

Page i

CAPACITOR FILTERS, C-TYPE, FEEDTHROUGH, ELECTROMAGNETIC INTERFERENCE SUPPRESSION, NON-HERMETICALLY SEALED, BASED ON TYPE SFC040 ESCC Detail Specification No. 3008/032

ISSUE 1 October 2002





ESCC Detail Specification

PAGE	ii
ISSUE	1

LEGAL DISCLAIMER AND COPYRIGHT

European Space Agency, Copyright © 2002. All rights reserved.

The European Space Agency disclaims any liability or responsibility, to any person or entity, with respect to any loss or damage caused, or allleged to be caused, directly or indirectly by the use and application of this ESCC publication.

This publication, without the prior permission of the European Space Ageny and provided that it is not used for a commercial purpose, may be:

- copied in whole in any medium without alteration or modification.
- copied in part, in any medium, provided that the ESCC document identification, comprising the ESCC symbol, document number and document issue, is removed.



european space agency agence spatiale européenne

Pages 1 to 19

CAPACITOR FILTERS, C-TYPE, FEEDTHROUGH, ELECTROMAGNETIC INTERFERENCE SUPPRESSION, NON-HERMETICALLY SEALED, BASED ON TYPE SFC040

ESA/SCC Detail Specification No. 3008/032



space components coordination group

		Appr	Approved by		
Issue/Rev.	Date	SCCG Chairman	ESA Director General or his Deputy		
Issue 1	June 1996	Sa Andt	Hoom		
Revision 'A'	April 1997	Sa Mit	Hours		



Rev. 'A'

PAGE 2

ISSUE 1

DOCUMENTATION CHANGE NOTICE

Rev. Rev. CHANGE Letter Date Reference Item	Approved DCR No.
'A' Apr. '97 P1. Cover page P2. DCN P9. Para. 4.2.4 : Deviation "(d)" added Para. 4.2.5 : Deviation "(c)" added P18. Table 6 : No. 13, Insertion Loss deleted	None None



