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

VALVE ELECTRONIC **CV 5407**

Specification: G.P.O./CV 5407/Issue 1

Dated: 20.4.65

To be read in conjunction with K 1001, BS 448 and BS 1409

SECURITY

Specification	Valve
Unclassified	Unclassified

→ indicates a change

TYPE OF VALVE: Low Noise Travelling Wave Amplifier

CATHODE: Indirectly Heated

ENVELOPE: Glass

PROTOTYPE: N 1002

MARKING

See K 1001/4

Ratings and Characteristics
All limiting values are absolute

			Notes
Max. Heater Voltage	(V)	6·6	
Max. Collector Voltage	(V)	800	
Max. Collector Current	(μA)	220	
Max. Helix Voltage	(V)	700	
Max. Helix Current	(μA)	20	
Max. Grid 3 Voltage	(V)	250	
Max. Grid 3 Dissipation	(mW)	100	
Max. Grid 2 Voltage	(V)	100	
Max. Grid 2 Dissipation	(mW)	100	
Max. Grid 1 Voltage positive	(V)	50	
Max. Grid 1 Voltage negative	(V)	50	
Max. Grid 1 Dissipation	(mW)	100	
Heater Current	(A)	0·36	A
Heater Voltage	(V)	6·3	
Min. Cathode Heating Time	(Mins)	2	
Frequency Range	(Gc/s)	1·7 to 2·3	
Gain (Low Level)	(db)	23	
Noise Factor	(db)	9	
Output Power (Saturated)	(mW)	2·5	
Magnetic Field (Helix Region)	(Gauss)	150	
Magnetic Field (Gun Region)	(Gauss)	450	

Note. A Heater Starting Current, peak instantaneous value must not exceed 1·5 amps.

Base

I.O.

Connections

Pin	Electrode
1	K
2	H
3	H
4	g^2
5	helix
6	omitted
7	g^1
8	g^3
Cap	Collector

Dimensions

See drawing page 4

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TESTS

To be performed in addition to those applicable in K 1001

Test conditions unless otherwise stated								Note
V_h	V_{g2}	V_{g3}	$V_{col.}$	$I_{col.}$	$I_{gun\ sol.}$	$I_{main\ sol.}$	Frequencies	
6·3V ± 5%	30V	50V	700V	200 µA	0·7A	0·52A	1·8, 2·0 & 2.25 Gc/s	1

Test Clause	Test condition			Test & Units		Limits		Notes
	Freq. Gc/s	V_{Hel}	V_{g1}			Min.	Max.	
a	-	-	-	Heater Current	(A)	0·33	0·39	2
b		565	Adj.	Focussing and Centering Grid 1 Voltage Helix Current	 (V) (µA)	 -10 0	 +10 5	3
c	1·8	570	Adj.	Noise Factor and Gain (1) Grid 1 Voltage Helix Current Noise Factor (1) Noise Factor (2) Gain	 (V) (µA) (db) (db) (db)	 -10 20	 +10 2 11 10 	4,5,6 7
d	2·0	565	Adj.	Noise Factor and Gain (2) Grid 1 Voltage Helix Current Noise Factor Gain	 (V) (µA) (db) (db)	 -10 20	 +10 2 10 	4,5,6
e	2·25	560	Adj.	Noise Factor and Gain (3) Grid 1 Voltage Helix Current Noise Factor Gain	 (V) (µA) (db) (db)	 -10 20	 +10 2 10 	4,5,6

Notes.

1. These tests to be performed in a circuit approved by the Type Approval Authorities. A pre-heating time of three minutes is required before any test is made.

2. This test shall be performed with only the heater voltage applied to the tube.

3. Grid 1 voltage to be initially set at about -10 volts and then adjusted until the collector current attains its operating value. The main solenoid current is adjusted to give minimum helix current. The tube is then rotated through 360^{0} and the helix current should not exceed the limiting value at any orientation.

