NICKEL IRON WIRE, OF 0.34-0.48mm DIAMETER AND AT LEAST 32mm IN LENGTH.



TEST CIRCUIT



- NOTES:-
1. OUTPUT IS MEASURED BETWEEN OUTPUT TERMINAL & HT- BY MEANS OF A HIGH IMPEDANCE FULL WAVE VOLTMMETER INDICATING AVERAGE VALUES.
 2. INPUT NOT GREATER THAN 50 mV.
 3. FOR TEST d THE STRAY CAPACITANCE, SHOWN DOTTED, WITH VALVE REMOVED AND CIRCUIT BROKEN AT y & y' (SEE INSET) TO BE BUILT UP TO 12 pF