PAGE 3

ISSUE 1

TABLE OF CONTENTS

1.1 Scope 5 1.2 Component Type Variants and Range of Components 5 1.3 Maximum Ratings 5 1.4 Perameter Derating Information 5 1.5 Physical Dimensions 5 1.6 Functional Diagram 5 2. APPLICABLE DOCUMENTS 5 3. TERMS, DEFINITIONS, ABBREVIATIONS, SYMBOLS AND UNITS 5 4.1 General 9 4.2 Deviations from Generic Specification 9 4.2.1 Deviations from Generic Specification 9 4.2.1 Deviations from Generic Specification 9 4.2.1 Deviations from Special In-process Controls 9 4.2.2 Deviations from Burn-in and Electrical Measurements 9 4.2.3 Deviations from Burn-in and Electrical Measurements 9 4.2.4 Deviations from Lot Acceptance Tests 9 4.2.5 Deviations from Lot Acceptance Tests 9 4.3.1 Dimension Check 9 4.3.2 Weight 9			<u>Page</u>
1.2 Component Type Variants and Range of Components 1.3 Maximum Ratings 1.4 Parameter Derating Information 1.5 Physical Dimensions 1.6 Functional Diagram 1.6 Functional Diagram 1.7 ERMS, DEFINITIONS, ABBREVIATIONS, SYMBOLS AND UNITS 1.8 REQUIREMENTS 1.9 REQUIREMENTS 1.1 General 1.2 Deviations from Generic Specification 1.2 Deviations from Generic Specification 1.2 Deviations from Special In-process Controls 1.2 Deviations from Special In-process Controls 1.2 Deviations from Special In-process Controls 1.2 Deviations from Burn-in and Electrical Measurements 1.2 Deviations from Qualification Tests 1.2 Deviations from Qualification Tests 1.2 Deviations from Qualification Tests 1.2 Deviations from Unit Acceptance Tests 1.3 Dimension Check 1.3 Deviations from Controls 1.3 Mechanical Requirements 1.3 Robustness of Terminations 1.3 Robustness of Terminations 1.3 Robustness of Terminations 1.3 Accessories 1.4 Materials and Finishes 1.5 Traceability Information 1.5 Lead Identification 1.6 Electrical Measurements at Room Temperature 1.6 Electrical Measurements at Room Temperature 1.6 Electrical Measurements at High and Low Temperatures 1.7 Parameter Drift Values 1.8 Environmental and Environments 1.9 Electrical Measurements at High and Low Temperatures 1.9 Electrical Circuits for Electrical Measurements 1.0 Electrical Measurements at High and Low Temperatures 1.1 Parameter Drift Values 1.2 Lead Measurements at High and Low Temperatures 1.3 Electrical Measurements at High and Low Temperatures 1.4 Electrical Measurements at High and Low Temperatures 1.5 Traceability Information 1 Parameter Drift Values 1.7 Burn-in Tests 1.8 Environmental and Endurance Tests 1.8 Environmental and Endurance Tests 1.8 Environmental and Endurance Tests 1.8 Environmental and Inspections on Completion of Environmental Tests 1.8 Environments and Inspections on Completion of Environmental Tests 1.8 Environments and Inspections on Completion of Environmental Tests 1.8 Measurements and Inspections on Completion of Environmental Tests 1.8 Measurement	1.	GENERAL	
1.2 Component Type Variants and Range of Components 1.3 Maximum Ratings 1.4 Parameter Derating Information 1.5 Physical Dimensions 1.6 Functional Diagram 1.6 Functional Diagram 1.7 ERMS, DEFINITIONS, ABBREVIATIONS, SYMBOLS AND UNITS 1.8 REQUIREMENTS 1.9 REQUIREMENTS 1.1 General 1.2 Deviations from Generic Specification 1.2 Deviations from Generic Specification 1.2 Deviations from Special In-process Controls 1.2 Deviations from Special In-process Controls 1.2 Deviations from Special In-process Controls 1.2 Deviations from Burn-in and Electrical Measurements 1.2 Deviations from Qualification Tests 1.2 Deviations from Qualification Tests 1.2 Deviations from Qualification Tests 1.2 Deviations from Unit Acceptance Tests 1.3 Dimension Check 1.3 Deviations from Controls 1.3 Mechanical Requirements 1.3 Robustness of Terminations 1.3 Robustness of Terminations 1.3 Robustness of Terminations 1.3 Accessories 1.4 Materials and Finishes 1.5 Traceability Information 1.5 Lead Identification 1.6 Electrical Measurements at Room Temperature 1.6 Electrical Measurements at Room Temperature 1.6 Electrical Measurements at High and Low Temperatures 1.7 Parameter Drift Values 1.8 Environmental and Environments 1.9 Electrical Measurements at High and Low Temperatures 1.9 Electrical Circuits for Electrical Measurements 1.0 Electrical Measurements at High and Low Temperatures 1.1 Parameter Drift Values 1.2 Lead Measurements at High and Low Temperatures 1.3 Electrical Measurements at High and Low Temperatures 1.4 Electrical Measurements at High and Low Temperatures 1.5 Traceability Information 1 Parameter Drift Values 1.7 Burn-in Tests 1.8 Environmental and Endurance Tests 1.8 Environmental and Endurance Tests 1.8 Environmental and Endurance Tests 1.8 Environmental and Inspections on Completion of Environmental Tests 1.8 Environments and Inspections on Completion of Environmental Tests 1.8 Environments and Inspections on Completion of Environmental Tests 1.8 Measurements and Inspections on Completion of Environmental Tests 1.8 Measurement			
1.3 Maximum Ratings 5 1.4 Parameter Derating Information 5 1.5 Physical Dimensions 5 1.6 Functional Diagram 5 2. APPLICABLE DOCUMENTS 5 3. TERMS, DEFINITIONS, ABBREVIATIONS, SYMBOLS AND UNITS 5 4. REQUIREMENTS 9 4.1 General 9 4.2 Deviations from Generic Specification 9 4.2.1 Deviations from Generic Specification 9 4.2.1 Deviations from Final Production Tests 9 4.2.2 Deviations from Final Production Tests 9 4.2.3 Deviations from Burnin and Electrical Measurements 9 4.2.4 Deviations from Lot Acceptance Tests 9 4.2.5 Deviations from Lot Acceptance Tests 9 4.3.1 Dimension Check 9 4.3.2 Weight 9 4.3.3 Robustness of Terminations 10 4.3.4 Solderability 10 4.3.5 Seal Test <td></td> <td>·</td> <td></td>		·	
1.4 Parameter Deraiting Information 5 1.5 Physical Dimensions 5 5 Functional Diagram 5 2. APPLICABLE DOCUMENTS 5 3. TERMS, DEFINITIONS, ABBREVIATIONS, SYMBOLS AND UNITS 5 4. REQUIREMENTS 9 4.1 General 9 4.2 Deviations from Generic Specification 9 4.2.1 Deviations from Special In-process Controls 9 4.2.2 Deviations from Final Production Tests 9 4.2.3 Deviations from Burn-in and Electrical Measurements 9 4.2.4 Deviations from Durn-in and Electrical Measurements 9 4.2.5 Deviations from Durn-in and Electrical Measurements 9 4.2.6 Deviations from Durn-in and Electrical Measurements 9 4.3.1 Dimension Check 9 4.3.2 Weight 9 4.3.3 Robustness of Terminations 10 4.3.4 Soliderability 10 4.3.5 Seal Test 10 4.4.1 Case 10 4.5.2 Lead Material and Finish 10 4.5.1 General 10 4.5.2 Lead Identification 11 <t< td=""><td></td><td>· · · · · · · · · · · · · · · · · · ·</td><td></td></t<>		· · · · · · · · · · · · · · · · · · ·	
1.5 Physical Dimensions 5 1.6 Functional Diagram 5 2. APPLICABLE DOCUMENTS 5 3. TERMS, DEFINITIONS, ABBREVIATIONS, SYMBOLS AND UNITS 5 4. REQUIREMENTS 9 4.1 General 9 4.2.1 Deviations from Generic Specification 9 4.2.1 Deviations from Special In-process Controls 9 4.2.2 Deviations from Final Production Tests 9 4.2.3 Deviations from Final Production Tests 9 4.2.4 Deviations from Dural in and Electrical Measurements 9 4.2.5 Deviations from Lot Acceptance Tests 9 4.3 Mechanical Requirements 9 4.3.1 Dimension Check 9 4.3.2 Weight 9 4.3.3 Robustness of Terminations 10 4.3.4 Solderability 10 4.3.5 Seal Test 10 4.4 Materials and Finishes 10 4.4.1 Case 10 4.5.2 Lead Material and Finish 10 4.5.3 Accessories 10 4.5.1 General 10 4.5.2 Each Identification 11			
