

MINISTRY OF SUPPLY (S.R.D.E.)

Specification: MOS/CV155/Issue 3

Dated:- 17.8.48.

To be read in conjunction with K1001,
ignoring clauses 5.5, 5.8, 7.2.SECURITYSpecification

Valve

Unclassified

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→ indicates a change

<u>TYPE OF VALVE:-</u> Triode oscillator, air cooled. <u>CATHODE:-</u> Indirectly heated <u>ENVELOPE:-</u> Metal - glass <u>PROTOTYPE:-</u> E.1190			<u>MARKING</u> See K1001/4, ignoring all reference to a frame. Additional marking:- Serial No. (See Note A, page 3)
<u>RATING</u>		Note	<u>BASE</u> None
Heater voltage (V)	6.3-7.0	B	<u>CONNECTIONS AND</u> <u>DIMENSIONS</u> See drawing page 4. Gauges are shown in G.E.C. drawings A.42102F, A.43407D/11 and A.43408R/1 or later issues of these drawings.
Heater current (A)	2.7		
Max. peak anode voltage (kV)	4.75	C	
Max. anode dissipation (W)	50	D	
Amplification factor	15		
Min. operating wavelength (cms)	25	C	
Pulse output power at 25 cms. per pair (kW)	40	C	
<u>CAPACITANCES (pF)</u> C _{ag} C _{gc} C _{ac}	3.8 7.3 2.2		

TESTS

To be performed in addition to those applicable in K1001

	Test Conditions				Test	Limits		No. Tested
						Min	Max	
a	Vh	Va	Vg	Ia (mA)	Capacitances (pF) Cgc		9.5	T.A
b	7.0	0	0	-	Ih (A)	2.4	3.0	100%
c	7.0	500	Read	100	Vg (V)	-12	-40	100%
d	7.0	500	-	100	(i) Ig (μ A) gas (This is the immediate decrease in -Ig when Vg is rapidly increased to cut-off Ia) (ii) Ig (μ A) grid emission and/or leak. Note 1.	-	10	100%
e	7.0	300	-	100	(i) Grid voltage shall not be +ve (ii) Change in grid voltage from value in test clause 'b'. Note 1.	-	-	100%
f	7.0	500	500	Strapped	Peak emission (A) Note 2.	20	-	100%

NOTES

- Should the presence of unsaturated grid emission render test 'd' (i) impossible, the test may be considered fulfilled if no trace of gas is evident in test 'f'.
- Peak emission to be measured under pulse conditions, pulse length 2 μ secs and repetition frequency 50 p.p.s. shape of pulse sinusoidal. Any alternative test conditions require specific approval.
Pulse operation normally has an ageing effect and favours the growth of peak emission while static tests with continuous anode dissipation have a reverse effect. A valve which has once passed the peak-emission acceptance test may thus subsequently be found below the acceptance limit but prove satisfactory after brief re-ageing in the pulse equipment.

NOTES

- A. Valves are to be marked with two figures (e.g. 20/150) the first figure being the peak emission in amps. and the second figure being the anode current in mA at $V_a = 100$ and zero bias.
- B. With heater voltage of 6.3 V, peak emission in a pulsed oscillator circuit tends to rise during the first 500 hours of life, reaching a value comparable with early life emission with 7.0 V on the heater. With heater voltage of 7.0 V, peak emission may be expected to fall by 25% during the first 500 hours of life.
- C. Under pulse conditions with V_a applied in 1 μ sec. pulses at 400 c.p.s. recurrence.
- D. Maximum temperature of anode and grid seal must be kept below 140°C . Forced air cooling is necessary, a flow of approximately 4 cu. ft. of air per minute being recommended, the pressure drop being usually of the order of 1.5 inches of water, but may be lower depending on the design of the system.

