DEPARTMENT OF ATOMIC ENERGY - A.E.R.E.

CV2255

VALVE ELECTRONIC

Specification D. At. En./CV.2255.
Issue 2 Dated 1st January 1954.
To be read in conjunction with K1001 ignoring clause 5.2.

SECURITY	
Specification	Valve
UNCLASSIFIED	UNCLASSIFIED

→ indicates a change

TYPE OF VALVE - Gas Filled Trigger Tube
CATHODE - Cold
ENVELOPE - Glass, Unmetallised
PROTOTYPE - VX8086

MARKING
See K1001/4

BASE
B9A

RATING

			Note
Min. Anode to Cathode Breakdown Voltage	(V)	170	A
Max. Mean Cathode Current	(mA)	2.5	B.C.
Max. Peak Cathode Current	(mA)	10.0	C
Max. Mean Aux. Cathode Current	(mA)	1.0	B.D.
Max. Peak Aux. Cathode Current	(mA)	4.0	C
Nominal Maintaining Voltage at 2-mA	(V)	105	A

CONNECTIONS

Pin	Electrode
1	Anode
2	Aux. Cathode ←
3	Trigger
4	Aux. Cathode
5	Cathode
6	Cathode
7	Cathode
8	Aux. Cathode
9	Trigger

NOTES

A. Limiting conditions as in clause 'c' of the test specification.

→ B. Averaged over any interval of 16 secs.

→ C. The cathode current can be divided in any way between trigger and anode. It is permissible for the peak current to be 20-mA provided that current averaged over any period of 1-mSec. does not exceed 10-mA.

D. The aux. cathode current can be divided in any way between trigger and anode.

DIMENSIONS
See K1001/A1/D4

Dimensions	Min	Max.
A mm	40	44.5
B mm		22.4

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TESTS

To be performed in addition to those applicable in K.1001. Valves to be held for at least one month and the valves tested in the following order.

Test	Test Conditions				Test	Limits		No. Tested	Note
	Va D.C.	Vt D.C.	Vin Pulse	Ct pF		Min.	Max.		
a	150	150	30	120	Delay (Secs)		70	100%	3,4,5
b	170	170	0	270	Stability			100%	4,6
c	170	170	30	120	Extinction			100%	3,4,7
d	158	158	30	120	Anode Swing μA	28	33	100%	3,4,8
e					Output (V)	153	163	100%	9
f					Regulation (V)		1.5	100%	9,10

NOTES

1. The valve base is to be silicone coated in an approved manner in order to maintain high insulation under conditions of high humidity.
2. The valve should be dried carefully before testing. All tests will be conducted with the valve covered by an earthed close fitting light tight electrostatically shielded container.
3. The pulse repetition frequency for tests (a), (c) and (d) shall be 30 c.p.s.
4. The valve shall be tested in circuit No.1.
5. The input pulse amplitude Vin shall be set to 30-V. The anode supply voltage Va shall be applied after the valve is covered by the light tight container. Va should be made to rise from zero to 150V in about 1 sec. The time delay from the application of the anode voltage to the appearance of pulses in the anode circuit shall be measured. The pulses at the anode as observed on an oscilloscope shall be regular for a period of 10 secs.
6. The valve must not fire over a period of 10 secs. Erratic behaviour can be recognised by fluctuating current in anode microammeter.
7. The waveform on the oscilloscope shall be within the limits shown for fig. (a). Fig. (b) is a cause for rejection.
8. The average anode current must be between the given limits.
9. The valve shall be tested in circuit No.2. The output voltmeter may act as the load and shall be such that the output current shall be between 10 μA and 20 μA during the test.
10. The 1.8 MΩ Resistor in circuit 1 shall be changed to a 1 MΩ Resistor and the change in output voltage noted.

