

MILITARY SPECIFICATION

CV 7379-88

SEMICONDUCTOR DEVICE, RECTIFIER DIODE

Description:- This specification covers the detail requirements for a Silicon, Stud Mounted, Power Rectifier Diode and is in accordance with Specification K1007, Issue 3 except as otherwise stated.

Mechanical Dimensions and Outlines:- Drawing 10.3.3.2

Connections:- Stud-Anode CV7379-7383
 Stud-Cathode CV7384-CV7388

Absolute Maximum Ratings:-

DEVICE	Ratings	V_{RW}	V_{RS}	I_O	I_{FS}	T_{case}	T_{stg}	Vib.	Shock
	Unit	V	V	A	A	°C	°C	g	g
CV7379 CV7384	Min.	-	-	-		-	-55	-	-
	Max.	200	200	10		150	+150	20	500
CV7380 CV7385	Min.	-	-	-	see figure 3.	-	-55	-	-
	Max.	400	400	10		150	+150	20	500
CV7381 CV7386	Min.	-	-	-		-	-55	-	-
	Max.	600	600	10		150	+150	20	500
CV7382 CV7387	Min.	-	-	-		-	-55	-	-
	Max.	800	800	10		150	+150	20	500
CV7383 CV7388	Min.	-	-	-	-	-55	-	-	
	Max.	1000	1000	10	150	+150	20	500	
Note				1		2			

Note 1. At 125°C stud temperature. For method of measurement see TVC information, sheet 10. The maximum total loss is given in Figure 1.

Note 2. See Derating Curve Fig 2.

Note 3. Commercial Equivalent SL-203-K, SL-403-K, SL-603-K, SL-803-K, SL-1003-K. Stud-Anode
 SL-203-A to SL-1003-A. Stud-Cathode.

CV 7379-88

Primary Electrical Characteristics:

Characteristics		V_F	I_R	I_R
Unit		V	μA	μA
CV7379	Min.	-	-	-
	Max.	1.2	50	500
CONDITIONS	T_{case} °C	25	25	100
	V_R V		Note 1	Note 1
	I_F A	10		

Note 1. At appropriate V_{RW} for each type

Reliability Assurance Requirements: Under discussion.

Applicable Documents

T.V.C. Information Sheets Nos. 9 and 10

Requirements:-

Marking The device shall be marked as K1007, Section B, 1.3.4. as space permits.

Quality Assurance Provisions:-

Destructive Tests The tests listed in Table 2, Group B Inspection, Sub Group 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)

Joint Services Catalogue Numbers:-

CV7379	=	5960-99-037-3349
CV7380	=	5960-99-037-3350
CV7381	=	5960-99-037-3351
CV7382	=	5960-99-037-3352
CV7383	=	5960-99-037-3353
CV7384	=	5960-99-037-3354
CV7385	=	5960-99-037-3355
CV7386	=	5960-99-037-3356
CV7387	=	5960-99-037-3357
CV7388	=	5960-99-037-3358

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

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TABLE 1. GROUP A INSPECTION

Examination or Test	K1007/NATO Ref.	TEST CONDITIONS		AQL %	Insp. Level	Sym-bol	LIMITS		Units
		SPECIFIC CONDITIONS					Min.	Max.	
<u>SUB-GROUP 1</u> Visual and Mechanical Inspection	5.1	Excluding Physical Dimensions		0.65	I				
<u>SUB-GROUP 2</u> Forward Voltage Drop	8A.3.2	$I_F = 10A$ Note 2		0.65	II	V_F	-	1.2	V
Reverse Current (1)	8A.2.2	$V_{RW} =$							
		CV7379, CV7384, 200V				I_R	-	50	μA
		CV7380, CV7385, 400V				I_R	-	50	μA
		CV7381, CV7386, 600V				I_R	-	50	μA
		CV7382, CV7387, 800V				I_R	-	50	μA
CV7383, CV7388, 1000V				I_R	-	50	μA		
<u>SUB-GROUP 3</u> Reverse Current (2)	8A.2.2	$T_{case} = 100^\circ C$		2.5	I				
		CV7379, CV7384, 200V				I_R	-	500	μA
		CV7380, CV7385, 400V				I_R	-	500	μA
		CV7381, CV7386, 600V				I_R	-	500	μA
		CV7382, CV7387, 800V				I_R	-	500	μA
		CV7383, CV7388, 1000V				I_R	-	500	μA

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

Examination or Test	K1007/NATO Ref.	TEST CONDITIONS Specific Conditions	AQL %	Insp. Level	Sym-bol	LIMITS		Units
						Min.	Max.	
<u>SUB GROUP 1</u> Physical Dimensions	5.1	According to drawing 10.3.3.2	6.5	IC				
<u>SUB GROUP 2</u> Temperature Cycling	5.5	-55°C to +100°C	4.0	IA				
Moisture Resistance	5.3.1							
<u>SUB GROUP 3</u> Vibration Fatigue	5.15.1	Non-operating	4.0	I Note 1				
<u>SUB GROUP 4</u> Torque Test	5.12.1	15 lbs. ins.	6.5	IA				
<u>SUB GROUPS 5 & 6</u> Omitted								
<u>SUB GROUP 7</u> High Temperature Life (non-operating)	6.2.1	T _{stg} = 100°C Duration = 1000 hrs.	4.0	I Note 1				
<u>SUB GROUP 8</u> Operating Life	6.3.2	T _{case} = 125°C min. I _o = 10A min V _{RW} = Crest working voltage CV7379, CV7384 200V CV7380, CV7385 400V CV7381, CV7386 600V CV7382, CV7387 800V CV7383, CV7388 1000V	4.0	IA				

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>Post Test End Points for Sub-Groups 2, 3, 7 and 8</u> Forward Voltage Drop Reverse Current (1)	8A.3.2	As in Group A, Sub-Group 2			V _F	-	1.3	V
	8A.2.2	As in Group A, Sub-Group 2			I _R	-	60	μA

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

Examination or Test	TEST CONDITIONS		AQL %	Insp. Level	Sym- bol	LIMITS		Units
	K1007/NATO Ref.	Specific Conditions				Min.	Max.	
<u>SUB GROUP 1</u> Omitted								
<u>SUB GROUP 2</u> Shock	5.17	Non-operating, 5 blows in each of three mutually perpendicular directions.	6.5	IA				
<u>Post Test End Points</u>								
Forward Voltage Drop	8A.3.2	As in Group A. Sub Group 2			V _F	-	1.3	V
Reverse Current (1)	8A.2.2	As in Group A. Sub Group 2			I _R	-	60	μA

NOTES

1. Maximum sample size 125.
2. Stud temperature maintained at a value not exceeding 30°C



