

ELECTRONIC VALVE SPECIFICATIONS

SPECIFICATION CV.7040

ISSUE 1 DATED 15.1.59

AMENDMENT NO. 3

PAGE 4

GROUP F

DELETE PRESENT LIFE TEST and LIFE TEST

END POINTS

INSERT NEW LIFE TESTS and END POINTS:-

K1007 Ref.	Test	Test Conditions	AQL %	Insp. Level	Symbol	Limits		Units
						Min.	Max.	
13	<u>GROUP F</u> Operating Life (1) <u>NOTE 3</u>	Half-Wave Circuit with Resistive Load If AV = 30 mA Tamb = 125°C min. P.I.V. = - 150V Duration 72 hours minimum	-	III	-	-	-	-
13.3	Operating Life (1) Test End Points							
5c4	Forward Voltage Drop	Ia = 30 mA	0.65	-	Va	-	1.3	V
5c3	Reverse Current (2)	Va = -150V Tamb = + 100°C	0.65	-	Ir	-	15	μ A
13	Operating Life (2) <u>NOTE 4</u>	As for Operating Life (1) Duration 1000 hours min.	4.0	IA	-	-	-	-
13.3	Operating Life (2) Test End Points							
5c4	Forward Voltage Drop	Ia = 30 mA	-	-	Va	-	1.3	V
5c3	Reverse Current (2)	Va = -150V Tamb = + 100°C	-	-	Ir	-	15	μ A

PAGE 5

Add the following Note:-

- The 1000 Hour Life Test shall be conducted on the initial lot and thereafter every 90 days or every fifth lot whichever occurs first. The Inspection Level shall be IA. AQL 4%.

Inspection requirements shall be as defined by K1007 Issue 3 Group C Inspection paragraph 4.5.3 incorporating the life test procedure as paragraph 6.6. Clause 4.5.3.3. will not apply, however the Inspectorate will inform the Qualification Approval Authority if and when the requirements of Operation Life (2) have not been met.

JANUARY, 1964

MINISTRY OF AVIATION, R.A.E.

(213567)

SPECIFICATION M.O.S./CV.7040 ISSUE No.1 DATED 15.1.59 To be read in conjunction with K.1007 Sections, 1,2,3,4, 5.1,5.2,5.3,9,15 and other sections and appendices referred to in the test specification.	<u>SECURITY</u>	
	<u>SPECIFICATION</u>	<u>VALVE</u>
	Unclassified	Unclassified

TYPE OF VALVE: Silicon Junction Diode. CONSTRUCTION: Double-ended. POLARITY: Red marking corresponds to the cathode of a thermionic diode. PROTOTYPE: QA202.	<u>MARKING</u>
	Red band or dot denoting cathode lead. <i>POLARITY</i> <i>markings</i> CV Number or CV Number colour coding and if possible, manufacturer's code.

<u>RATINGS AND CHARACTERISTICS</u> (All limiting values are absolute)		<u>DIMENSIONS</u>	
		See drawing on page 5.	
		Body 7.6mm long x 3.5mm dia. (maximums)	
		Overall length 64 ± 2.5mm.	
<u>NOTES</u>		<u>MOUNTING POSITION</u>	
		Any.	
<u>PACKAGING</u>		K.1007/14	
Max. Peak Inverse Voltage at -55 to +125°C (V) 150 A Max. Average Rectified Forward Current at P.I.V. (125°C) (mA) 30 B Max. Peak Forward Current at P.I.V. (125°C) (mA) 100 C Max. Reverse Current at P.I.V. (25°C) (μA) 0.1 Max. Reverse Current at P.I.V. (100°C) (μA) 10 Forward Voltage at forward current = 100μA at 25°C (V) 0.53 at 100°C (V) 0.38 Forward Voltage at forward current = 10mA at 25°C (V) 0.8 at 100°C (V) 0.7 Forward Voltage at forward current = 30mA at 25°C (V) 0.9 at 100°C (V) 0.8 Max. Storage Temperature Range (°C) - 55 +125			

