

ELECTRONIC VALVE SPECIFICATIONS

SPECIFICATION CV.7332

ISSUE 1. DATED 26-1-62

AMENDMENT NO. 1

PAGE 5

Stored charge test circuit: Under 10 n sec. Max:-
ADD - 10V PEAK

Ministry of Aviation,
R.A.E.

July, 1963.
(190361)

ELECTRONIC VALVE SPECIFICATIONS

SPECIFICATION CV.7332

ISSUE NO.1. DATED 26-1-62

AMENDMENT NO. 2

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.	
	<u>GROUP F</u>							
13	Operating Life(1)	Half-Wave Circuit	-	III	-	-	-	-
	<u>NOTE 3</u>	With Resistive Load P.I.V. = -150V If Av. = 40mA Tamb = 125°C Duration 72 hours minimum						
13.3	Operating Life (1) Test End Points	<u>NOTE 5</u>						
5c4	Forward Voltage Drop	If = 30 mA	0.65	-	Vf	-	1.25	V
5c3	Reverse Current(2)	As in GROUP C	0.65	-	Ir	-	12.0	μA
13	Operating Life (2)	As for Operating Life (1) Duration 1000 hours minimum	4.0	IA	-	-	-	-
	<u>NOTE 6</u>							
13.3	Operating Life (2) Test End Points							
5c4	Forward Voltage Drop	IF = 30 mA	-	-	Vf	-	1.25	V
5c3	Reverse Current(2)	As in GROUP C	-	-	Ir	-	12.0	μA

PAGE 4

Add the following note:-

6. 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.

SPECIFICATION M.O.A./CV.7332 ISSUE NO.1 Dated 26.1.62 To be read in conjunction with K1007		<u>SECURITY</u> Specification Valve Unclassified Unclassified	
TYPE OF VALVE: Silicon Junction Diode CONSTRUCTION: Double-ended, wire leads POLARITY: Red marking corresponds to the cathode of a thermionic valve. PROTOTYPE: OA202		<u>MARKING</u> K1007/4 Red band or dot denoting cathode lead. CV. No. or CV. No. colour coding and if possible the manufacturer's code.	
<u>RATINGS AND CHARACTERISTICS</u> (All limiting values are absolute) Not for Inspection Purposes		<u>DIMENSIONS</u> See K1007/A1/D8	
		NOTES	
Max. Peak Inverse Voltage (-55°C to +125°C) (V)	150	A	<u>MOUNTING POSITION</u> Any
Max. Average Rectified Forward Current at P.I.V. (125°C) (mA)	40	B	
Max. Peak Forward Current at P.I.V. (125°C) (mA)	125	C	<u>PACKAGING</u> K1007/4
Max. Storage Temperature Range (°C)	-55 to +125		
Max. Reverse Current P.I.V. (25°C) (µA)	0.1		
Max. Reverse Current P.I.V. (100°C) (µA)	6		
Nominal Forward Voltage (Tamb=100°C) at:-			
If = 100 µA (V)	0.38		
If = 10 mA (V)	0.7		
If = 30 mA (V)	0.8		
Nominal Stored Charge (nC)	7.2	D	
<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. Measured in the circuit shown on page 5.			
E. The Joint Services Catalogue Number is 5960-99-037-2903			

DERATING CURVES

FIG. 1.

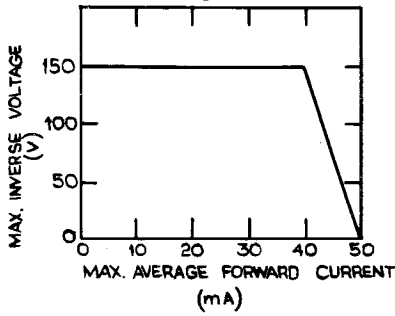
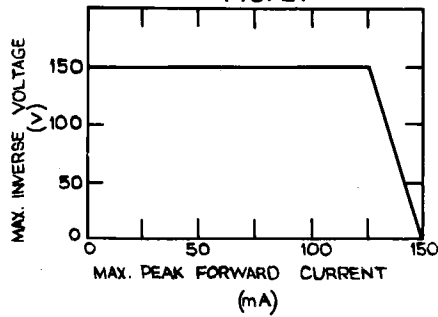
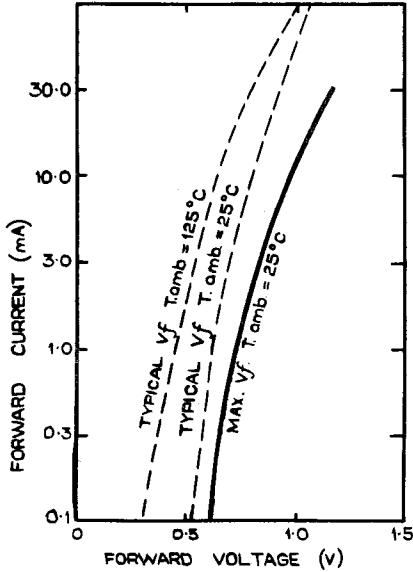


FIG. 2.

