

ELECTRONIC VALVE SPECIFICATIONS

SPECIFICATION CV7127-28

ISSUE NO. 2 DATED 12.12.1962

AMENDMENT NO. 1

Page 7 - Group B Inspection. Sub Group 7

In Ref. Col. beneath "6.2.1" Insert "6.6.1.2.2"

Page 7 - Group B Inspection. Sub Group 8

In Ref. Col. beneath "6.3" Insert "6.6.1.2.2"

In Conditions Col. Delete "P = 50mW"

Insert " I_C corresponding
to the Derating Curve at $45^{\circ}C$ ".

September 1964
(N228861)

Ministry of Aviation/RRE

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MILITARY SPECIFICATION
CV 7127-28
 SEMICONDUCTOR DEVICE, DIODE

Description:- This specification covers the detail requirements for Germanium Gold Bonded, Glass, double ended Diodes and is in accordance with specification K1007 Issue 3, except as otherwise stated.

Mechanical Dimensions and Outline:- Section B , clause 10.3.3.4.

Polarity:- Cathode end marked as clause 1.3.4.1(b).

Absolute Maximum Ratings:-

Device	Rating	V _{RRM}	V _R	I _R	I _{FSM}	P	T _{stg}	T _{amb}	Shock	Vibration
	Unit	V	V	mA	mA	mW	°C	°C	g	g
CV7127	Min	-	-	-	-	-	-55	-55	-	-
	Max	70	50	75	400	80	+90	+90	500	10
CV7128	Min	-	-	-	-	-	-55	-55	-	-
	Max	70	50	75	400	80	+90	+90	500	10
Notes				1	2					

- Notes
1. See derating curve on Page 9
 2. Not exceeding 1 sec.
 3. Commercial equivalent 85P1, HG5004.

CV7127-28

Primary Electrical Characteristics:-

Characteristic		V_F	V_F	I_R	I_R	C	Stored Charge
Unit		V	V	μA	μA	pF	pC
CV7127	Min.	-	-	-	-	-	-
	Max.	0.65	0.35	10	175	0.8	1000
CV7128	Min.	-	-	-	-	-	-
	Max.	0.65	0.35	10	175	0.8	400
CONDITIONS	I_F mA	50	3	-	-	-	10
	V_R V	-	-	-50	-50	-10	-25
	T_{amb} °C	25	25	25	60	25	25

Reliability Assurance Requirements:- Under discussion

Requirements

Marking The device shall be marked as K1007, Section B 1.3.4. omitting all except 1.3.4.1 (a) and (b) The date code shall appear on multiple packs of 100 or more and the manufacturers code on individual packs.

Quality Assurance Provisions

Destructive Tests The tests listed in Table 2, Group B Inspection, Sub-Group 3 are considered destructive.

Group C Inspection. This inspection shall be conducted on the initial lot, and thereafter every ninety days or every fifth lot, whichever occurs first.

Preparation for Delivery

Packaging The device shall be packed according to K1007 Issue 3, Section A, 1.2.(c).

Joint Service Catalogue Numbers

CV7127 = 5960-99-037-2302
CV7128 = 5960-99-037-3140

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

12th Dec., 1962

TABLE 1. GROUP A INSPECTION

Examination or Test	TEST CONDITIONS		Sym- bol	LIMITS		Units
	K1007/NAFO Ref.	SPECIFIC CONDITIONS		Min.	Max.	
<u>SUB GROUP 1</u> Visual and Mechanical Inspection	5.1	Excluding Physical Dimensions				
<u>SUB GROUP 2</u> Forward Voltage Drop (1)	8A.3.2	$I_F = 100\text{mA}$ or $I_F = 50\text{mA}$	V_F	-	0.8	V
Reverse Current (1)	8A.2.2	$V_R = -50\text{V}$	I_R	-	0.65	V
Forward Voltage Drop (2)	8A.3.2	$I_F = 3\text{mA}$	V_F	-	25	μA
Reverse Current (2)	8A.2.2	$V_R = -25\text{v.}$	I_R	-	0.35	V
Stored Charge	8A.6.2	$I_F = 10\text{mA}$ $C_1 = 0.04 \mu\text{F.}$ $C_2 = 0.01 \mu\text{F}$ $D_1 = \text{CV2290 or CV7110}$ $D_2 = \text{CV7050}$ R_1 Dependant on source voltage Pulse width = 2uSec. $t_r = 10\text{uSec. max}$				
<u>SUB GROUP 3</u> Reverse Current (3)	8A.2.2	$T_{\text{amb}} = 60^\circ\text{C}$ $V_R = -50\text{V}$	I_R	-	175	μA
			Q	-	1000	pC
			Q	-	400	pC