<u>NOTES</u>	
A.	This rating applies to all waveforms including very short transients.
B.	See derating curve Fig.1 page 2 for average forward current up to 50 mA.
C.	See derating curve Fig.2 page 2 for peak forward current up to 150 mA.
D.	<i>ISS. No. 15/6/59/237/2016</i>

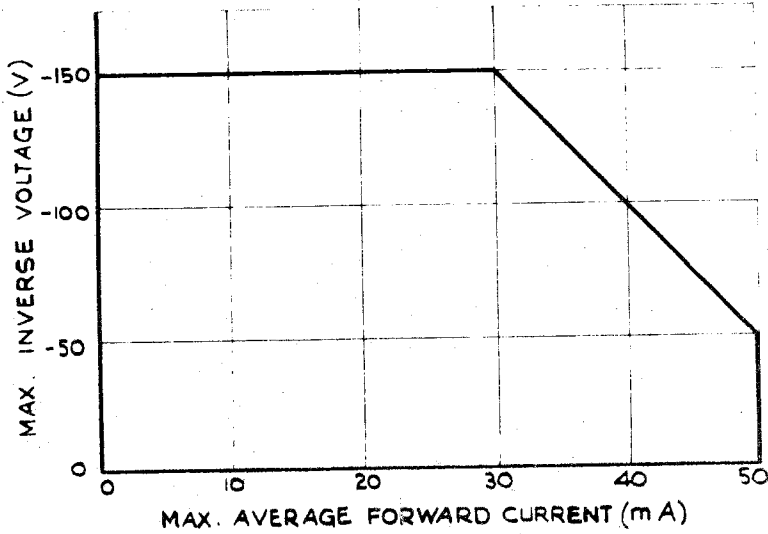


FIG. 1.

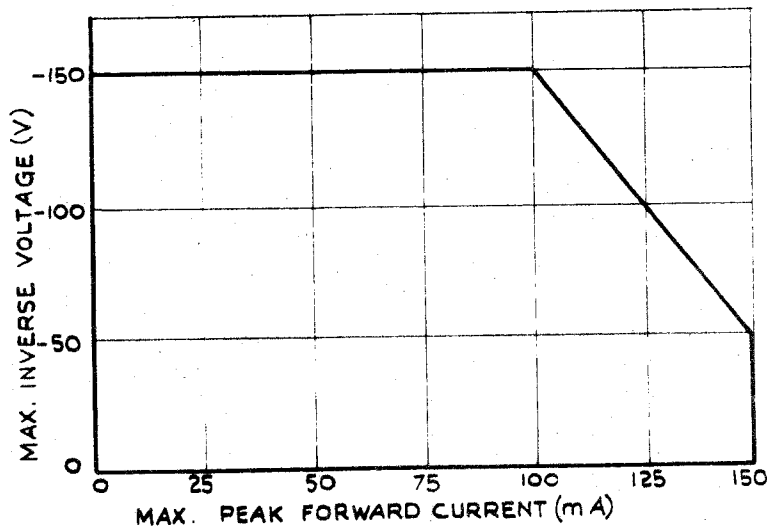


FIG. 2.

To be performed in addition to those applicable in K.1007.