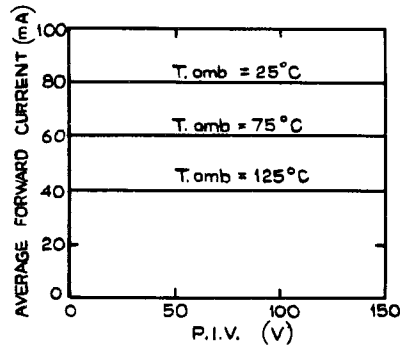


DESIGN CURVES

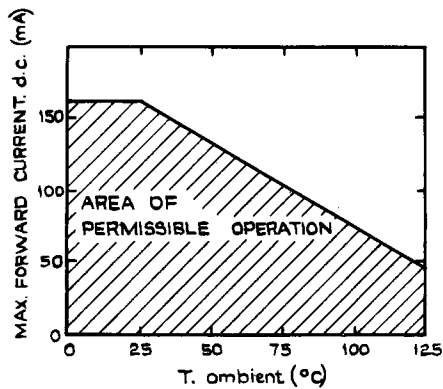
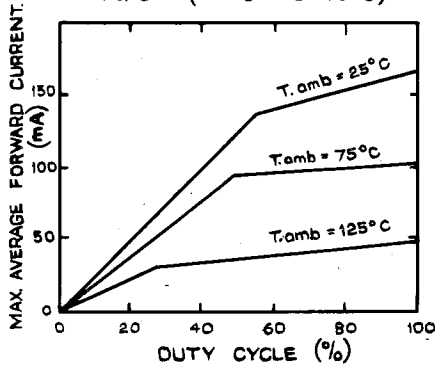
FORWARD VOLTAGE CHARACTERISTIC



BOUNDARIES OF OPERATION (SINUSOIDAL, RESISTIVE LOAD)



PULSE OPERATION OR SINUSOIDAL INPUT (CAPACITIVE LOAD)