TABLE 1. GROUP A INSPECTION (Contd.)

Examination or Test	TEST CONDITIONS		AQL %	Insp. Level	Sym- bol	LIMITS		Units
	K1007/NATO Ref.	SPECIFIC CONDITIONS				Min.	Max.	
<u>SUB GROUP 3</u>			2.5	I				
Reverse Current (3)	8A.2.2	T _{amb} = 60°C V _R = 50v			I _R	-	175	μA
Forward Recovery Time	8A.6.1.1	i _f = 75mA. Pulse duration, square wave, mark to space ratio 1:1 p.r.f. = 10kc/s t _r = 50nsec max CRO. Max rise time 12nsecs.			t _{frv}	-	200	nsec
Forward Transient Voltage	-	As for 8A.6.1.1.			V _{FSM}	-	1.5	V
<u>SUB GROUP 4</u> Capacitance	8A.5.1	V = -10V	4.0	IA	C	-	0.8	pF

TABLE 2. GROUP B INSPECTION
(See Quality Assurance Provisions, Page 3)

Examination or Test	K1007/NATO Ref.	TEST CONDITIONS		AQL %	Insp. Level	Symbol	LIMITS		Units
		SPECIFIC CONDITIONS					Min.	Max.	
<u>SUB-GROUP 1</u> Physical Dimensions	5.1	According to drawing 10.3.3.4.		6.5	IA				
<u>SUB-GROUP 2</u> Solderability Temperature Cycling Thermal Shock	5.13 5.5 5.6.1	-55°C to +75°C 100°C to 0°C		4	IA				
Moisture Resistance	5.3								
<u>SUB-GROUP 3</u> Vibration Fatigue	5.15.1	Non-operating		6.5	IA				
<u>SUB-GROUP 4</u> Lead Fatigue	5.10.2	3 cycles.		6.5	IA				
<u>SUB-GROUP 5</u> omitted									
<u>SUB-GROUP 6</u> omitted									

TABLE 2. GROUP B INSPECTION (Contd.)

Examination or Test	K1007/NATO Ref.	TEST CONDITIONS SPECIFIC CONDITIONS	AQL %	Insp. Level	Sym- bol	LIMITS		Units
						Min.	Max.	
Post Sub Group 2 <u>3 and 4 End Points</u>								
Forward Voltage Drop (2)	8A.3.2.	$I_F = 3\text{mA}$			V_F	-	0.4	V
Reverse Current (1)	8A.2.2.	$V_R = -50\text{v}$			I_R	-	30	μA
<u>SUB-GROUP 7</u>			4	1.0				
High Temperature Life (non-operating)	6.2.1	$T_{\text{stg}} = 90^\circ\text{C}$						
<u>SUB-GROUP 8</u>			6.5	IA				
Operating Life	6.3	Half wave circuit with resistive load. P.I.V. Max. P = 50mW $T_{\text{amb}} = 45^\circ\text{C}$						
Post Test End Points <u>for SUB-GROUPS 7 and 8</u>								
Forward Voltage Drop (2)	8A.3.2	$I_F = 3\text{mA}$			V_F	-	0.4	V
Reverse Current (1)	8A.2.2.	$V_R = -50\text{v}$			I_R	-	28	μA