1.6 Functional Diagram 2. APPLICABLE DOCUMENTS 3. TERMS, DEFINITIONS, ABBREVIATIONS, SYMBOLS AND UNITS 4. REQUIREMENTS 4. REQUIREMENTS 4.1 General 4.2.1 Deviations from Generic Specification 4.2.1 Deviations from Special In-process Controls 4.2.2 Deviations from Special In-process Controls 4.2.3 Deviations from Burn-in and Electrical Measurements 4.2.4 Deviations from Dualification Tests 4.2.5 Deviations from Dualification Tests 4.3 Mechanical Requirements 4.3 Solderability 4.3 Solderability 4.3 Solderability 4.4 Materials and Finishes 4.4 Materials and Finishes 4.4.1 Case 4.4.2 Lead Material and Finish 4.5 General 4.5 General 4.5 General 4.5 Lead Identification 4.5 Marking 4.5 General 4.5 Traceability Information 4.5 Traceability Information 4.6 Electrical Measurements 4.6 Electrical Measurements 4.6 Electrical Measurements 4.7 Burn-in Tests 4.8 Conditions for Burn-in 4.8 Environmental and Endurance Tests 4.8 Measurements and Inspections on Completion of Environmental Tests 4.8 Measurements and Inspections on Completion of Environmental Tests 4.8 Measurements and Inspections on Completion of Environmental Tests 4.8 Measurements and Inspections on Completion of Environmental Tests 4.8 Measurements and Inspections on Completion of Environmental Tests 4.8 Measurements and Inspections on Completion of Environmental Tests 4.8 Measurements and Inspections on Completion of Environmental Tests 4.8 Measurements and Inspections on Completion of Environmental Tests 4.8 Measurements and Inspections on Completion of Environmental Tests 4.8 Measurements and Inspections on Completion of Environmental Tests 4.8 Measurements and Inspections on Completion of Environmental Tests			
2. APPLICABLE DOCUMENTS 3. TERMS, DEFINITIONS, ABBREVIATIONS, SYMBOLS AND UNITS 5. REQUIREMENTS 4. REQUIREMENTS 4.1 General 4.2 Deviations from Generic Specification 4.2.1 Deviations from Special In-process Controls 4.2.2 Deviations from Final Production Tests 4.2.3 Deviations from Final Production Tests 4.2.4 Deviations from Burn-in and Electrical Measurements 4.2.5 Deviations from Doulification Tests 4.2.6 Deviations from Lot Acceptance Tests 4.3 Mechanical Requirements 4.3.1 Dimension Check 4.3.2 Weight 4.3.3 Robustness of Terminations 4.3.4 Solderability 4.3.5 Seal Test 4.4 Materials and Finishes 4.4.1 Case 4.4.2 Lead Material and Finish 4.5 Accessories 4.5 Marking 4.5 Marking 4.5 Marking 4.5 Lead Identification 4.5 Marking 4.5 Traceability Information 4.5 Electrical Measurements at Room Temperature 4.6 Electrical Measurements at Room Temperature 4.6.1 Electrical Measurements at High and Low Temperature 4.6.2 Electrical Measurements at High and Low Temperature 4.6.3 Circuits for Electrical Measurements 4.7 Burn-in Tests 4.8 Environmental and Endurance Tests 4.8.1 Measurements and Inspections on Completion of Environmental Tests 4.8.2 Measurements and Inspections on Completion of Environmental Tests 4.8.3 Measurements and Inspections on Completion of Endurance Tests 4.8.3 Measurements and Inspections on Completion of Endurance Tests 4.8.3 Measurements and Inspections on Completion of Endurance Tests 4.8.4 Measurements and Inspections on Completion of Endurance Tests 4.8.3 Measurements and Inspections on Completion of Endurance Tests 4.8.4 Measurements and Inspections on Completion of Endurance Tests 4.8.3 Measurements and Inspections on Completion of Endurance Tests 4.8.4 Conditions for Operating Life Tests			
3. TERMS, DEFINITIONS, ABBREVIATIONS, SYMBOLS AND UNITS 4. REQUIREMENTS 4.1 General 4.2 Deviations from Generic Specification 4.2.1 Deviations from Special In-process Controls 4.2.2 Deviations from Special In-process Controls 4.2.3 Deviations from Burn-in and Electrical Measurements 4.2.4 Deviations from Burn-in and Electrical Measurements 4.2.5 Deviations from Durn-in and Electrical Measurements 4.2.6 Deviations from Unit Acceptance Tests 4.3 Mechanical Requirements 4.3.1 Dimension Check 4.3 Mechanical Requirements 4.3.2 Weight 4.3.3 Robustness of Terminations 4.3.4 Solderability 4.3.5 Seal Test 4.4 Materials and Finishes 4.4.1 Case 4.4.2 Lead Material and Finish 4.4.3 Accessories 4.4.4 Marking 4.5.1 General 4.5.1 General 4.5.2 Lead Identification 4.5.3 The SCC Component Number 4.5.3 The SCC Component Number 4.5.4 Electrical Characteristics and Ratings 4.5.5 Traceability Information 4.6.6 Electrical Measurements at Room Temperature 4.6.7 Burn-in Tests 4.7 Burn-in Tests 4.7.1 Parameter Drift Values 4.7.2 Conditions for Burn-in 4.8 Environmental and Endurance Tests 4.8.3 Measurements and Inspections on Completion of Environmental Tests 4.8.3 Measurements and Inspections on Completion of Environmental Tests 4.8.3 Measurements and Inspections on Completion of Environmental Tests 4.8.3 Measurements and Inspections on Completion of Environmental Tests 4.8.3 Measurements and Inspections on Completion of Environmental Tests 4.8.4 Measurements and Inspections on Completion of Environmental Tests 4.8.3 Measurements and Inspections on Completion of Environmental Tests 4.8.3 Measurements and Inspections on Completion of Environmental Tests 4.8.4 Conditions for Operating Life Tests	1.6	Functional Diagram	5
4.1 REQUIREMENTS 9 4.1 General 9 4.2.1 Deviations from Generic Specification 9 4.2.2.1 Deviations from Special In-process Controls 9 4.2.2.2 Deviations from Burn-in and Electrical Measurements 9 4.2.3.1 Deviations from Qualification Tests 9 4.2.5 Deviations from Lot Acceptance Tests 9 4.3.1 Dimension Check 9 4.3.2 Weight 9 4.3.3.1 Dimension Check 9 4.3.2 Weight 9 4.3.3.1 Robustness of Terminations 10 4.3.4 Solderability 10 4.3.5 Seal Test 10 4.4 Materials and Finishes 10 4.4.1 Case 10 4.4.2 Lead Material and Finish 10 4.5.1 General 10 4.5.2 Lead Identification 11 4.5.3 The SCC Component Number 11 4.5.4	2.	APPLICABLE DOCUMENTS	5
4.1 General 9 4.2 Deviations from Generic Specification 9 4.2.1 Deviations from Special In-process Controls 9 4.2.2 Deviations from Final Production Tests 9 4.2.3 Deviations from Burn-in and Electrical Measurements 9 4.2.4 Deviations from Qualification Tests 9 4.2.5 Deviations from Lot Acceptance Tests 9 4.3 Mechanical Requirements 9 4.3.1 Dimension Check 9 4.3.2 Weight 9 4.3.3 Robustness of Terminations 10 4.3.4 Solderability 10 4.3.5 Seal Test 10 4.4.1 Case 10 4.4.2 Lead Material and Finishes 10 4.4.1 Case 10 4.4.2 Lead Material and Finish 10 4.5.1 General 10 4.5.2 Lead Identification 11 4.5.3 Traceability Information 11 4.5.5 Traceability Information 12 4.6.1<	3.	TERMS, DEFINITIONS, ABBREVIATIONS, SYMBOLS AND UNITS	5
4.2.1 Deviations from Generic Specification 9 4.2.1 Deviations from Special In-process Controls 9 4.2.2 Deviations from Final Production Tests 9 4.2.3 Deviations from Burn-in and Electrical Measurements 9 4.2.4 Deviations from Lot Acceptance Tests 9 4.2.5 Deviations from Lot Acceptance Tests 9 4.3.1 Dimension Check 9 4.3.2 Weight 9 4.3.3 Robustness of Terminations 10 4.3.4 Solderability 10 4.3.5 Seal Test 10 4.4 Materials and Finishes 10 4.4.1 Case 10 4.4.2 Lead Material and Finish 10 4.5.1 General 10 4.5.2 Lead Identification 11 4.5.3 The SCC Component Number 11 4.5.4 Electrical Characteristics and Ratings 11 4.5.5 Traceability Information 12 4.6.1 Electrical Measure	4.	REQUIREMENTS	9
4.2.1 Deviations from Generic Specification 9 4.2.1 Deviations from Special In-process Controls 9 4.2.2 Deviations from Final Production Tests 9 4.2.3 Deviations from Burn-in and Electrical Measurements 9 4.2.4 Deviations from Lot Acceptance Tests 9 4.2.5 Deviations from Lot Acceptance Tests 9 4.3.1 Dimension Check 9 4.3.2 Weight 9 4.3.3 Robustness of Terminations 10 4.3.4 Solderability 10 4.3.5 Seal Test 10 4.4 Materials and Finishes 10 4.4.1 Case 10 4.4.2 Lead Material and Finish 10 4.5.1 General 10 4.5.2 Lead Identification 11 4.5.3 The SCC Component Number 11 4.5.4 Electrical Characteristics and Ratings 11 4.5.5 Traceability Information 12 4.6.1 Electrical Measure	4.1	General	9