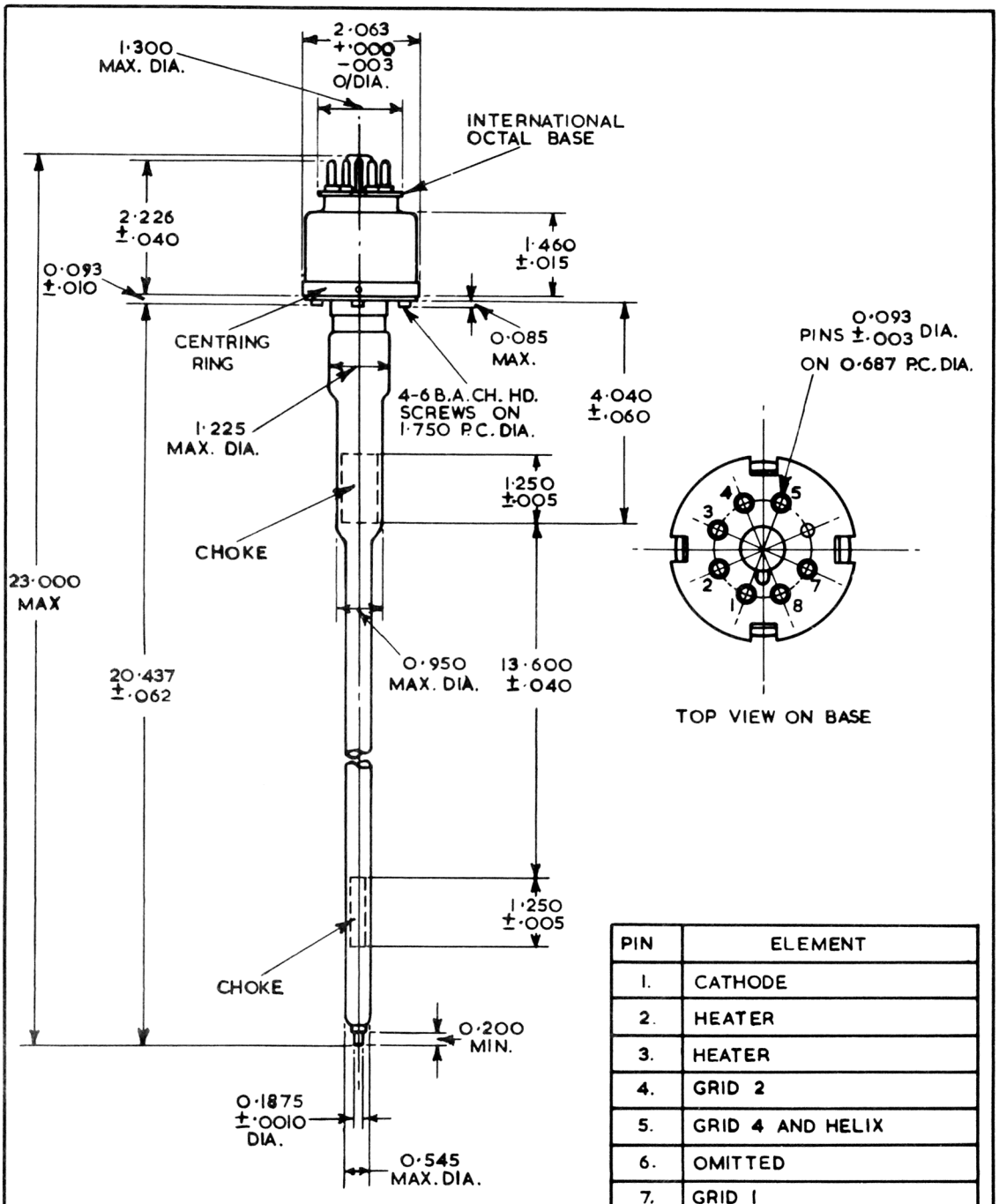
4. The tube to be initially set up as in Note 3 and then rotated to the position of minimum helix current.

5. The matching adjustments on the mount should be set up for maximum power output.

6. The gain of the tube is measured with a power output of 100μW.

7. "Noise Factor (2)" is the noise factor obtained at 1.8 Gc/s when Vg^{3} is set to an optimum value in the range 25 to 75 volts.

CV 5407



PIN	ELEMENT
1.	CATHODE
2.	HEATER
3.	HEATER
4.	GRID 2
5.	GRID 4 AND HELIX
6.	OMITTED
7.	GRID 1
8.	GRID 3
TOP	COLLECTOR

ALL DIMENSIONS IN INCHES