

ELECTRONIC VALVE SPECIFICATIONS  
SPECIFICATION CV7449-50  
ISSUE 1. DATED 20th SEPTEMBER, 1963  
AMENDMENT NO. 1

Page 5, Table 2, Group B Inspection, Sub Group 7

Against "High Temperature Life" in Test Condition Column  
Insert ..... "Note 3"

Page 7 Notes

Add: Note 3. "Less clause 1.3.3.2 for this particular  
test"

September, 1964  
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MINISTRY OF AVIATION/RRE

MILITARY SPECIFICATION

**CV7449-50**

SEMICONDUCTOR DEVICE DIODES

Description:- This specification covers the detail requirements for a very low leakage general purpose Silicon Diode, and is in accordance with specification K1007, Issue 3, except as otherwise stated.

Mechanical Dimensions and Outlines:- Section D, Appendix 1  
 Drawing No. 9.

Connections:- K1007, Section B, 1.3.4.4

Absolute Maximum Ratings:-

Device	Rating	$V_R$	$I_O$	$T_{amb}$	$T_{stge}$	Shock	Vibration
	Unit	V	mA	$^{\circ}C$	$^{\circ}C$	g	g
CV7449	Min.	100	300	+150	+175	1500	20
	Max.						
CV7450	Min.	200	300	+150	+175	1500	20
	Max.						
Note			A			B	

- Notes:-
- A. See derating curve - Fig. 1 Page 8
  - B. 0.5  $\mu$ Sec. duration
  - C. Prototypes IN 457  
 IN 459

# CV7449-50

## Primary Electrical Characteristics

Characteristic		$I_R$ (1)	$I_R$ (2)	$V_F$
Unit		$\mu A$	$\mu A$	V
CV7449-	Max.	.002	2.0	1.0
CV7450	Max.	.002	2.0	1.0
CONDITIONS	Tambient	$^{\circ}C$	25	150 $^{\circ}C$
	$V_R$ CV7449	V	100	100
	$V_R$ CV7450	V	200	200
	$I_F$	mA		250

Reliability Assurance Requirements:- Under discussion

## Requirements

Marking: The device shall be marked as K1007  
Section B 1.3.4.

## Quality Assurance Provisions

Destructive Tests: The tests listed in Table 2, Group B Inspection, Sub-groups 2.3. and 4, Group C Inspection, Sub-group 2, are considered destructive.

Group C Inspection: This inspection shall be conducted on the initial lot and thereafter every 90 days or every 5th lot, whichever occurs first.

## Preparation for Delivery

Packaging: The device shall be packed according to K1007, Issue 3, Section

Joint Service Catalogue Nos. CV7449 = 5960-99-037-3519  
CV7450 = 5960-99-037-3520

This specification has been prepared by, and the Qualification Approval Authority is:- Ministry of Aviation, Royal Radar Establishment, Malvern, Worcestershire.

## TESTS

TABLE 1 GROUP A INSPECTION

Ref. K1007 Issue 3	Test	Test Conditions	AQL	Insp. Level	Sym- bol	Limits		Units
						Min.	Max.	
5.1	<u>SUB-GROUP 1</u> Visual and Mechanical Inspection	Excluding Physical Dimensions	0.65	II				
8A.2.2	<u>SUB-GROUP 2</u> Reverse Current (1)	$V_R = 100V$ (CV7449) $200V$ (CV7450)	0.65	II	$I_R$		.002	$\mu A$
8A.3.2	Forward Voltage Drop <u>SUB-GROUP 3</u>	$I_F = 250mA$	2.5	I	$V_F$		1.0	V
8A.2.2	Reverse Current (2) <u>SUB-GROUP 4</u>	$T_{amb} = 150^{\circ}C$ $V_R = 100V$ (CV7449) $200V$ (CV7450)			$I_R$		2.0	$\mu A$
	Drift (See Note 1)	$V_R = -10V$ d.c.	4.0	I <sub>A</sub>	$\Delta I_R$		.001	$\mu A$

TESTS

TABLE 2 GROUP B INSPECTION

See Page 3 Quality Assurance Provisions

Ref. K1007 Issue 3	Test	Test Conditions	AQL	Insp. Level	Sym- bol	Limits		Units
						Min.	Max.	
5.1	<u>SUB-GROUP 1</u> Physical Dimensions	According to Section D Appendix I, Drawing 9	6.5	I <sub>A</sub>				
5.13	<u>SUB-GROUP 2</u> Solderability	-55°C to +150°C	4.0	I <sub>A</sub>				
5.5	Temperature Cycling							
5.3	Moisture Resistance							
5.15.1	<u>SUB-GROUP 3</u> Vibration Fatigue		4.0	I (Note 2)				
5.10.2	<u>SUB-GROUP 4</u> Lead Fatigue	2 Cycles	6.5	I <sub>A</sub>				
6.2	<u>SUB-GROUPS 5 &amp; 6</u> Omitted							
6.6.1.2.2	<u>SUB-GROUP 7</u> High Temperature Life (Non-operating)	T <sub>Storage</sub> = 175°C Duration = 1000 hrs.	4.0	I (Note 2)				

TESTS

TABLE 2 GROUP B INSPECTION (Cont'd)