4.2.1Deviations from Special In-process Controls94.2.2Deviations from Burn-in and Electrical Measurements94.2.4Deviations from Qualification Tests94.2.5Deviations from Lot Acceptance Tests94.2.6Deviations from Lot Acceptance Tests94.3.1Dirmension Check94.3.2Weight94.3.3Robustness of Terminations104.3.4Solderability104.3.5Seal Test104.4Materials and Finishes104.4.1Case104.4.2Lead Material and Finish104.5Marking104.5.1General104.5.2Lead Identification114.5.3The SCC Component Number114.5.4Electrical Characteristics and Ratings114.5.5Traceability Information124.6Electrical Measurements at Room Temperature124.6.2Electrical Measurements at High and Low Temperatures124.6.3Circuits for Electrical Measurements124.7Burn-in Tests124.7.1Parameter Drift Values124.7.2Conditions for Burn-in124.8Measurements and Inspections on Completion of Environmental Tests164.8.1Measurements and Inspections on Completion of Environmental Tests164.8.3Measurements and Inspections on Completion of Environmental Tests164.8.4Measur		Deviations from Generic Specification	9
4.2.2 Deviations from Final Production Tests 9 4.2.3 Deviations from Burn-in and Electrical Measurements 9 4.2.4 Deviations from Lot Acceptance Tests 9 4.2.5 Deviations from Lot Acceptance Tests 9 4.3.1 Dimension Check 9 4.3.2 Weight 9 4.3.3 Robustness of Terminations 10 4.3.4 Solderability 10 4.3.5 Seal Test 10 4.4 Materials and Finishes 10 4.4.1 Case 10 4.4.2 Lead Material and Finishes 10 4.4.1 Case 10 4.4.2 Lead Material and Finish 10 4.5.3 Marking 10 4.5.4 Lead Identification 11 4.5.1 General 10 4.5.2 Lead Identification 11 4.5.3 The SCC Component Number 11 4.5.4 Electrical Measurements 12 4.6.1 Electrical Measurements 12 4.6.2 Electrical Measu	4.2.1	·	9
4.2.3 Deviations from Burn-in and Electrical Measurements 9 4.2.4 Deviations from Qualification Tests 9 4.2.5 Deviations from Lot Acceptance Tests 9 4.3.1 Dimension Check 9 4.3.2 Weight 9 4.3.3 Robustness of Terminations 10 4.3.4 Solderability 10 4.3.5 Seal Test 10 4.4 Materials and Finishes 10 4.4.1 Case 10 4.4.2 Lead Material and Finish 10 4.4.3 Accessories 10 4.5 Marking 10 4.5.1 General 10 4.5.2 Lead Identification 11 4.5.3 The SCC Component Number 11 4.5.4 Electrical Characteristics and Ratings 11 4.5.5 Traceability Information 12 4.6.1 Electrical Measurements at Hoom Temperature 12 4.6.2 Electrical Measurements at High and Low Temperatures 12 4.6.3 Circuits for Electrical Measurements 12 <td></td> <td></td> <td>9</td>			9
4.2.4Deviations from Qualification Tests94.2.5Deviations from Lot Acceptance Tests94.3Mechanical Requirements94.3.1Dimension Check94.3.2Weight94.3.3Robustness of Terminations104.3.4Solderability104.3.5Seal Test104.4Materials and Finishes104.4.1Case104.4.2Lead Material and Finish104.4.3Accessories104.5Marking104.5.1General104.5.2Lead Identification114.5.3The SCC Component Number114.5.4Electrical Characteristics and Ratings114.5.5Traceability Information124.6Electrical Measurements124.6.1Electrical Measurements at Room Temperature124.6.2Electrical Measurements at High and Low Temperatures124.6.3Circuits for Electrical Measurements124.7.1Parameter Drift Values124.7.2Conditions for Burn-in124.7.3Electrical Circuit for Burn-in124.8Environmental and Endurance Tests164.8.1Measurements and Inspections on Completion of Endurance Tests164.8.2Measurements and Inspections on Completion of Endurance Tests164.8.3Measurements and Inspections on Completion of Endurance Tests16		Deviations from Burn-in and Electrical Measurements	
4.3.1Mechanical Requirements94.3.1Dimension Check94.3.2Weight94.3.3Robustness of Terminations104.3.4Solderability104.3.5Seal Test104.4Materials and Finishes104.4.1Case104.4.2Lead Material and Finish104.4.3Accessories104.5.1General104.5.2Lead Identification114.5.3The SCC Component Number114.5.4Electrical Characteristics and Ratings114.5.5Traceability Information124.6Electrical Measurements124.6.1Electrical Measurements at High and Low Temperatures124.6.2Electrical Measurements at High and Low Temperatures124.6.3Circuits for Electrical Measurements124.7Burn-in Tests124.7.1Parameter Drift Values124.7.2Conditions for Burn-in124.8Environmental and Endurance Tests164.8.1Measurements and Inspections on Completion of Environmental Tests164.8.2Measurements and Inspections on Completion of Endurance Tests164.8.3Measurements and Inspections on Completion of Endurance Tests164.8.4Conditions for Operating Life Tests16	4.2.4	Deviations from Qualification Tests	
4.3.1 Dimension Check 9 4.3.2 Weight 9 4.3.3 Robustness of Terminations 10 4.3.4 Solderability 10 4.9.5 Seal Test 10 4.4 Materials and Finishes 10 4.4.1 Case 10 4.4.2 Lead Material and Finish 10 4.4.3 Accessories 10 4.5.5 Marking 10 4.5.1 General 10 4.5.2 Lead Identification 11 4.5.3 The SCC Component Number 11 4.5.4 Electrical Characteristics and Ratings 11 4.5.5 Traceability Information 12 4.6 Electrical Measurements 12 4.6.1 Electrical Measurements at Room Temperature 12 4.6.2 Electrical Measurements at High and Low Temperatures 12 4.6.3 Circuits for Electrical Measurements 12 4.7.1 Parameter Drift Values 12 4.7.2 Conditions for Burn-in 12 4.7.2 <td< td=""><td>4.2.5</td><td>Deviations from Lot Acceptance Tests</td><td>9</td></td<>	4.2.5	Deviations from Lot Acceptance Tests	9
4.3.2 Weight 9 4.3.3 Robustness of Terminations 10 4.3.4 Solderability 10 4.3.5 Seal Test 10 4.4 Materials and Finishes 10 4.4.1 Case 10 4.4.2 Lead Material and Finish 10 4.4.3 Accessories 10 4.5 Marking 10 4.5.1 General 10 4.5.2 Lead Identification 11 4.5.3 The SCC Component Number 11 4.5.4 Electrical Characteristics and Ratings 11 4.5.5 Traceability Information 12 4.6 Electrical Measurements 12 4.6.1 Electrical Measurements at Room Temperature 12 4.6.2 Electrical Measurements at High and Low Temperatures 12 4.6.3 Circuits for Electrical Measurements 12 4.7.1 Parameter Drift Values 12 4.7.2 Conditions for Burn-in 12 4.7.3 Electrical Circuit for Burn-in 12 4.8.1<	4.3	Mechanical Requirements	9
4.3.3 Robustness of Terminations 10 4.3.4 Solderability 10 4.3.5 Seal Test 10 4.4 Materials and Finishes 10 4.4.1 Case 10 4.4.2 Lead Material and Finish 10 4.4.3 Accessories 10 4.5 Marking 10 4.5.1 General 10 4.5.2 Lead Identification 11 4.5.3 The SCC Component Number 11 4.5.4 Electrical Characteristics and Ratings 11 4.5.5 Traceability Information 12 4.6 Electrical Measurements 12 4.6.1 Electrical Measurements at Room Temperature 12 4.6.2 Electrical Measurements at High and Low Temperatures 12 4.6.3 Circuits for Electrical Measurements 12 4.7.1 Parameter Drift Values 12 4.7.2 Conditions for Burn-in 12 4.7.3 Electrical Circuit for Burn-in 12 4.8.1 Measurements and Inspections on Completion of Environmental Test	4.3.1	Dimension Check	9
4.3.4 Solderability 10 4.3.5 Seal Test 10 4.4 Materials and Finishes 10 4.4.1 Case 10 4.4.2 Lead Material and Finish 10 4.4.3 Accessories 10 4.5 Marking 10 4.5.1 General 10 4.5.2 Lead Identification 11 4.5.3 The SCC Component Number 11 4.5.4 Electrical Characteristics and Ratings 11 4.5.5 Traceability Information 12 4.6 Electrical Measurements 12 4.6.1 Electrical Measurements at Room Temperature 12 4.6.2 Electrical Measurements at High and Low Temperatures 12 4.6.3 Circuits for Electrical Measurements 12 4.7 Burn-in Tests 12 4.7.1 Parameter Drift Values 12 4.7.2 Conditions for Burn-in 12 4.8 Environmental and Endurance Tests 16 4.8.1 Measurements and Inspections on Completion of Environmental Tests <	4.3.2	Weight	9
