MINISTRY OF SUPPLY (DLRD(A))

VALVE ELECTRONIC **CV2210**

Specification TRE/CV2210
Issue 2 Dated 31.1.52
To be read in conjunction with K1001, ignoring clause 5.2

SECURITY

Specification	Valve
UNCLASSIFIED	UNCLASSIFIED

→ Indicates a change

TYPE OF VALVE - Gas-filled Triode Thyratron
CATHODE - Directly heated
ENVELOPE - Glass
PROTOTYPE - 5544

RATINGS

			Note
Filament Voltage	(V)	2.5	
Filament Current	(A)	12	A
Max. Peak Forward Anode Voltage	(kV)	1.5	
Max. Peak Inverse Anode Voltage	(kV)	1.5	
Max. Peak Anode Current	(A)	40	
Max. Mean Anode Current	(A)	3.2	B
Max. Surge Anode Current for 0.1 sec. max.	(A)	500	C
Max. Grid Voltage before conduction	(V)	-250	
Max. Grid Voltage during conduction	(V)	-10	
Max. Peak Grid Current with anode negative	(mA)	25	D
→ Max. Mean Grid Current with anode positive	(A)	0.2	E
→ Max. Commutation Factor		130	F
Ambient Temperature Range	(°C)	-55 to +70	
Max. Series Grid Resistor	(Megohm)	0.1	

MARKING

See K1001/4

BASE

B4D

CONNECTIONS

Pin	Electrode
1	Grid
2	Filament
3	Filament
4	No connection
TC	Anode

TOP CAP

See K1001/A1/D5.5

MOUNTING POSITION

Any, between horizontal and vertical with base downwards.

DIMENSIONS (mms)

See K1001/A1/D1

Dimension	Min.	Max.
A	170	195
B	-	67

NOTES

A. Min. Filament Heating Time = 60 secs.
B. Max. Time of Averaging = 15 secs.
C. This figure is given as a guide to circuit designers for worst fault conditions.
D. With anode more negative than -10V.
→ E. Averaged over 1 cycle.
→ F. Commutation Factor is defined as the product of the rate of change of anode current just prior to extinction (in Amp/μsec) and the rate of rise of inverse anode voltage immediately following current extinction (Volt/μsec). If the max. commutation factor is exceeded the life of the valve will be reduced.

TESTS

CV 2210

To be performed in addition to those applicable in K1001.

	Test Conditions							Test	Limits		No. Tested	Note
	Vh (V)	Va peak (V)	Va PIV (V)	Series Resistor Grid (ohms)	Series Resistor Anode (ohms)	Vg (V)	Ia (A)		Min.	Max.		
a	2.5	-	-	-	-	-	-	Ih (A)	10	14	100% or 8	1
b	2.5	1500 DC	-	0	Any value 1K-100K ohms	Adjust	-	-Vg for conduction (V)	4	15	100%	
c	2.5	1500 DC	-	1M	Any value 1K-100K ohms	Adjust	-	Variation in -Vg from value found in Test (b) (V)		2	100%	
d	2.5	Adjust DC	-	0	Any value 1K-100K ohms	0	-	Va for conduction (V)	-	200	100%	
e	2.5	Adjust DC	-	0	0	0	3.2	Voltage drop across valve (V)		12	100%	
f	2.5	1500 peak AC 50 c/s			0		3.2				100%	2
	(1)	With grid resistor = 1.1 Megohms adjust Vg to cut-off.						Vg (V)	(a) Note value			
	(2)	Change grid resistor to 100K ohms and re-adjust Vg for cut-off.						Vg (V)	(b) Note value			
								Reverse Ig (μA) (Calculated from $\frac{b - a}{1 \text{ Megohm}}$).		5		
g	Ia peak = 500A, derived from 50 c/s AC source for period of 0.1 sec. The valve shall be run then for five minutes with Ia = 3.2A derived from 50 c/s AC source.							At the conclusion of this test the valve shall meet all the other electrical requirements of this specification.			TA	

NOTES

1. Pre-heat for 3 minutes.
2. The grid voltage for this test shall be in the form of a short duration pulse superimposed on a steady negative bias and arranged such that the valve fires at the 90° point on the anode voltage sine curve.
   A "cheater" circuit may be used so that the current is drawn from a lower voltage supply while 1500V is maintained in the reverse direction, but such a circuit must be approved.