VALVE ELECTRONIC **CV 6016**

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

Specification:G.P.O./CV 6016

Issue 1. Dated July, 1959

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

| SECURITY | |
|---|---|
| Specification | Valve |
| Unclassified | Unclassified |

→ Indicates a change

TYPE OF VALVE - Cold cathode triode with flexible leads
CATHODE - Cold
ENVELOPE - Glass - Unmetallised
PROTOTYPE - CCT6

**MARKING**

See K 1001/4

**RATINGS and CHARACTERISTICS**
(Not for inspection purposes)
All limiting values are absolute

| | | | Note |
|---|---|---|---|
| Anode supply voltage range | (V) | 190 to 250 | |
| Anode operating current range | (mA) | 1 to 5 | |
| Max. peak anode current | (mA) | 40 | |
| Max. de-ionisation time. tdi. | (µSec) | ~~14000~~ 3000 | |
| Average ionisation time. ti | (µSec) | 220 | A.E. |
| Control gap breakdown voltage | (V) | 70 to 85 | B |
| Min. main gap breakdown voltage | (V) | 275 | C |
| Main gap maintaining voltage | (V) | 65 to 80 | D |

**BASE**

BS 448/B7G/F

**CONNECTIONS**

| Lead | Electrode |
|---|---|
| 1 | Anode |
| 2 | NC |
| 3 | Trigger |
| 4 | NC |
| 5 | NC |
| 6 | Cathode |
| 7 | NC |

**DIMENSIONS**

BS 448/B7G/F/2.1

| Dimensions (m.m) | Min. | Max. |
|---|---|---|
| A. Seated Height | - | 38 |
| C. Diameter | 16.0 | 19.0 |
| E. Lead Length | 38.1 | - |

**NOTES**

A. Measured at: Va = 200V, Vt = 100V, trigger load = 470KΩ
B. Anode load open-circuited; trigger load 47KΩ
C. Suddenly applied 250 volts, with trigger connected to cathode through 470KΩ or trigger biased +60V w.r.t. cathode through 470KΩ
D. Ia = 5mA, and trigger open-circuited
E. Typical conditions in "Voltage level transfer" circuits rather than those obtained for "pulse bias" operation.
F. It is recommended that the valve be retained by a metal spring clip which must be electrically connected to the cathode lead.
G. The valve must not be used under conditions of total darkness or direct bright sunlight.

**MOUNTING POSITION**

Any.

See Notes F and G.

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## TESTS

To be performed in addition to those applicable in K 1001

| K 1001 | Test | Test Conditions | AQL % | Insp. Level | Symbol | Limits Min. | Limits Max. | Units |
|---|---|---|---|---|---|---|---|---|
| | GROUP A<br>Notes 1, 2 & 3 | | | | | | | |
| | Main gap breakdown voltage | Note 4 | | 100% | Vb | 275 | - | V |
| | Main gap maintaining voltage | Note 5 | | 100% | Vm | 65 | 80 | V |
| | Ionisation time | Note 9 | | 100% | ti | - | 220 | uSec |
| | GROUP B<br>Notes 1, 2 & 3 | | | | | | | |
| | Main gap breakdown voltage | Note 6 | 6.5 | Ia | Vb | 275 | - | V |
| | Control gap breakdown voltage | Note 7 | 6.5 | | Vc | 70 | 85 | V |
| | Main gap maintaining voltage | Note 8 | 6.5 | | Vm | 65 | 80 | V |
| | GROUP C<br>Notes 1, 2 & 3 | | | | | | | |
| | De-ionisation time | | | TA | tdi | - | 2000 ~~1000~~ | uSec |
| | GROUP D<br>Omitted | | | | | | | |
| 5.12 | GROUP E<br>Lead Fragility | No Voltages | 6.5 | Ic | | | | |
| | GROUP F<br>Omitted | | | | | | | |
| | GROUP G<br>Omitted | | | | | | | |

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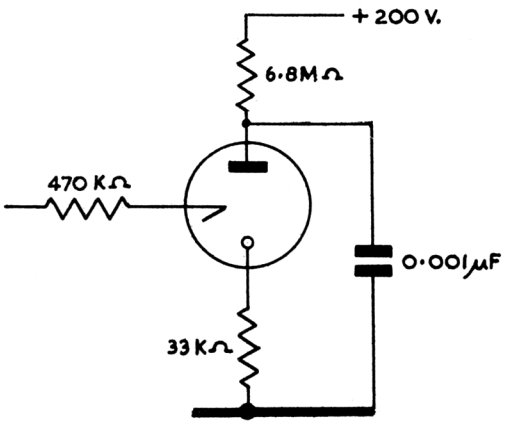


NOTES

1. The tests should not be performed until 28 days after the completion of manufacture of the valve.

2. The tests should be performed under the illumination of a tungsten light of 10 ± 1 ft. candles.

3. During testing the envelope is held in a "U" shaped metal clip, 15-18mm wide, around the centre of the bulb and touching it over the semi-circular portion. The clip is electrically connected to the cathode.

4. The trigger is connected to cathode via a resistance of 470 KΩ and the anode is connected to +275V via a resistance of 100 KΩ . The valve shall not conduct.

5. The anode is connected to H.T. via 150 KΩ . The valve is fired and the trigger electrode open circuited. H.T. is adjusted for Ia = 1mA and the main gap maintaining voltage must be within the limits specified.

6. The trigger is connected to +60V via a resistance of 470 KΩ and the anode is connected to +275V via a resistance of 100 KΩ . The valve shall not conduct.

7. The anode is open circuited, and the trigger to H.T. via a resistance of 47 KΩ .

8. The anode is connected to H.T. via a resistance of 22 KΩ . The valve is fired and the trigger electrode open circuited. H.T. is adjusted for Ia = 5mA and the main gap maintaining voltage must be within the limits specified.

9. A pulse of sensibly square shape, of + 100V amplitude and of long duration compared with the ionisation time shall be applied to the trigger electrode in the circuit shown. The valve shall strike within the specified time after the trigger pulse has attained its maximum value.