4.3.5 Seal Test 10 4.4 Materials and Finishes 10 4.4.1 Case 10 4.4.2 Lead Material and Finish 10 4.4.3 Accessories 10 4.5 Marking 10 4.5.1 General 10 4.5.2 Lead Identification 11 4.5.3 The SCC Component Number 11 4.5.4 Electrical Characteristics and Ratings 11 4.5.5 Traceability Information 12 4.6 Electrical Measurements 12 4.6.1 Electrical Measurements at Room Temperature 12 4.6.2 Electrical Measurements at High and Low Temperatures 12 4.6.3 Circuits for Electrical Measurements 12 4.7 Burn-in Tests 12 4.7.1 Parameter Drift Values 12 4.7.2 Conditions for Burn-in 12 4.8 Environmental and Endurance Tests 16 4.8.1 Measurements and Inspections on Completion of Environmental Tests 16 4.8.2 Measurements and Inspectio	4.3.3	Robustness of Terminations	10
4.4.1 Case 10 4.4.2 Lead Material and Finish 10 4.4.3 Accessories 10 4.5. Marking 10 4.5.1 General 10 4.5.2 Lead Identification 11 4.5.3 The SCC Component Number 11 4.5.4 Electrical Characteristics and Ratings 11 4.5.5 Traceability Information 12 4.6 Electrical Measurements 12 4.6.1 Electrical Measurements at Room Temperature 12 4.6.2 Electrical Measurements at High and Low Temperatures 12 4.6.3 Circuits for Electrical Measurements 12 4.7 Burn-in Tests 12 4.7.1 Parameter Drift Values 12 4.7.2 Conditions for Burn-in 12 4.7.3 Electrical Circuit for Burn-in 12 4.8 Environmental and Endurance Tests 16 4.8.1 Measurements and Inspections on Completion of Environmental Tests 16 4.8.2 Measurements and Inspections at Intermediate Points during Endurance Tests 16 4.8.3 Measurements and Inspections on Completion of Endurance Tests 16 4.8.4 Conditions for Operating Life Tests 16	4.3.4	Solderability	10
4.4.1Case104.4.2Lead Material and Finish104.4.3Accessories104.5Marking104.5.1General104.5.2Lead Identification114.5.3The SCC Component Number114.5.4Electrical Characteristics and Ratings114.5.5Traceability Information124.6Electrical Measurements124.6.1Electrical Measurements at Room Temperature124.6.2Electrical Measurements at High and Low Temperatures124.6.3Circuits for Electrical Measurements124.7Burn-in Tests124.7.1Parameter Drift Values124.7.2Conditions for Burn-in124.7.3Electrical Circuit for Burn-in124.8Environmental and Endurance Tests164.8.1Measurements and Inspections on Completion of Environmental Tests164.8.2Measurements and Inspections at Intermediate Points during Endurance Tests164.8.3Measurements and Inspections on Completion of Endurance Tests164.8.4Conditions for Operating Life Tests16	4.3.5	Seal Test	10
4.4.2Lead Material and Finish104.4.3Accessories104.5Marking104.5.1General104.5.2Lead Identification114.5.3The SCC Component Number114.5.4Electrical Characteristics and Ratings114.5.5Traceability Information124.6Electrical Measurements124.6.1Electrical Measurements at Room Temperature124.6.2Electrical Measurements at High and Low Temperatures124.6.3Circuits for Electrical Measurements124.7Burn-in Tests124.7.1Parameter Drift Values124.7.2Conditions for Burn-in124.7.3Electrical Circuit for Burn-in124.8Environmental and Endurance Tests164.8.1Measurements and Inspections on Completion of Environmental Tests164.8.2Measurements and Inspections at Intermediate Points during Endurance Tests164.8.3Measurements and Inspections on Completion of Endurance Tests164.8.4Conditions for Operating Life Tests16	4.4	Materials and Finishes	10
4.4.3Accessories104.5Marking104.5.1General104.5.2Lead Identification114.5.3The SCC Component Number114.5.4Electrical Characteristics and Ratings114.5.5Traceability Information124.6Electrical Measurements124.6.1Electrical Measurements at Room Temperature124.6.2Electrical Measurements at High and Low Temperatures124.6.3Circuits for Electrical Measurements124.7Burn-in Tests124.7.1Parameter Drift Values124.7.2Conditions for Burn-in124.7.3Electrical Circuit for Burn-in124.7.3Electrical Circuit for Burn-in124.8Environmental and Endurance Tests164.8.1Measurements and Inspections on Completion of Environmental Tests164.8.2Measurements and Inspections at Intermediate Points during Endurance Tests164.8.3Measurements and Inspections on Completion of Endurance Tests164.8.4Conditions for Operating Life Tests16	4.4.1	Case	10
4.5 Marking 4.5.1 General 4.5.2 Lead Identification 4.5.3 The SCC Component Number 4.5.4 Electrical Characteristics and Ratings 4.5.5 Traceability Information 4.6 Electrical Measurements 4.6.1 Electrical Measurements at Room Temperature 4.6.2 Electrical Measurements at High and Low Temperatures 4.6.3 Circuits for Electrical Measurements 4.7 Burn-in Tests 4.7.1 Parameter Drift Values 4.7.2 Conditions for Burn-in 4.7.3 Electrical Circuit for Burn-in 4.8 Environmental and Endurance Tests 4.8.1 Measurements and Inspections on Completion of Environmental Tests 4.8.2 Measurements and Inspections on Completion of Endurance Tests 4.8.3 Measurements and Inspections on Completion of Endurance Tests 4.8.4 Conditions for Operating Life Tests 4.8.5 The SCC Component Incompletion of Endurance Tests 4.8.6 Conditions for Operating Life Tests 4.8.7 Conditions for Operating Life Tests 4.8.8 The SCC Component Incompletion of Endurance Tests 4.8.9 Conditions for Operating Life Tests 4.8.1 Conditions for Operating Life Tests	4.4.2	Lead Material and Finish	10
4.5.1 General 4.5.2 Lead Identification 4.5.3 The SCC Component Number 4.5.4 Electrical Characteristics and Ratings 4.5.5 Traceability Information 4.6 Electrical Measurements 4.6.1 Electrical Measurements at Room Temperature 4.6.2 Electrical Measurements at High and Low Temperatures 4.6.3 Circuits for Electrical Measurements 4.7 Burn-in Tests 4.7 Burn-in Tests 4.7.1 Parameter Drift Values 4.7.2 Conditions for Burn-in 4.7.3 Electrical Circuit for Burn-in 4.8 Environmental and Endurance Tests 4.8.1 Measurements and Inspections on Completion of Environmental Tests 4.8.2 Measurements and Inspections on Completion of Endurance Tests 4.8.3 Measurements and Inspections on Completion of Endurance Tests 4.8.4 Conditions for Operating Life Tests 4.8.5 Test Summary 4.8.6 Conditions for Operating Life Tests 4.8.7 Conditions for Operating Life Tests 4.8.8 Conditions for Operating Life Tests	4.4.3	Accessories	10
4.5.1 General 4.5.2 Lead Identification 4.5.3 The SCC Component Number 4.5.4 Electrical Characteristics and Ratings 4.5.5 Traceability Information 4.6 Electrical Measurements 4.6.1 Electrical Measurements at Room Temperature 4.6.2 Electrical Measurements at High and Low Temperatures 4.6.3 Circuits for Electrical Measurements 4.7 Burn-in Tests 4.7 Parameter Drift Values 4.7.1 Parameter Drift Values 4.7.2 Conditions for Burn-in 4.7.3 Electrical Circuit for Burn-in 4.8 Environmental and Endurance Tests 4.8.1 Measurements and Inspections on Completion of Environmental Tests 4.8.2 Measurements and Inspections on Completion of Endurance Tests 4.8.3 Measurements and Inspections on Completion of Endurance Tests 4.8.4 Conditions for Operating Life Tests 4.8.5 The SCC Component Number 4.7.6 Electrical Circuit for Burn-in 4.8 Environmental and Endurance Tests 4.8.1 Measurements and Inspections at Intermediate Points during Endurance Tests 4.8.3 Measurements and Inspections on Completion of Endurance Tests 4.8.4 Conditions for Operating Life Tests	4.5	Marking	10