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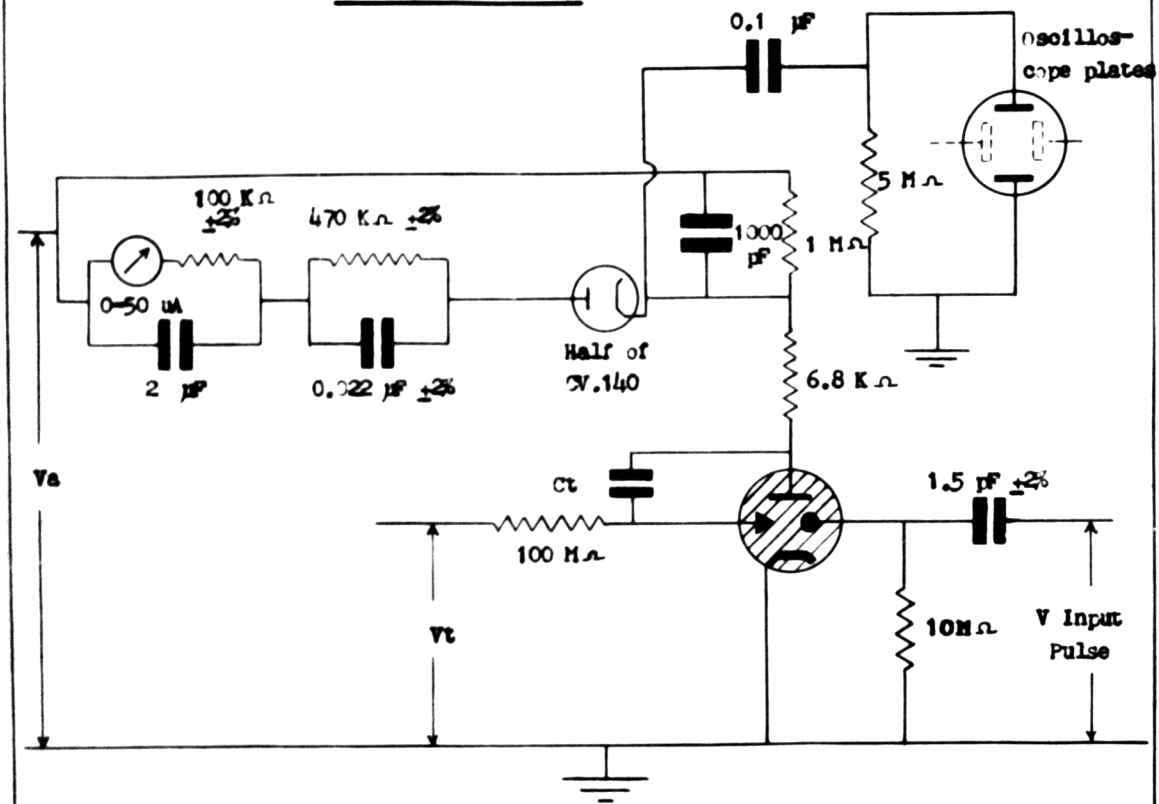
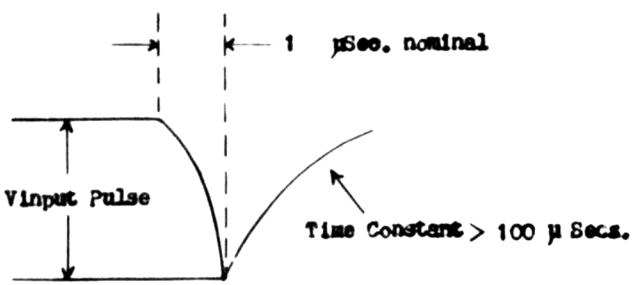
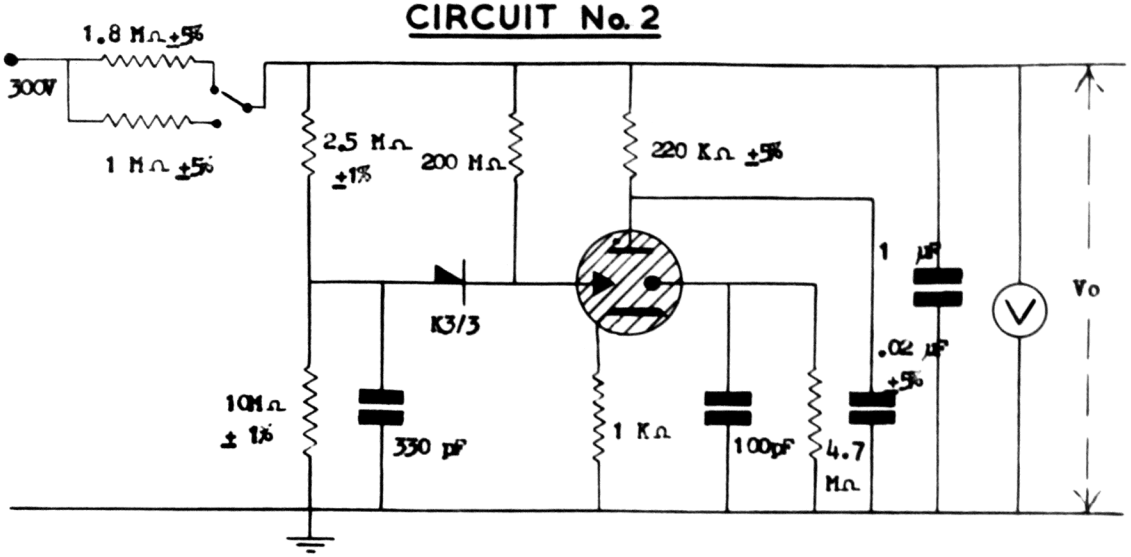
CIRCUIT No. 1



All Component Tolerances ±10% unless otherwise stated.



CIRCUIT No. 2



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WAVEFORMS