MINISTRY OF SUPPLY - DLRD(A)/RRE

VALVE ELECTRONIC **CV2434**

Specification MOS(A)/CV **2434**

Issue 1 Dated 2.9.57

To be read in conjunction with K1001 (except clause 52) BS448 and BS1409

SECURITY	
Specification	Valve
Unclassified	Unclassified

→ Indicates a change

Type of valve - High stability long life gas-filled trigger tube

Cathode - Cold

Envelope - Glass

Prototype - Z803U

MARKING

See K1001/4

RATINGS (Notes G and H)

		Note
Nominal Trigger Ignition Voltage (V)	132	
Max. Working Anode Voltage (V)	290	A
Min. Working Anode Voltage (V)	170	A
Nominal Anode/Cathode Maintaining Voltage (V)	105	
Typical Trigger/Cathode Maintaining Voltage (V)	95	
Max. Priming Current (μA)	25	A
Min. Priming Current (μA)	2	A
Max. Peak Cathode Current (mA)	100	A
Max. Average Cathode current (mA)	25	A.B.
Max. Positive Peak Trigger Current (mA)	8	A.C.D.
Max. Priming Anode Ignition Voltage (V)	150	A.E.
Max. Transfer Current (Va = 240v) (μA)	25	A.F.
Min. Trigger Capacitance to ensure ignition with		
(a) +Va 170V (pf)	1500	
(b) +Va 200V (pf)	1000	
(c) +Va 240V (pf)	500	
Max. increase in Trigger Ignition Voltage when anode voltage is changed from 290V to 170V. (%)	1	
Typical stability of trigger Ignition Voltage 2000 hours life. (%)	±1	F

BASE

BS448/B9A

CONNECTIONS (Note G)

Pin	Electrode
1	Anode
2	Internal Connection
3	Internal Connection
4	Cathode
5	Cathode
6	Priming Anode
7	Cathode
8	Trigger
9	Trigger

DIMENSIONS

See BS.448/B9A/2.1
Size Ref. No. 1

Dimension	Min.	Max.
A mm		38.0
C mm	19.0	22.2
D mm		45.0

MOUNTING POSITION

Any

NOTES

See Page 2

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NOTES (ratings)

A. Absolute value.

B. Maximum averaging time 15 seconds.

C. Negative trigger current should not be drawn by the valve. Such a current occurs if the trigger potential is reduced below 90V during anode conduction.

D. To limit the positive peak trigger current a resistor of 2.2KΩ is required for trigger capacities between 4700 and 15000 pF, and a resistor of 5.6 KΩ is required for trigger capacities of over 15000 pF.

E. This applies in darkness or in daylight.

F. To ensure high stability of characteristics in light and darkness a priming discharge of some 10 μA flowing between priming anode and cathode is essential. If the valve is used without priming discharge, delays in trigger ignition up to 10 seconds may occur and thus seem to impair the stability of the characteristics. However under these conditions the pre-strike current of the valve is considerably reduced.

G. The cathode connection should be made to pins 4, 5 and 7 connected together.

H. It is recommended that the priming discharge resistor is 10 Meg ohm ±20%. This resistor must be soldered directly to pin 6. Stray capacitance between priming anode and cathode must be kept to a minimum.

TESTS

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To be performed in addition to those applicable in K1001

Tests shall be performed in the specified order, unless otherwise agreed with the Inspecting Authority

TEST CONDITIONS - UNLESS OTHERWISE SPECIFIED

Ip = 25μA Ra = 1 M ohm Ct = 2000 pF

K1001		TEST	TEST CONDITIONS	AQL %	INSP. LEVEL	SYMBOL	LIMITS MIN.	LIMITS MAX.	UNITS
	a.	Primer Ignition Voltage	Va = Vt = 0 Rt = 100 K ohm Note 1		100%	Vp	-	150	V
	b.	Trigger Ignition Voltage (1)	Va = 280 v, Rt = 100 K ohm Note 2		100%	Vt(1)	128	137	V
	c.	Trigger Ignition Voltage (2)	Va = 160V, Rt = 100 K ohm Ct = 3,900 pF, R lim. = 2.2 K ohm Note 2		100%	Vt(2)	-	-	
		Change in Trigger Ignition Voltage (1) Vt(1) - Vt(2)			100%	ΔVt(T)	-	4	V
	d.	Trigger Ignition Voltage (3)	Va = 200V, R at = 100 M ohm Ct = 1000 pF, Note 2.				-	-	
		Change in Trigger Ignition Voltage (2) Vt(1) - Vt(3)				ΔVt(2)	-	4	V
	e.	Anode Ignition Voltage	Vt = 120V, Ra = 100 K ohm Rt = 100 M ohm, Note 3		100%	Va	290	-	V
	f.	Anode Maintaining Voltage	Adjust Va, Vt = 0 Ra = 10 K ohm, Rt = 100 M ohm Note 4.	2.5	I	Va	100	110	V
	g.	Trigger Preconduction Current (Ip = 0)	Va = 280V Adj Vt.	6.5	IA	It	-	5×10^{-10}	A
	h.	Life	Note 5		IC				
		Life Test End Point 500 hours	As in test b	6.5		ΔVt	-	1.5	%
		Life Test End Point 2000 hours	As in test b Notes 6 & 7			ΔVt	-	2.0	%