4.5.3 The SCC Component Number 4.5.4 Electrical Characteristics and Ratings 4.5.5 Traceability Information 4.6 Electrical Measurements 4.6.1 Electrical Measurements at Room Temperature 4.6.2 Electrical Measurements at High and Low Temperatures 4.6.3 Circuits for Electrical Measurements 4.7 Burn-in Tests 4.7.1 Parameter Drift Values 4.7.2 Conditions for Burn-in 4.7.3 Electrical Circuit for Burn-in 4.8 Environmental and Endurance Tests 4.8.1 Measurements and Inspections on Completion of Environmental Tests 4.8.2 Measurements and Inspections on Completion of Endurance Tests 4.8.3 Measurements and Inspections on Completion of Endurance Tests 4.8.4 Conditions for Operating Life Tests 16	4.5.1	General	10
4.5.4 Electrical Characteristics and Ratings 4.5.5 Traceability Information 4.6 Electrical Measurements 4.6.1 Electrical Measurements at Room Temperature 4.6.2 Electrical Measurements at High and Low Temperatures 4.6.3 Circuits for Electrical Measurements 4.7 Burn-in Tests 4.7.1 Parameter Drift Values 4.7.2 Conditions for Burn-in 4.7.3 Electrical Circuit for Burn-in 4.8 Environmental and Endurance Tests 4.8.1 Measurements and Inspections on Completion of Environmental Tests 4.8.2 Measurements and Inspections on Completion of Endurance Tests 4.8.3 Measurements and Inspections on Completion of Endurance Tests 4.8.4 Conditions for Operating Life Tests 16	4.5.2	Lead Identification	11
4.5.5 Traceability Information 4.6 Electrical Measurements 4.6.1 Electrical Measurements at Room Temperature 4.6.2 Electrical Measurements at High and Low Temperatures 4.6.3 Circuits for Electrical Measurements 4.7 Burn-in Tests 4.7.1 Parameter Drift Values 4.7.2 Conditions for Burn-in 4.7.3 Electrical Circuit for Burn-in 4.8 Environmental and Endurance Tests 4.8.1 Measurements and Inspections on Completion of Environmental Tests 4.8.2 Measurements and Inspections on Completion of Endurance Tests 4.8.3 Measurements and Inspections on Completion of Endurance Tests 4.8.4 Conditions for Operating Life Tests 4.8.5 Traceability Information 12 12 12 12 13 14 15 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	4.5.3	The SCC Component Number	11
4.5.5Traceability Information124.6Electrical Measurements124.6.1Electrical Measurements at Room Temperature124.6.2Electrical Measurements at High and Low Temperatures124.6.3Circuits for Electrical Measurements124.7Burn-in Tests124.7.1Parameter Drift Values124.7.2Conditions for Burn-in124.7.3Electrical Circuit for Burn-in124.8Environmental and Endurance Tests164.8.1Measurements and Inspections on Completion of Environmental Tests164.8.2Measurements and Inspections at Intermediate Points during Endurance Tests164.8.3Measurements and Inspections on Completion of Endurance Tests164.8.4Conditions for Operating Life Tests16	4.5.4	Electrical Characteristics and Ratings	11
4.6.1 Electrical Measurements at Room Temperature 4.6.2 Electrical Measurements at High and Low Temperatures 12 4.6.3 Circuits for Electrical Measurements 12 4.7 Burn-in Tests 12 4.7.1 Parameter Drift Values 12 4.7.2 Conditions for Burn-in 12 4.7.3 Electrical Circuit for Burn-in 12 4.8 Environmental and Endurance Tests 16 4.8.1 Measurements and Inspections on Completion of Environmental Tests 16 4.8.2 Measurements and Inspections on Completion of Endurance Tests 16 4.8.3 Measurements and Inspections on Completion of Endurance Tests 16 4.8.4 Conditions for Operating Life Tests 16	4.5.5		12
4.6.2 Electrical Measurements at High and Low Temperatures 4.6.3 Circuits for Electrical Measurements 4.7 Burn-in Tests 4.7.1 Parameter Drift Values 4.7.2 Conditions for Burn-in 4.7.3 Electrical Circuit for Burn-in 4.8 Environmental and Endurance Tests 4.8.1 Measurements and Inspections on Completion of Environmental Tests 4.8.2 Measurements and Inspections at Intermediate Points during Endurance Tests 4.8.3 Measurements and Inspections on Completion of Endurance Tests 4.8.4 Conditions for Operating Life Tests 4.8.5 Information Inspection of Endurance Tests 4.8.6 Conditions for Operating Life Tests 4.8.7 Conditions for Operating Life Tests	4.6	Electrical Measurements	12
4.6.3 Circuits for Electrical Measurements 4.7 Burn-in Tests 4.7.1 Parameter Drift Values 4.7.2 Conditions for Burn-in 4.7.3 Electrical Circuit for Burn-in 4.8 Environmental and Endurance Tests 4.8.1 Measurements and Inspections on Completion of Environmental Tests 4.8.2 Measurements and Inspections at Intermediate Points during Endurance Tests 4.8.3 Measurements and Inspections on Completion of Endurance Tests 4.8.4 Conditions for Operating Life Tests 16	4.6.1	Electrical Measurements at Room Temperature	12
4.7 Burn-in Tests 4.7.1 Parameter Drift Values 4.7.2 Conditions for Burn-in 4.7.3 Electrical Circuit for Burn-in 4.8 Environmental and Endurance Tests 4.8.1 Measurements and Inspections on Completion of Environmental Tests 4.8.2 Measurements and Inspections at Intermediate Points during Endurance Tests 4.8.3 Measurements and Inspections on Completion of Endurance Tests 4.8.4 Conditions for Operating Life Tests 16	4.6.2	Electrical Measurements at High and Low Temperatures	12
4.7.1 Parameter Drift Values 4.7.2 Conditions for Burn-in 4.7.3 Electrical Circuit for Burn-in 4.8 Environmental and Endurance Tests 4.8.1 Measurements and Inspections on Completion of Environmental Tests 4.8.2 Measurements and Inspections at Intermediate Points during Endurance Tests 4.8.3 Measurements and Inspections on Completion of Endurance Tests 4.8.4 Conditions for Operating Life Tests 16	4.6.3	Circuits for Electrical Measurements	12
 4.7.2 Conditions for Burn-in 4.7.3 Electrical Circuit for Burn-in 4.8 Environmental and Endurance Tests 4.8.1 Measurements and Inspections on Completion of Environmental Tests 4.8.2 Measurements and Inspections at Intermediate Points during Endurance Tests 4.8.3 Measurements and Inspections on Completion of Endurance Tests 4.8.4 Conditions for Operating Life Tests 	4.7	Burn-in Tests	12
4.7.3 Electrical Circuit for Burn-in 4.8 Environmental and Endurance Tests 4.8.1 Measurements and Inspections on Completion of Environmental Tests 4.8.2 Measurements and Inspections at Intermediate Points during Endurance Tests 4.8.3 Measurements and Inspections on Completion of Endurance Tests 4.8.4 Conditions for Operating Life Tests 16	4.7.1	Parameter Drift Values	12
4.8 Environmental and Endurance Tests 4.8.1 Measurements and Inspections on Completion of Environmental Tests 4.8.2 Measurements and Inspections at Intermediate Points during Endurance Tests 4.8.3 Measurements and Inspections on Completion of Endurance Tests 4.8.4 Conditions for Operating Life Tests 16	4.7.2	Conditions for Burn-in	12
4.8.1 Measurements and Inspections on Completion of Environmental Tests 4.8.2 Measurements and Inspections at Intermediate Points during Endurance Tests 4.8.3 Measurements and Inspections on Completion of Endurance Tests 4.8.4 Conditions for Operating Life Tests 16	4.7.3	Electrical Circuit for Burn-in	12
 4.8.2 Measurements and Inspections at Intermediate Points during Endurance Tests 4.8.3 Measurements and Inspections on Completion of Endurance Tests 4.8.4 Conditions for Operating Life Tests 	4.8		
 4.8.2 Measurements and Inspections at Intermediate Points during Endurance Tests 4.8.3 Measurements and Inspections on Completion of Endurance Tests 4.8.4 Conditions for Operating Life Tests 		Measurements and Inspections on Completion of Environmental Tests	16
4.8.3 Measurements and Inspections on Completion of Endurance Tests 4.8.4 Conditions for Operating Life Tests 16		Measurements and Inspections at Intermediate Points during Endurance Tests	16
4.8.4 Conditions for Operating Life Tests			16
• •			16
	4.8.5	Electrical Circuit for Operating Life Tests	16



