CV.807

VALVE ELECTRONIC

(3A4)

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

Specification MOS/CV807/Issue 4 Dated:- 3.11.53. To be read in conjunction with K1001	SECURITY Specification: Unclassified Valve: Unclassified

⟶ indicates a change

TYPE OF VALVE:- Power amplifier pentode
CATHODE:- Directly heated
ENVELOPE:- Glass-unmetallised
PROTOTYPE:- 3A4

MARKING
See K1001/4
Additional marking:- 3A4

RATING		Note
Filament voltage (series) (V)	2.8	
Filament current " (mA)	100	
Filament voltage (//) (V)	1.4	
Filament current " (mA)	200	
Max. anode voltage (V)	165	
Max. screen voltage (V)	150	
Mutual conductance (mA/V)	2.0	A
Anode impedance (MΩ)	0.1	A
Max. anode dissipation (W)	2.2	
Max. screen dissipation (W)	1.0	
Max. cathode current (mA)	27	
CAPACITANCES (pF)		
Cag (max)	0.35	
Cae	4.2	
Cge	4.8	

BASE
B7G

Pin	Electrode
1	F-ve Note B
2	Anode
3	Screen grid
4	Control grid
5	F-ve, CT, G3. Note B
6	Anode
7	F+ve

DIMENSIONS
See K1001/AI/D4

Dimensions	Min.	Max.
A mm	-	54
B mm	-	19

NOTES

A. Measured at Va = 150, Vg_2 = 90, Vg_1 = -8.4

B. Pin 1 is F-ve for Vf = 2.8v, Pin 5 is F-ve for Vf = 1.4v, when Pins 1 and 7 are F+ve.

TESTS

To be performed in addition to those applicable in K1001

	Test conditions				Test	Limits		No. tested
						Min.	Max.	
a	See K1001/AIII				Capacitance (pF)			
	Links to H.P.	Links to L.P.	Links to E.					
	2,6	4	1,3,5,7, 8,9,10, TC_1, TC_2		(i) Cag	-	0.35	6
	2,6	1,3,5,7	4,8,9,10, TC_1, TC_2		(ii) Cae	3.0	5.4	per
	4	1,3,5,7	2,6,8,9, 10, TC_1, TC_2		(iii) Cge	3.9	5.7	week
	Vf	Va	Vg_2	Vg_1				100%
b	1.4	-	-	-	If (mA)	180	220	or S
c	1.4	150	90	-8.4	Rev.Ig (uA)	-	1.0	100%
d	1.4	150	90	-8.4	Ia (mA)	9.2	17.4	100%
e	1.4	150	90	-8.4	Ig2 (mA)	1.3	3.3	100% or S
f	1.4	150	90	-8.4	gm (mA/V)	1.67	2.45	100%
g	1.1	150	90	0	$Ia_{(Note\ 1)}$ (mA)	20	-	100%
h	1.4	150	90	-23	Ia cut off (uA)	-	700	100% or S
→ i	See circuit on page 3				$t_{(Note\ 2)}$ (secs)	-	1	S

NOTES

1. This is a snap test.

→ 2. The valve shall be operated in the circuit shown on page 3, and with the filament switched off, the time (t) taken for the anode current to decay to zero shall be noted.

