

MILITARY SPECIFICATION

CV 7376

SEMICONDUCTOR DEVICE, TRANSISTOR

Description:- This specification covers the detail requirements for PNP Germanium Low Frequency Transistor and is in accordance with K1007, Issue 3, except as otherwise stated.

Mechanical Dimensions and Outline:- K1007, Section B.10.3.2.2 and 10.4.2.2.

Connections:- Base connected to case.
 Lead 1. Emitter, Lead 2. Base, Lead 3. Collector.

Absolute Maximum Ratings:-

Rating	V_{CB}	V_{CE}	V_{CE}	V_{EB}	I_C	I_{CM}	P_{tot}	T_{stg}	Vibra- tion	Shock
Unit	V	V	V	V	mA	A	mW	°C	g	g
Min.	-	-	-	-	-	-	-	-55	-	-
Max.	-70	-60	-32	-12	500	1.0	240	+85	20	1500
Note		1	2		3	4				

- Notes 1. $+V_{BE}$ 1V and $I_C = 50mA$
 2. $I_C = 500mA$
 3. Averaged over any 20mSec period
 4. See derating curve Fig. 1. Page 9.
 5. Commercial equivalent ACY 17.

CV 7376

Primary Electrical Characteristics:

Characteristics	I_{CBO}	I_{CBO}	h_{FE}	F	f_{hfb}	V_{CE}	V_{BE}	I_{EBO}
Unit	μA	μA		db	Mc/s	mV	mV	μA
Min.	-	-	50	-	0.6	-	-	-
Max.	10	200	150	22	3.5	500	750	20
CONDITIONS	T_{case} °C	25	55	25	25	25	25	25
	V_{CB} V	-10	-60	0				
	V_{CE} V				-2	-6		
	V_{EB} V							-10
	I_C mA				0.5	1	300	0
	I_B mA						15	
	I_E mA	0		300				300
	f Mc/s				.001			

Reliability Assurance Requirements: Under discussion

Requirements

Marking. The device shall be marked according to K1007, Issue 3, Section B, 1.3.4. (a), (c), (d) and (f) as space permits any remaining marking will be made on the packing.

Quality Assurance Provisions

Destructive Tests. The tests listed in Table 2, Group B Inspection, Sub-Groups 2, 3 and 4 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). A.I.S. Carton Size N^o 6.

Joint Service Catalogue Number.

CV 7376 = 5960-99-037-3338

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

8th April 1963

TABLE 1. GROUP A INSPECTION (Contd.)

Examination or Test	K1007/NATO Ref.	TEST CONDITIONS SPECIFIC CONDITIONS	AQL %	INSP. LEVEL	Sym- bol	LIMITS		Units
						Min.	Max.	
<u>SUB-GROUP 3</u> (contd.)								
<u>Noise Figure</u>		$V_{CE} = -2v.$ $R_{Source} = 500 \text{ ohm}$ $I_C = 0.5mA$ $Freq. = 1 \text{ Kc/s.}$			F	-	22	dB
<u>SUB-GROUP 4</u>			4.0	IA				
Static Forward-Current Transfer-Ratio (2)		$T_{amb} = -55^{\circ}C$			h_{FE}	25	130	
Collector-Base Cut-off Current (2)	7.2.5.1	$T_{amb} = +55^{\circ}C$ $V_{CB} = -60V$ $I_E = 0$			I_{CBO}	-	200	μA

CV7376

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

Examination or Test	K1007/NATO Ref.	TEST CONDITIONS	AQL %	Insp. Level	Sym- bol	LIMITS		Units
						Min.	Max.	
<u>SUB-GROUP 1</u> Physical dimensions	5.1	According to 10.3.2.2 and 10.4.2.2.	6.5	IC				
<u>SUB-GROUP 2</u> Solderability Temperature Cycling Thermal Shock	5.13 5.5 5.6.2.	-55°C to +75°C 0°C +0°C and 85°C +5°C -5°C -0°C	4.0	IA				
Moisture Resistance	5.3.1							
<u>SUB-GROUP 3</u> Vibration Fatigue	5.15		4.0	I Note 1				
<u>SUB-GROUP 4</u> Lead Fatigue	5.10.2	2 Cycles	6.5	IA				
<u>SUB-GROUP 5</u> Omitted								
<u>SUB-GROUP 6</u> Omitted								
<u>SUB-GROUP 7</u> High Temperature Life (non-operating)	6.2.1	T _{stg} = +75°C Duration 1000 hrs.	4.0	I Note 1				

TABLE 2. GROUP B INSPECTION (Contd.)

Examination or Test	TEST CONDITIONS		AQL %	Insp. Level	Sym- bol	LIMITS		Units
	K1007/NATO Ref.	SPECIFIC CONDITIONS				Min.	Max.	
<u>SUB-GROUP 8</u> Operating Life	6.3	T _{amb} at any single temperature between 25°C and 65°C with the corresponding P _{tot} given on the derating curve Fig. 1, Page 9. V _{CE} = -10V. Duration 1000 hours.	4.0	IA				
Post Test End Points for <u>SUB-GROUPS 2, 3, 4, 7 and 8.</u>								
Collector Base Cut-off Current (2)	7.2.5.1	As in Group A. Sub-Group 4			I _{CBO}	-	300	μA
Static Forward Current Transfer-Ratio (1)	7.3.4	As in Group A. Sub-Group 2			h _{FE}	40	180	

CV 7376

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

Examination or Test	K1007/NATO Ref..	TEST CONDITIONS	AQL %	Insp. Level	Sym- bol	LIMITS		Units
						Min.	Max.	
<u>SUB-GROUP 1</u>								
Omitted								
<u>SUB-GROUP 2</u>			6.5	IA				
Shock	5.17	Non-operating, 5 blows in each of three mutually perpendicular planes.						
<u>Post Test End Points</u>								
Collector Base Cut-off Current (2)	7.2.5.1	As in Group A. Sub-Group 4			I _{CBO}	-	300	μA
Static Forward Current Transfer-Ratio (1)	7.3.4.	As in Group A. Sub-Group 2			h _{FE}	40	180	

NOTES

1. The maximum sample size will be 125.