PAGE 4

		<u>Page</u>
TABL	<u>ES</u>	
1(a)	Type Variants and Range of Components	6
1(b)	Maximum Ratings	7
2 ′	Electrical Measurements at Room Temperature - d.c. Parameters	13
	Electrical Measurements at Room Temperature - a.c. Parameters	13
3	Electrical Measurements at High and Low Temperatures	14
4	Parameter Drift Values	15
5(a)	Conditions for Burn-in Tests	15
5(b)	Conditions for Operating Life Tests	15
6	Measurements and Inspections on Completion of Environmental Tests and at	17
	Intermediate Points and on Completion of Endurance Testing	
FIGU	RES	
1	Parameter Derating Information	7
2	Physical Dimensions	8
3	Functional Diagram	8
4	Circuits for Electrical Measurements	N/A
5	Electrical Circuit for Burn-in and Operating Life Tests	N/A
APPE	NDICES (Applicable to specific Manufacturers only)	
'A'	Agreed Deviations for EUROFARAD (F)	19



PAGE 5

ISSUE 1

1. GENERAL

1.1 SCOPE

This specification details the ratings, physical and electrical characteristics, test and inspection data for a Capacitor Filter, C-Type, Feedthrough, Electromagnetic Interference Suppression, Non-Hermetically Sealed, based on Type SFC040. It shall be read in conjunction with ESA/SCC Generic Specification No. 3008, the requirements of which are supplemented herein.

1.2 COMPONENT TYPE VARIANTS AND RANGE OF COMPONENTS

Variants of the basic type capacitor filters and the range of components covered by this specification are given in Table 1(a).

1.3 MAXIMUM RATINGS

The maximum ratings, which shall not be exceeded at any time during use or storage, applicable to the capacitor filters specified herein, are as scheduled in Table 1(b).

1.4 PARAMETER DERATING INFORMATION

The parameter derating information applicable to the capacitor filters specified herein, is shown in Figure 1.

1.5 PHYSICAL DIMENSIONS

The physical dimensions of the capacitor filters specified herein, are shown in Figure 2.

1.6 FUNCTIONAL DIAGRAM

The functional diagram, showing lead identification, of the capacitor filters specified herein, is shown in Figure 3.

2. APPLICABLE DOCUMENTS

The following documents form part of this specification and shall be read in conjunction with it:

- (a) ESA/SCC Generic Specification No. 3008 for Capacitors and Capacitor Filters, Feedthrough.
- (b) MIL-STD-202, Test Methods for Electronic and Electrical Component Parts.

3. TERMS, DEFINITIONS, ABBREVIATIONS, SYMBOLS AND UNITS

For the purpose of this specification, the terms, definitions, abbreviations, symbols and units specified in ESA/SCC Basic Specification No. 21300 shall apply. In addition, the following abbreviations are used:-

V_T = Test Voltage.

PAGE 6 ISSUE 1

TABLE 1(a) - TYPE VARIANTS AND RANGE OF COMPONENTS

(1) Variant (Notes 1	Rated \ U _R	_	(3) Capacitance Range	(4) Voltage Proof	(5) Voltage Drop	d.c. Resistance	(7) Rated Current
and 2)	(a) - 55°C/ + 85°C	(b) +85°C/ +125°C	C (pF) (±20%) (E6 Series)	VP (V)	V _{dr} (V)	Rs (mΩ)	lR (A)
01, 04, 07, 10	50	25	470 to 22 000	125	0.1	10	10
02, 05, 08, 11	100	75	470 to 6 800	250	0.1	10	10
03, 06, 09, 12	200	150	470 to 2 200	500	0.1	10	10

NOTES

- See Insertion Loss requirements in the following Table.
 See the Table below and Figure 2 for physical characteristics.