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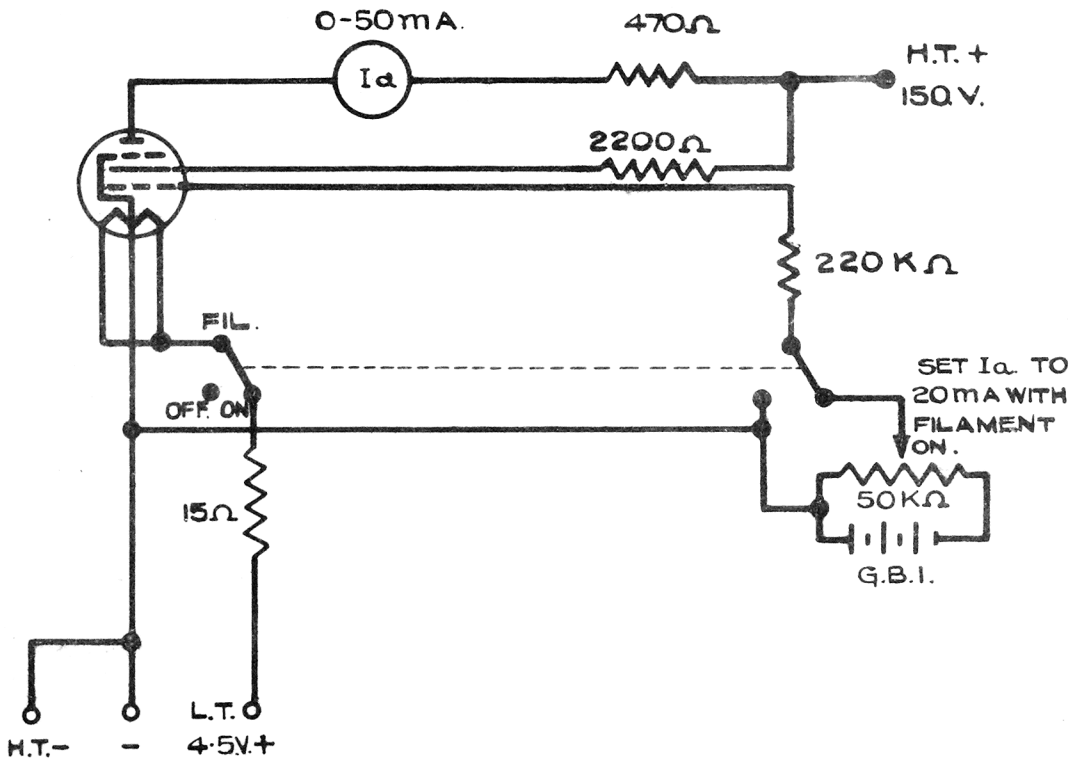


CIRCUIT FOR TEST CLAUSE *i*.

DATA SHEET

Valve Electronic Type CV 807

TYPICAL OPERATING CONDITIONS

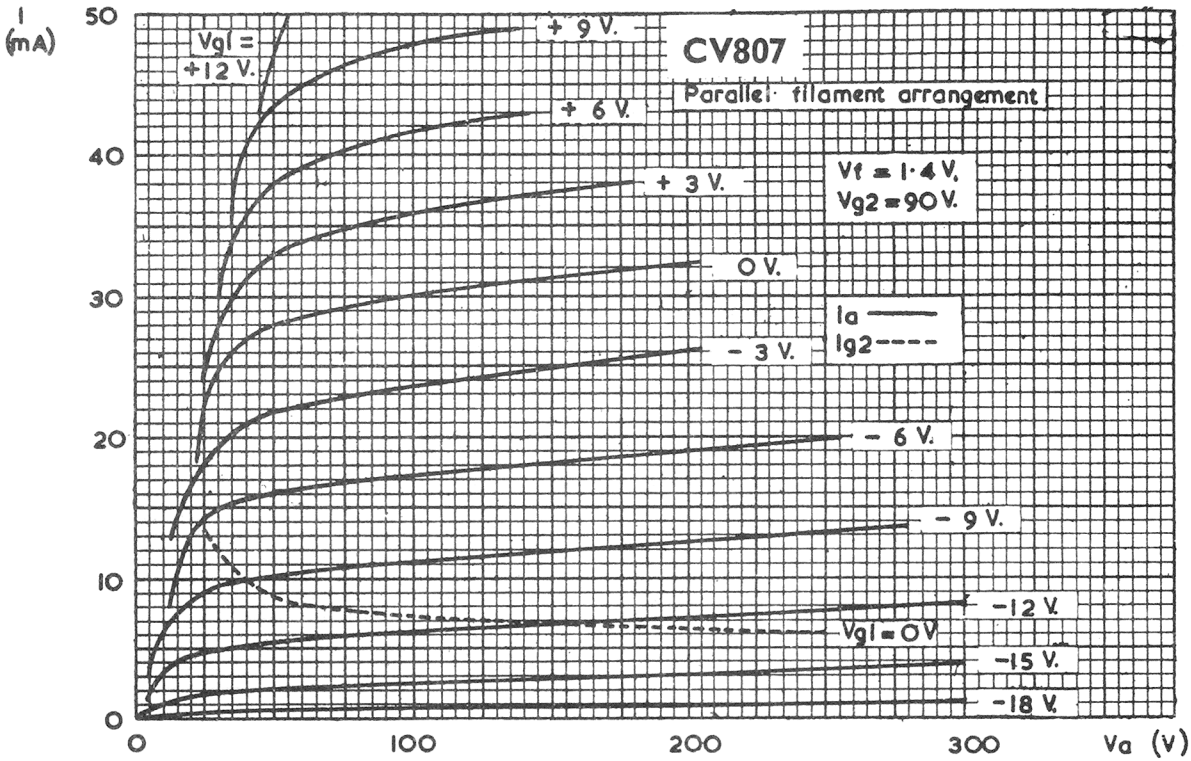
As Audio Frequency Power Amplifier - Class A1