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NOTES (tests)

General: A lot shall consist of one month's production. Tests "a" to "f" are to be performed using Circuit 1 on page 5

1. Increase priming anode voltage (vp) slowly until the valve ignites primer to cathode.

2. Increase trigger voltage (Vt) slowly until the valve ignites trigger to cathode.

3. Increase anode voltage (Va) slowly until the valve ignites anode to cathode.

4. Measure anode voltage drop with a high impedance voltmeter connected between anode and cathode when the anode maintaining current is adjusted to 10 mA. For this test only, Ca should be disconnected.

5. Apply an unsmoothed half wave rectified A.C. voltage of 280 volts peak to the anode so that Ia mean = 25 mA and Ia peak = 100 mA. See circuit 2 on page 5

6. This is not a batch acceptance test but shall be made on valves undergoing normal factory life tests. Examination of the records of such tests will normally be considered as fulfilment of the requirements of the test clause.

7. Change of Vt (1) from original Value.

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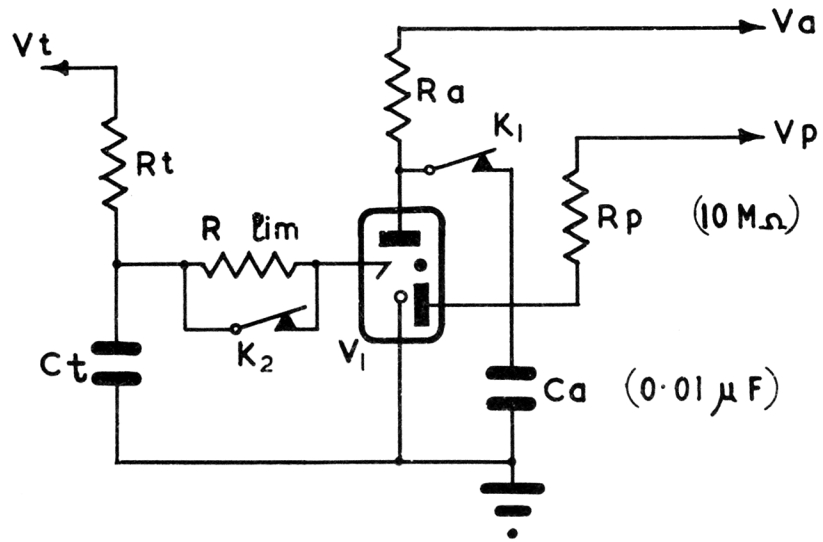
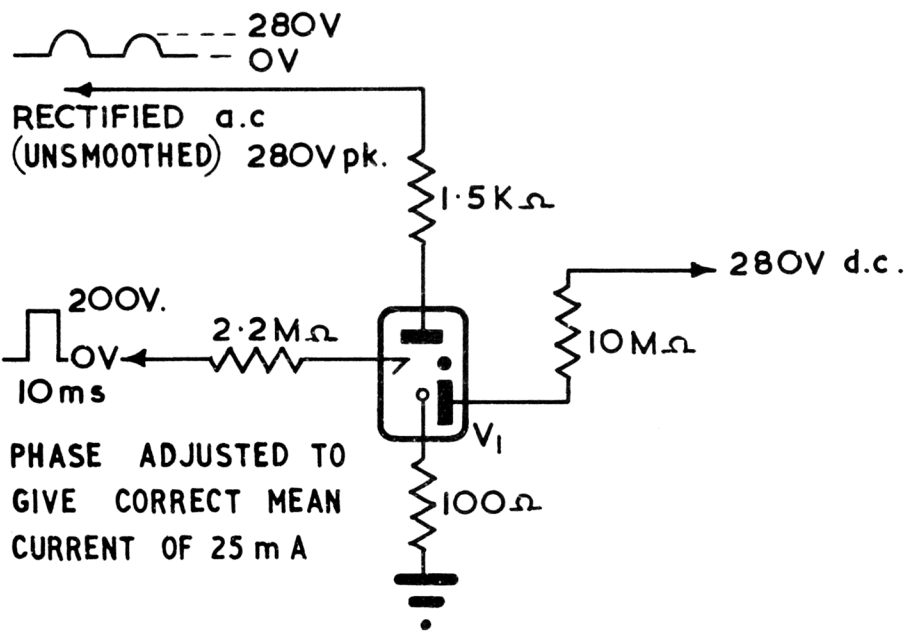


CIRCUIT. 1



CIRCUIT. 2