VALVE ELECTRONIC CV521

ADMIRALTY SIGNAL AND RADAR ESTABLISHMENT

Specification AD/CV521 Issue No. 2 dated 23rd May, 1955. To be read in conjunction with K1001.	SECURITY Specification: Unclassified Valve: Unclassified

→ Indicates a change

TYPE OF VALVE:- Cold Cathode Gas Discharge Tube.

ENVELOPE:- Glass.

PROTOTYPE:- R4410.

MARKING

See K1001/4 and Page 3.

RATING

			Note
Max. Anode Voltage	(V)	1800	A
Max. Mean Anode Current	(mA)	100	A
Max. Value of Discharge Capacitance	(μF)	10	A,B
Max. Frequency of Discharge	(pps)	4	A
Trigger Voltage	(kV)	20-30	C
Ambient Temperature Range	(°F)	-37 to + 140	

DIMENSIONS

See drawing, page 3. ←

NOTES

A. Absolute Maximum Value.

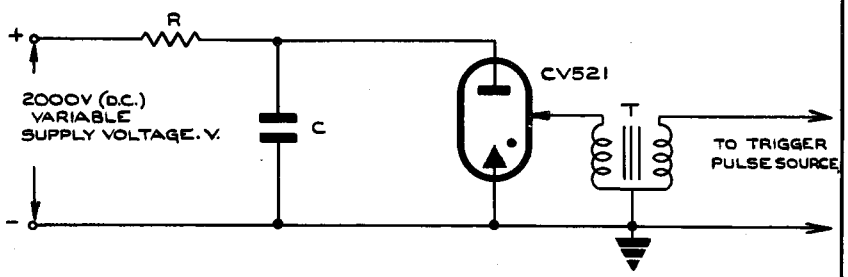
B. To prolong tube life the value of the discharge capacitance should be kept as low as is practicable. A value not exceeding 4 μF is recommended.

C. Trigger voltages are provided by a high-voltage transformer, such as a car ignition transformer with secondary voltage of 20 to 30 kV. The primary is supplied with appropriate voltage pulses and the secondary is connected to a metal band, or to a few turns of bare wire, around a length not exceeding one inch of the midportion of the tube. Suitable trigger pulses may be obtained by discharging a 1 μF capacitor, charged to 450 V, across the primary of Ignition Coil, Admiralty Pattern, W6743. ←

To be performed in addition to those applicable in K1001.

	Test Conditions The valves are to be tested in the circuit given on page 3.	Test	Requirements	No. Tested
a	Set supply voltage V at 1500 V (D.C.). Then apply trigger voltage.	Starting Voltage	Tube must fire	100%
b	Set supply voltage V at 1900 V (D.C.). No trigger voltage.	Breakdown Voltage	Tube must not fire.	100%
c	Set supply voltage V at 1650 V (D.C.). Apply trigger voltage at 1 p.p.s. and then at 4 p.p.s.	Discharge Frequency Range	Tube must fire regularly. Test duration at each frequency to be at least 1 minute.	100%
d	Set supply voltage V at 1650 V (D.C.). Apply trigger voltage at 4 p.p.s. C = 10 µF.	Life Test	300 hours min. (Life ends when tube fails to fire, fires erratically or discharges continuously.)	T.A.
e	Set supply voltage V at 1650 V (D.C.). Apply trigger voltage at 4 p.p.s.	Ambient Temperature Test	Tubes must operate satisfactorily over ambient temperature range of -35°F to + 140°F.	T.A.

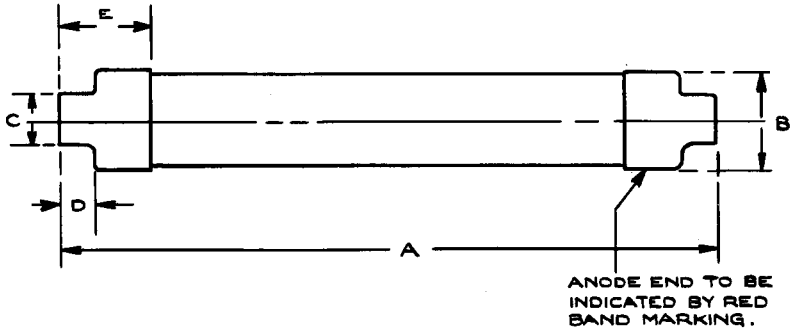
TEST CIRCUIT. CV521



C = 10 /uF for all tests.

T = High-Voltage Transformer.

R = 1000 Ω. (If the impedance of the supply voltage source is appreciable, this value of the charging resistance R is adequate; but, if the source impedance is low, then R must be of such higher value (e.g. 5000 Ω) as will ensure that the tube will return to the non-conducting condition between pulses).



DIMENSIONS IN INCHES.		
DIM.	MIN.	MAX.
A	9·25	9·75
B	1·125	1·185
C	0·562	0·625
D	0·495	0·515
E	1·300	1·412