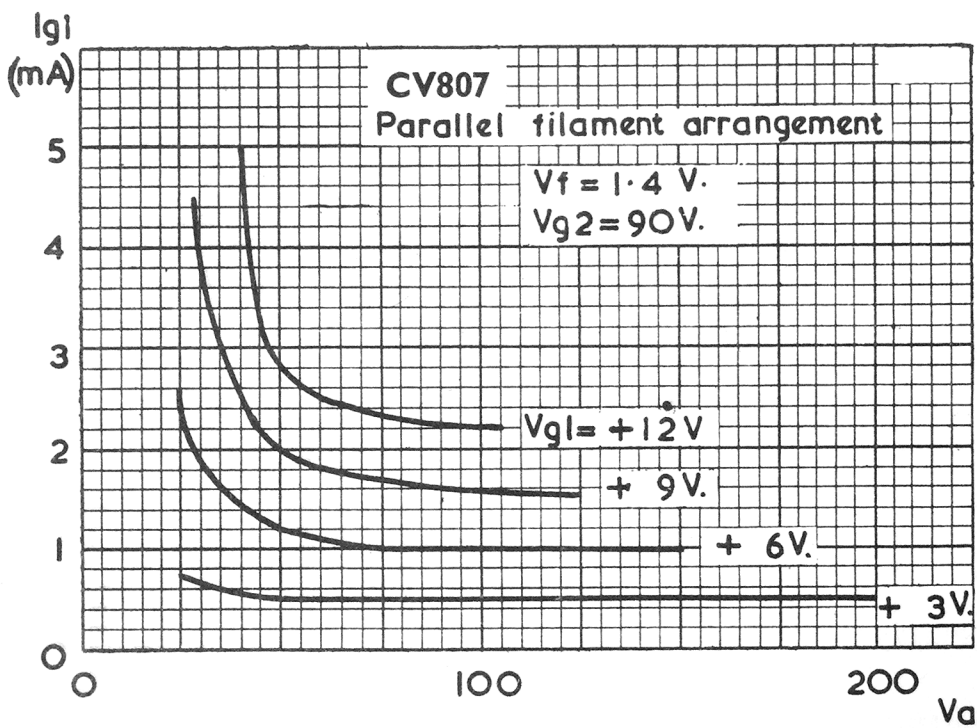
Anode Voltage	135	150	Volts
Screen (G2) Voltage	90	90	Volts
Grid (G1) Voltage	-7.5	-8.4	Volts
Peak Grid Drive Voltage	7.5	8.4	Volts
Anode Current (zero signal)	14.8	13.3	mA
Anode Current (max. signal)	14.9	14.1	mA
Screen (G2) Current (zero signal)	2.6	2.2	mA
Screen (G2) Current (max. signal)	3.5	3.5	mA
Anode Impedance	90,000	100,000	ohms
Mutual Conductance	1.9	1.9	mA/V
Optimum Load Resistance	8,000	8,000	ohms
Max. Power Output	600	700	mW
Total Distortion	5	6	%

As R.F. Power Amplifier at 10 mc/s

D.C. Anode Voltage	150	Volts
D.C. Screen (G2) Voltage	135	Volts
Anode Current	18.3	mA
Screen (G2) Current	6.5	mA
Grid (G1) D.C. Current	0.13	mA
Grid (G1) Resistor	0.2	Meg.
Power Output (approx.)	1.2	watts

Z.4111.R.


I (mA)
50
40
30
20
10
0
0
100
200
300
Va (V)
CV807
Parallel filament arrangement
Vf = 1·4 V.
Vg2 = 90 V.
Ia
Ig2
Vg1 = +12 V.
+ 9 V.
+ 6 V.
+ 3 V.
0 V.
- 3 V.
- 6 V.
- 9 V.
-12 V.
Vg1 = 0 V.
-15 V.
-18 V.


Ig1 (mA)
5
4
3
2
1
0
0
100
200
Va (V).
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Parallel filament arrangement
Vf = 1·4 V.
Vg2 = 90 V.
Vg1 = +12 V
+ 9 V.
+ 6 V.
+ 3 V.