

MILITARY SPECIFICATION

## CV 7155-7168

SEMICONDUCTOR DEVICE

Description:- This specification covers the detail requirements for Silicon Voltage-Regulator Diodes, and is in accordance with K 1007, Issue 3, except as otherwise stated.

Mechanical Dimensions and Outlines:- K 1007 Section B 10.3.3.1.

Connections:- Flange End Cathode

Absolute Maximum Ratings:-

Rating	$P_{tot}$	$T_{op}$	$T_{stg}$	Shock	Vibration
Unit	W	$^{\circ}C$	$^{\circ}C$	g	g
Minimum		-55	-55		
Maximum	1.5	175	175	1500	10
Note	1			2	

- Notes:-
1. See Derating Curve, Page 8
  2. Duration 0.5 mS
  3. Commercial Equivalents VR-F Series

# CV 7155 - 7168

## Primary Electrical Characteristics

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CV No.	1	2	3	4	5	6	7
	$V_z$ Nom.	$V_z$ Min.	$V_z$ Max.	$I_z$ test current	$r_z$ Max.	$I_r$ 100°C	$V_r$ test voltage
	volts	volts	volts	mA	ohms	mA	volts
7155	3.6	3.4	3.8	20	25	0.3	2
7156	3.9	3.7	4.1	20	22	0.2	2
7157	4.3	4.0	4.5	20	19	0.2	2
7158	4.7	4.4	5.0	20	18	0.15	2
7159	5.1	4.8	5.4	20	18	0.1	2
7160	5.6	5.3	6.0	20	14	0.1	2
7161	6.2	5.8	6.6	20	7	0.1	2
7162	6.8	6.4	7.2	20	4	0.05	2
7163	7.5	7.1	7.9	20	4	0.02	2
7164	8.2	7.7	8.7	20	4	0.02	2
7165	9.1	8.6	9.6	20	4	0.02	2
7166	10.0	9.4	10.6	20	5	0.02	2
7167	11.0	10.4	11.6	20	6	0.02	2
7168	12.0	11.4	12.6	20	11	0.02	2

## Applicable Documents

### Requirements

#### Marking

The device shall be marked first with the CV number and then according to K 1007, Issue 3, Section B, 1.3.4.

## Quality Assurance Provisions

### Group B Inspection

#### Destructive Tests

The tests listed in sub-groups 2 and 3 are considered destructive.

#### Group C Inspection

This inspection shall be conducted for Qualification Approval only.

## Preparation for Delivery

### Packaging

The device shall be packed according to K 1007, Issue 3, Section A, 1.2.(c)

## Joint Service Catalogue Number

CV 7155 - 5960 - 99 - 037 - 2446  
CV 7156 - 5960 - 99 - 037 - 2447  
CV 7157 - 5960 - 99 - 037 - 2448  
CV 7158 - 5960 - 99 - 037 - 2449  
CV 7159 - 5960 - 99 - 037 - 2450  
CV 7160 - 5960 - 99 - 037 - 2451  
CV 7161 - 5960 - 99 - 037 - 2452  
CV 7162 - 5960 - 99 - 037 - 2453  
CV 7163 - 5960 - 99 - 037 - 2454  
CV 7164 - 5960 - 99 - 037 - 2455  
CV 7165 - 5960 - 99 - 037 - 2456  
CV 7166 - 5960 - 99 - 037 - 2457  
CV 7167 - 5960 - 99 - 037 - 2458  
CV 7168 - 5960 - 99 - 037 - 2459

This specification has been prepared by, and the Qualification Approval Authority is:-

The Engineer-in-Chief, General Post Office, S Branch, London.

TABLE 1 GROUP A INSPECTION

Examination or Test	K1007/3 NATO Ref.	Test Conditions		AQL %	Insp. Level	Symbol	Limits		Units
		Specific Conditions					Min.	Max.	
<u>SUB-GROUP 1</u> Visual and Mechanical	5.1	Excluding Physical Dimensions		0.65	I				
<u>SUB-GROUP 2</u> Breakdown Voltage	8A2.4	T <sub>amb</sub> - 25°C I <sub>Z</sub> as Col.4 Page 2		0.65	II	V <sub>Z</sub>	Col.2 Page 2	Col.3 Page 2	Volts
Slope Resistance	8A4.1	T <sub>amb</sub> - 25°C I <sub>Z</sub> as Col.4 Page 2				I <sub>Z</sub>	-	Col.5 Page 2	Ohms
<u>SUB-GROUP 3</u> Reverse Leakage	8A2.2.1	T <sub>amb</sub> - 100°C V <sub>r</sub> as Col.7 Page 2		2.5	I	I <sub>R</sub>	-	Col.6 Page 2	mA

TABLE 2 GROUP B INSPECTION

Examination or Test	K1007/3 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 10.3.3.1.		6.5	1C				
<u>SUB-GROUP 2</u> Solderability Temperature Cycling Moisture Resistance	5.13 5.5 5.3	-55°C to +100°C		4.0	1A				
<u>SUB-GROUP 3</u> Vibration Fatigue	5.15	Non-Operating		4.0	1C				
<u>SUB-GROUP 4</u> Omitted									
<u>SUB-GROUP 5</u> Omitted									
<u>SUB-GROUP 6</u> Omitted									
<u>SUB-GROUP 7</u> High Temperature Life (non-operating) Low Temperature Life (non-operating)	6.2.1 6.2.2	T <sub>amb</sub> = 100°C t = 150 hours T <sub>amb</sub> = -55°C t = 150 hours		4.0 4.0	1 1				

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TABLE 2 GROUP B INSPECTION Cont'd

Examination or Test	K1007/3 NATO Ref.	Test Condition Specific Conditions	AQL %	Insp. Level	Vz	Limits		Units
						Min.	Max.	
SUB-GROUP 8 Operation Life	6.3.4	Tamb = not greater than 140°C	4.0	1A	Vz	Col.2 Page 2 -0.1	Col.3 Page 2 +0.1	Volts
	6.5 6.6.1	Iz to give dissipation not less than that according to the derating curve. Page 8.						
Post Test End Points for Sub-Groups 2, 3, 7 and 8.								
Breakdown Voltage	8A 2.4	As Group A. Sub-Group 2						

TABLE 3 GROUP C INSPECTION

Examination or Test	Test Conditions		AQL %	Insp. Level	Symbol	Limits		Units
	K1007/3 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 3 mutually perpendicular directions.		QA				
<u>Post-Test End Point for Sub-Group 2</u> Breakdown Voltage	8A2.4	As Group A, Sub Group 2			V <sub>Z</sub>	Col.2 Page 2 -0.1	Col.3 Page 2 +0.1	Volts
<u>NOTES</u> 1. Temperature Coefficient tests of the operating voltages have been omitted in this specification. The devices specified herein are for applications not requiring close control over this characteristic.								

CV 7155 - 7168 &  
CV 7169 - 7177

DERATING CURVE