CV.7040

K.1007 Ref.	Test	Test Conditions	AQL %	Insp. Level	Symbol	Limits		Units
						Min.	Max.	
	<u>GROUP A</u>							
5C.4	Forward Voltage Drop	Ia = 30 mA	-	100%	Va	-	1.2	V
5C.2	Reverse Current (1)	Va = -150V.	-	100%	Ir	-	0.1	μA
	<u>GROUP B</u> - Omitted							
	<u>GROUP C</u>							
5C.3	Reverse Current (2)	Va = -150V. T.amb = 100°C ± 3°C.	2.5	I	Ir	-	10	μA
	<u>GROUP D</u> - Omitted							
	<u>GROUP E</u>							
	<u>Mechanical Tests</u>							
10.1	Lead Fragility	No voltages. Note 2.	6.5	IC	-	-	-	-
11.5	Solderability	No voltages.	6.5	IC	-	-	-	-
10.2	Temperature Cycling Note 1.	Three cycles -40°C to +125°C. No voltages.	-	IC	-	-	-	-
10.3	Climatic Cycling Note 1.	Duration 84 days. No voltages.	-	-	-	-	-	-
	<u>Post Temperature Cycling and Climatic Cycling Tests</u>							
8	Inoperatives		6.5	-	-	-	-	-
5C.4	Forward Voltage Drop	Ia = 30 mA.	6.5	-	Va	-	1.3	V
5C.3	Reverse Current (2)	Va = -150V. T.amb = 100°C ± 3°C.	6.5	-	Ir	-	11	μA
11.3	Fatigue Test	No voltages.	-	IC	-	-	-	-
	<u>Post Fatigue Tests</u>							
5C.4	Forward Voltage Drop	Ia = 30 mA.	6.5	-	Va	-	1.3	V
5C.3	Reverse Current (2)	Va = -150V. T.amb = 100°C ± 3°C.	-	-	Ir	-	11	μA
11.4	Shock Test	No voltages. Hammer Angle = 60°.	-	TA	-	-	-	-

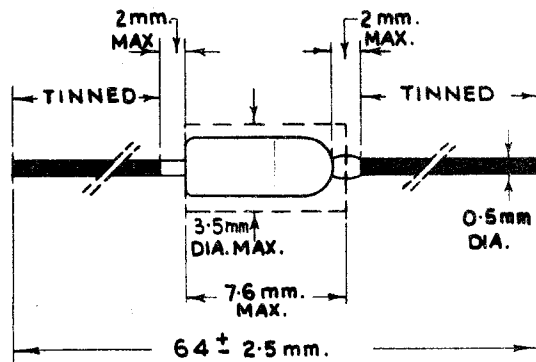
CV.7040/1/3

Var forward drop
up. 5 mA - 30 mA.
Mean fig.

K.1007 Ref.	Test	Test Conditions	AQL %	Insp. Level	Symbol	Limits		Units
						Min.	Max.	
	<u>Post Shock Tests</u>	Combined AQL	6.5					
50.4	Forward Voltage Drop	Ia = 30 mA.	4.0		Va	-	1.3	V
50.3	Reverse Current (2)	Va = -150V. T.amb = 100°C ± 3°C.	4.0		Ir	-	11	μA
13	<u>GROUP F</u> Life Test. Note 3. <i>see amendments</i>	Half-wave circuit with resistive load. If av. = 30 mA. T.amb = 125°C min. P.I.V. = -150V.	-	IA	-	-	-	-
13.3.2	Intermittent Life Test							
13.3	<u>Life Test End Point</u> <u>1,000 hours</u>	Combined AQL	6.5					
50.4	Forward Voltage Drop	Ia = 30 mA.	4.0	-	Va	-	1.3	V
50.3	Reverse Current (2)	Va = -150V. T.amb = +100°C.	4.0	-	Ir	-	15	μA
13.4	Storage Life (1)	No voltages. t = 150 hours. T = -55°C.	-	I	-	-	-	-
13.5	Storage Life (2)	No voltages. t = 150 hours. T = +125°C min.	-	I	-	-	-	-
	<u>Post Storage Life Test</u> <u>End Point</u>							
		Combined AQL for Storage Life (1)	2.5	-	-	-	-	-
		Combined AQL for Storage Life (2)	4.0	-	-	-	-	-
	Forward Voltage Drop	Ia = 30 mA.	-	-	Va	-	1.2	V
	Reverse Current (2)	Va = 150V. T.amb = 100°C ± 3°C.	-	-	Ir	-	10	μA
5.3. 2.11	Retest after 28 days holding period.		-	100%	-	-	-	-
8	Inoperatives		0.5		-	-	-	-
50.4	Forward Voltage Drop		1.0		-	-	1.2	V

NOTES

1. Diodes used for this test will not be accepted for delivery.
2. Diodes used for this test must have undergone at least 28 cycles of the climatic test.
3. The life test may be continuous at the discretion of the manufacturer.

DIMENSIONAL DRAWING

LEADS MUST NOT BE BENT CLOSER THAN
2 mm. FROM THE SEAL.