

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:-
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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