TABLE 3. GROUP C INSPECTION
(See Quality Assurance Provisions, Page 3, Group C Inspection)

Examination or Test	TEST CONDITIONS	Sym- bol	Insp. Level	AQL %	LIMITS		Units
					Min.	Max.	
<u>SUB-GROUP 1</u> omitted <u>SUB-GROUP 2</u> Shock <u>Post Test End Points</u> As for Group B, Sub-Groups 2, 3 and 4	K1007/NATO Ref. 5.17.1 Non-operating, 5 blows in each of three mutually perpendicular directions.		IA	6.5			

DERATING CURVE

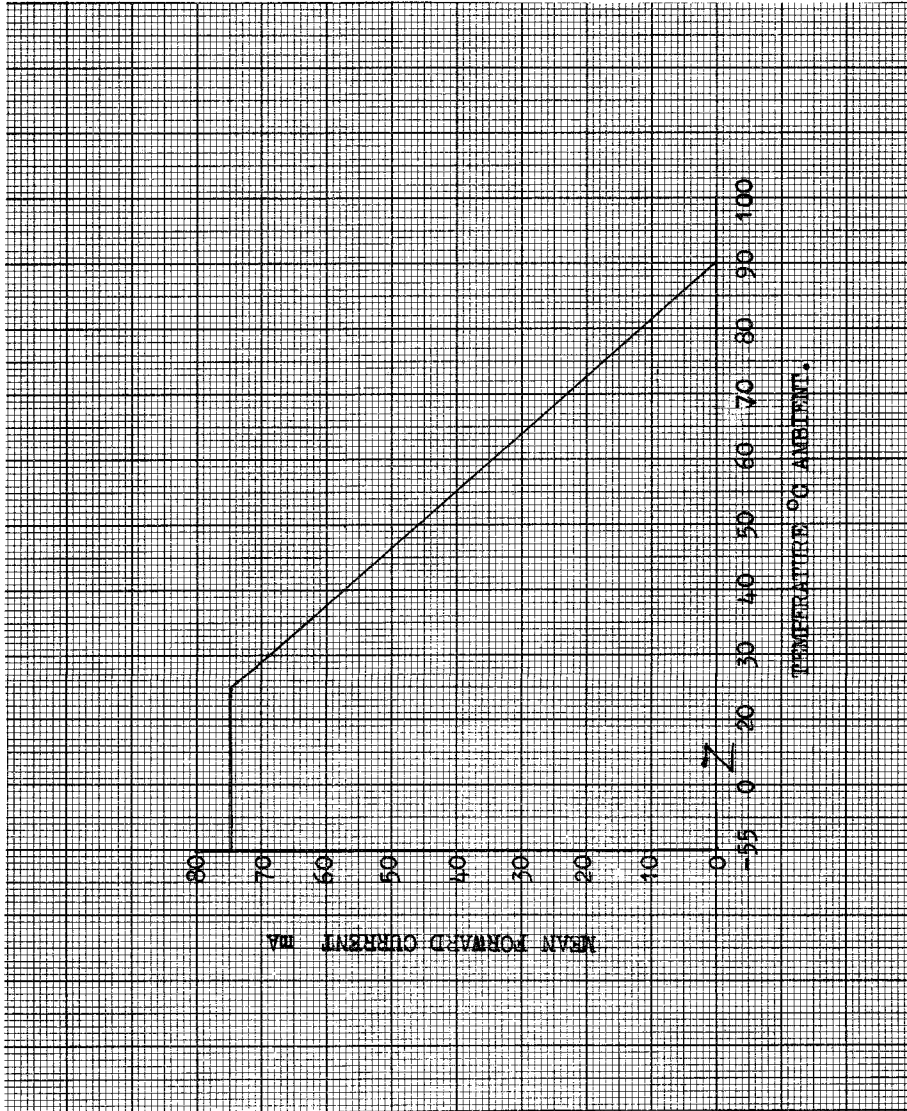


FIG 1.