

ELECTRONIC VALVE SPECIFICATION, AD/CV323, ISSUE 3.

AMENDMENT "A".

Page 3, Drawing.

Overall Length.

For 8.5" MIN. read 8.5" MAX.

30th October 1954.

T.V.C. Office.
for A.S.R.E.

Z.7566.R.

ADMIRALTY SIGNAL & RADAR ESTABLISHMENT

| | | |
|--|--------------------------------------|------------------------------|
| Specification AD/CV323/Issue No. 3. Dated : 1. 7. 54. To be read in conjunction with K1001, ignoring clauses: 5.2, 5.3, 5.8, 7.2. | <u>SECURITY</u> | |
| | <u>Specification</u> Unclassified | <u>Valve</u> Unclassified |

→ Indicates a change

| | | | | |
|---|--------------|------------------------|---|--|
| <u>TYPE OF VALVE:-</u> X-band reflex klystron with long tuning range. | | <u>MARKING</u> | | |
| <u>CATHODE:-</u> Indirectly Heated. | | CV323 Serial No. | | |
| <u>ENVELOPE:-</u> Copper and Glass. | | Marking on base shell. | | |
| <u>PROTOTYPE:-</u> KRN2, K303. | | | | |
| <u>RATING</u> | | Note | <u>BASE</u> I.O. | |
| | | <u>CONNECTIONS</u> | | |
| | | | Pin Electrode | |
| → Heater Voltage (V) | 4.0 | B | 1 Grid | |
| → Heater Current (A) | 1.3 | | 2 Heater | |
| → Tuning Range for Output Power of at least 30 mW. (cms) | 2.95 to 3.48 | B | 3 No connection. | |
| → Tuning Range for Output Power of at least 60 mW. (cms) | 3.1 to 3.2 | | 4 No connection. | |
| Max. Resonator Dissipation (W) | 10 | A,E | 5 No connection. | |
| Max. Resonator Voltage (kV) | 1.6 | | 6 No connection. | |
| Max. Resonator Current (mA) | 6.25 | | 7 Heater | |
| Reflector Voltage Range (V) | -200 to -550 | | 8 Cathode | |
| Max. Negative Vg for Oscillation Cut-off. (V) | 150 | D | <u>TOP CAP</u> See K1001/AI/D5/5.2. Reflector | |
| Max. Grid and Reflector Series Resistance. (Ω) | 25,000 | | <u>DIMENSIONS</u> See Drawing, page 3. | |

NOTES

- A. With convection cooling in free air.
- B. The valve must operate satisfactorily with any V_h within the range 4.0 ± 0.2 V.
- C. The external circuit is to be plated with silver. All other metal parts, excluding the valve pins and top cap, are to be given an approved corrosion resisting coating.
- D. This figure is not necessarily the same as that for starting oscillation, as there is an hysteresis effect which varies from valve to valve; it should therefore be used with caution.
- E. Absolute maximum value.

TESTS

To be performed in addition to those applicable in K1001.

| | Test Conditions | | | | | Test | Limits | | No. Tested | Note |
|--|------------------------|---------|---------|--------------------------|--------------------------|---|--------|------|------------|--------|
| | Vh (V) | Va (kV) | Ia (mA) | Vg (V) | Vr (V) | | Min. | Max. | | |
| a | 4.0 | 0 | 0 | 0 | 0 | Ih (A) | 1.0 | 1.6 | 100% | |
| b | 4.0 | 1.6 | 6.25 | Adjust at each frequency | Adjust at each frequency | i. Output power in the tuning range 2.95 to 3.48 cms (mW) | 30 | - | 100% | 1,2. ← |
| | | | | | | ii. Output power in the tuning range 3.10 to 3.20 cms (mW) | 60 | - | | |
| The oscillation frequency is altered by means of the tuning control on the valve and Vr is adjusted to give max. output power at each frequency. | | | | | | iii. Vr (V) | -200 | -550 | | |
| | | | | | | iv. Vg (V) | -5 | -100 | | |
| c | 4.0 | 1.6 | 6.25 | Adjust | Adjust | Vg to cut off oscillations at any frequency. (V) | - | -150 | 100% | ← |
| d | C-G Voltage 250 V min. | | | | | C-G Insulation. (MΩ) | 0.1 | - | 100% | |
| e | | | | | | <u>Capacitances</u> Grid to heater and cathode + resonator. (pF) | - | 15 | T.A. | |

NOTES

- The series resistance in the grid and reflector leads shall be 50 kΩ in all these tests.
- A graph of output power against wavelength is to be supplied with each valve. The output power is to vary continuously with the wavelength over the tuning range 2.95 to 3.48 cms. The output must not jump when the tuning control is moved.