TESTS

CV7332

To be performed in addition to those applicable in K1007

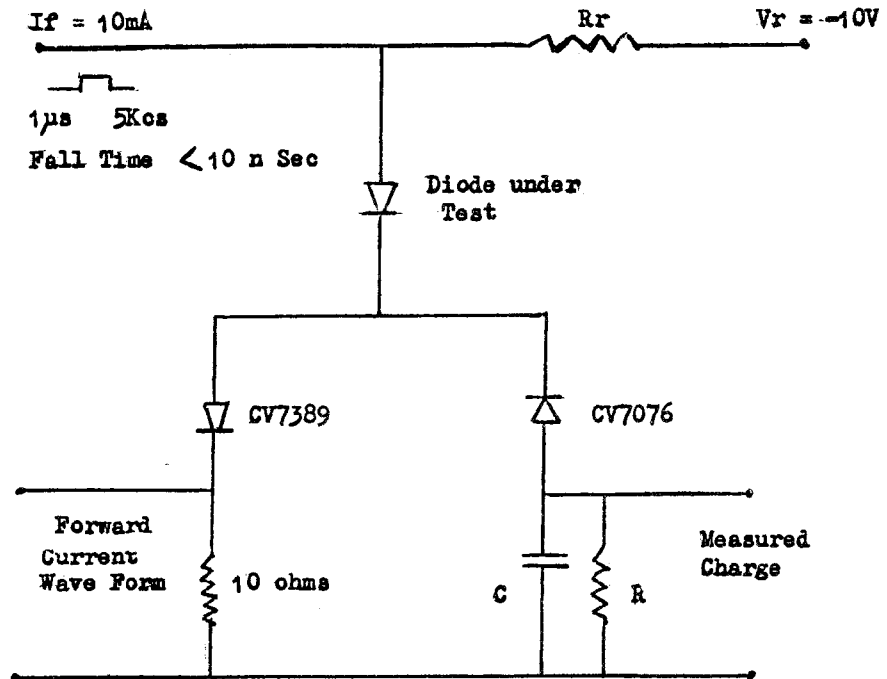
K1007 Ref.	Test	Test Conditions	AQL %	Insp. Level	Symbol	Limits		Units
						Min.	Max.	
	<u>GROUP A</u>							
5C.4	Forward Voltage Drop	If = 30 mA	-	100%	Vf	-	1.15	V
5C.2	Reverse Current (1)	Vr = -150V	-	100%	Ir	-	0.1	μA
	<u>GROUP B omitted</u>							
	<u>GROUP C</u>	Combined A.Q.L.	4.0					
5C.3	Reverse Current (2)	Vr = 150V. Tamb. = 100 ± 3°C	2.5	I	Ir	-	6.0	μA
	Stored Charge	Note 4	2.5	I	Q	-	10.0	nC
	<u>GROUP D</u>							
	Capacitance	Vf = 0.75V f = 0.5 Mc/s	4.0	IA	C	-	25	pF
	<u>GROUP E</u>							
11.5	Solderability	No voltages	6.5	IC	-	-	-	-
10.1	Lead Fragility	No voltages Note 2	6.5	IC	-	-	-	-
10.2	Temperature Cycling	Three cycles -55°C to +100°C No voltages	-	IC	-	-	-	-
10.3	Climatic Cycling	No voltages Note 1	-	-	-	-	-	-
	<u>Post Temperature Cycling and Climatic Cycling Tests</u>	Combined A.Q.L.	10.0					
8	Inoperatives		6.5	-	-	-	-	-
5C.4	Forward Voltage Drop	If = 30 mA	6.5	-	Vf	-	1.25	V
5C.3	Reverse Current (2)	As in Group C	6.5	-	Ir	-	10.0	μA
11.3	Fatigue Test	No voltages	-	IC	-	-	-	-
	<u>Post Fatigue Tests</u>	Combined A.Q.L.	6.5					
5C.4	Forward Voltage Drop	If = 30 mA	-	-	Vf	-	1.25	V
5C.3	Reverse Current (2)	As in Group C	-	-	Ir	-	10.0	μA
11.4	Shock Test	No voltages Hammer Angle = 60°	-	Q.A.	-	-	-	-
	<u>Post Shock Tests</u>	Combined A.Q.L.	6.5					
5C.4	Forward Voltage Drop	If = 30 mA	4.0	-	Vf	-	1.25	V
5C.3	Reverse Current (2)	As in Group C	4.0	-	Ir	-	10.0	μA

CV7332

K1007 Ref.	Test	Test Conditions	AQL %	Insp. Level	Symbol	Limits		Units
						Min.	Max.	
	<u>GROUP F</u>							
13	Life Test (Note 3)	Half-wave circuit with resistive load. P.I.V. = -150V If av. = 40 mA Tamb = 125°C min. Note 5	-	IA	-	-	-	-
13.3.2	Intermittent Life Test							
13.3	<u>Life Test End Point</u> <u>1000 hours</u>	Combined AQL	6.5					
5C.4	Forward Voltage Drop	If = 30 mA	4.0	-	Vf	-	1.25	V
5C.3	Reverse Current (2)	As in Group C	4.0	-	Ir	-	12.0	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 = +100°C	-	I	-	-	-	-
	<u>Post Storage Life</u> <u>Tests</u>							
		Combined AQL for Storage Life (1)	2.5	-	-	-	-	-
		Combined AQL for Storage Life (2)	4.0	-	-	-	-	-
5C.4	Forward Voltage Drop	If = 30 mA	-	-	Vf	-	1.15	V
5C.3	Reverse Current (2)	As in Group C	-	-	Ir	-	10.0	µA
	<u>GROUP G</u>							
	Retest after 28 days holding period		-	100%	-	-	-	-
8	Inoperatives		0.5	-	-	-	-	-
5C.4	Forward Voltage Drop	If = 30 mA	1.0	-	Vf	-	1.15	V

NOTES

- Diodes used for this test shall not be accepted for delivery.
- Diodes used for this test must have previously undergone at least 28 cycles of the climatic test.
- The life test may be continuous at the discretion of the manufacturer.
- The stored charge test shall be measured in the circuit shown on page 5.
- Alternatively the life test may be performed at Tamb = 75°C, If av = 60 mA.

STORED CHARGE TEST CIRCUIT

$$C = 10,000\text{ pf}$$

$$R = 10\text{ Kohms}$$

$$R_r = 1\text{ Kohm}$$