Ref. K1007 Issue 3	Test	Test Conditions	AQL	Insp. Level	Sym- bol	Limits		Units
						Min.	Max.	
6.3.2 6.6.1.2.2	<u>SUB-GROUP 8</u> Operating Life	Operation at an ambient temperature between 25°C and 100°C. Forward current not less than the value corresponding to the chosen $T_{amb}$ according to the derating curve Fig. 1 Page 8 $V_R$ = Rating	4.0	$I_A$				
	<u>Post Test End Points for Sub-Groups 2, 3, 7 &amp; 8</u> Forward Voltage Drop Reverse current (2)	$I_F$ = 250mA As in Group A Sub-Group 3			$V_F$ $I_R$	1.0 4.0		V $\mu A$

TESTS

TABLE 3 GROUP C INSPECTION

See Page 3 Quality Assurance Provision

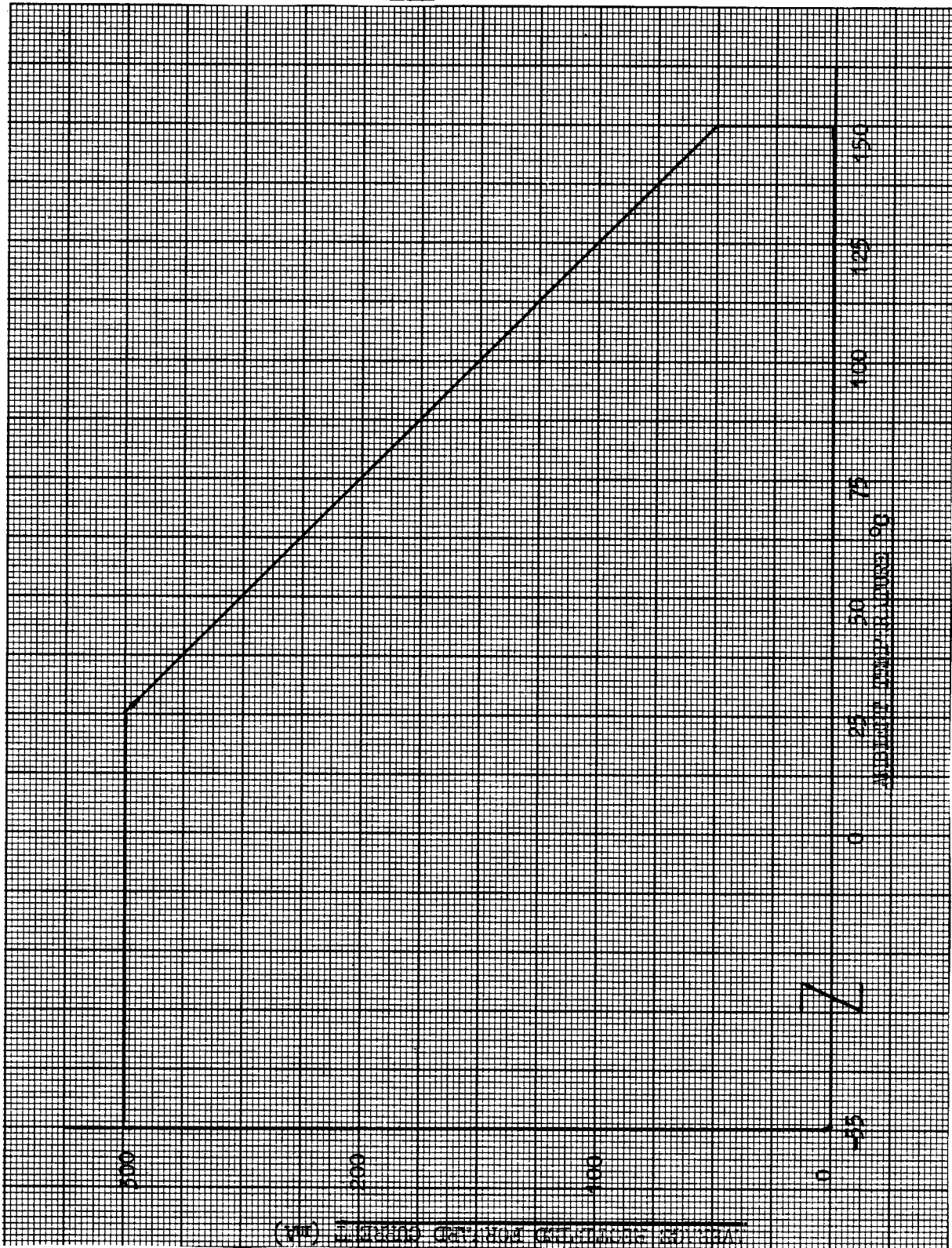
Ref. K1007 Issue 3	Test	Test Conditions	AQL	Insp. Level	Sym- bol	Limits		Units
						Min.	Max.	
5.17.1	<u>SUB-GROUP 1</u> Insulation Resistance	V = 500V between lead and case	1.0	II	R	100		MO
	<u>SUB-GROUP 2</u> Shock	Non-operating. 5 blows in each of 3 mutually perpendicular directions	6.5	IA				
	<u>Post Test End Point for Sub-Group 2</u> As for Group B, Sub-Groups 2, 3, 7 & 8							

NOTES

1. The value of reverse current at +10V d.c. and 25°C in the course of 1 minute shall drift no more than .001 µA from the initial value. Drift readings shall not be made during the first 5 secs.
2. The maximum sample size shall be 125.



FIG 1



(VW) 11/11/63 04:10:01 04:10:01 04:10:01