VARIANT	CASE THREAD E	INPUT TERMINAL
01 to 03	U: 8-32 UNC	Straight
04 to 06	U:8-32 UNC	Button
07 to 09	I:M4×0.70	Straight
10 to 12	I:M4×0.70	Button

INSERTION LOSS VALUES ACCORDING TO THE CAPACITANCE VALUE

(8) Capacitance	Insertion Loss (I _L) (dB)			
(pF) (E6 Series)	10MHz	100MHz	1.0GHz	10GHz
470	-	14	34	54
680	-	17	37	57
1 000	-	21	41	61
1 500	-	24	44	64
2 200	-	27	48	68
3 300	11	31	52	70
4 700	14	34	54	70
6 800	17	37	57	70
10 000	21	41	61	70
15 000	25	45	65	70
22 000	28	48	68	70



PAGE 7

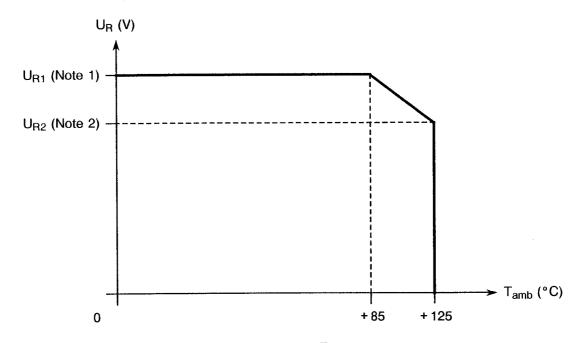
TABLE 1(b) - MAXIMUM RATINGS

No.	Characteristic	Symbol	Maximum Ratings	Unit	Remarks
1	Rated d.c. Voltage	U _R	See Table 1(a) Column 2	V	Notes 1 and 2
2	Voltage Drop	V _{dr}	100	mV	
3	d.c. Resistance	Rs	10	mΩ	
4	Rated Current	l _R	10	Α	Note 3
5	Torque	T _{qe}	0.4	Nm	
6	Operating Temperature Range	T _{op}	-55 to +125	°C	T _{amb}
7	Storage Temperature Range	T _{stg}	-55 to +125	°C	
8	Soldering Temperature	T _{sol}	+ 260	°C	Note 4

NOTES

- 1. At T_{amb}≤ +85°C. For derating at T_{amb}> +85°C, see Figure 1.
- 2. The addition of d.c. applied voltage and ripple voltage shall never exceed the rated d.c. voltage.
- 3. d.c. and low frequency.
- 4. Duration 10 seconds maximum at a distance of not less than 2.0mm from the device body and the same lead shall not be resoldered until 3 minutes have elapsed.

FIGURE 1 - PARAMETER DERATING INFORMATION



Rated Voltage versus Temperature

NOTES

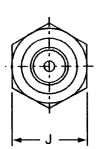
- 1. See U_{R1} Voltage value for each variant on Table 1(a), Column 2(a).
- 2. See U_{R2} Voltage value for each variant on Table 1(a), Column 2(b).

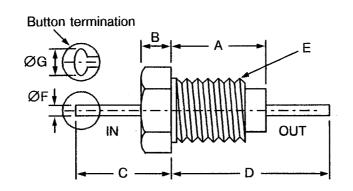


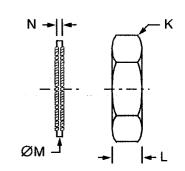
PAGE 8

ISSUE

FIGURE 2 - PHYSICAL DIMENSIONS





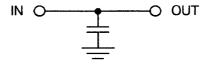


Symbol	Millimetres		Notes	
Зупноог	Min.	Max.	Notes	
Α	6.90	7.10		
В	2.40	2.60		
С	10.00 7.00	12.00 9.00	Variants 01 to 03, 07 to 09 Variants 04 to 06, 10 to 12	
D	17.00 21.00	19.00 23.00	Variants 01 to 03, 07 to 09 Variants 04 to 06, 10 to 12	
Е	See Ta	ble 1(a)	Thread	
ØF	0.72	0.88	1, 2	
ØG	1.00	-	3	
J	-	5.00		
K	-	6.00	Across flats	
L	-	2.50		
ØМ	-	6.40	4	
N	-	0.40	4	

NOTES

- 1. Lead finish shall commence not more than 1.5mm from encapsulant.
- 2. The terminals are defined as rigid.
- 3. Applicable only to Variants 04 to 06 and 10 to 12.
- 4. Internal fan lockwasher.

FIGURE 3 - FUNCTIONAL DIAGRAM





Rev. 'A'

PAGE ISSUE 1

9

4. REQUIREMENTS

GENERAL 4.1

The complete requirements for procurement of the components specified herein are stated in this specification and ESA/SCC Generic Specification No. 3008 for Capacitors and Capacitor Filters, Feedthrough. Deviations from the Generic Specification, applicable to this specification only, are detailed in Para, 4.2.

Deviations from the applicable Generic Specification and this Detail Specification, formally agreed with specific Manufacturers on the basis that the alternative requirements are equivalent to the ESA/SCC requirements and do not affect the components' reliability, are listed in the appendices attached to this specification.

4.2 **DEVIATIONS FROM GENERIC SPECIFICATION**

4.2.1 Deviations from Special In-process Controls

None.

Deviations from Final Production Tests (Chart II) 4.2.2

(a) Para. 9.7, External Visual Inspection: For variants with a silver plated case, a change of shade is acceptable.

4.2.3 Deviations from Burn-in and Electrical Measurements (Chart III)

(a) Para. 9.7, External Visual Inspection: For variants with a silver plated case, a change of shade is acceptable.

4.2.4 Deviations from Qualification Tests (Chart IV)

- (a) Para. 9.7, External Visual Inspection: For variants with a silver plated case, a change of shade is acceptable.
- (b) Para. 9.12, Accelerated Damp Heat: Shall not be performed.
- (c) Para. 9.15, Immersion: Shall not be performed.
- (d) Para. 9.19, Operating Life: At intermediate and final measurements, Insertion Loss shall not be performed.

4.2.5 Deviations from Lot Acceptance Tests (Chart V)

- (a) Para. 9.7, External Visual Inspection: For variants with a silver plated case, a change of shade is acceptable.
- (b) Para. 9.15, Immersion: Shall not be performed.
- (c) Para. 9.19, Operating Life: At intermediate and final measurements, Insertion Loss shall not be performed.

4.3 MECHANICAL REQUIREMENTS

Dimension Check 4.3.1

The dimensions of the components specified herein shall be verified in accordance with the requirements set out in Para. 9.5 of ESA/SCC Generic Specification No. 3008 and they shall conform to those shown in Figure 2 of this specification.

4.3.2 Weight

The maximum weight of the components specified herein shall be 2.0 grammes.



PAGE 10

ISSUE 1

4.3.3 **Robustness of Terminations**

The requirements for the robustness of terminations tests are specified in Section 9 of ESA/SCC Generic Specification No. 3008. The leads are defined as "Rigid".

Test Ua1, Tensile: The load shall be 10N.

4.3.4 Solderability

The requirements for solderability testing are specified in Section 9 of ESA/SCC Generic Specification No. 3008.

Test Method 1 shall apply and a thermal screen of 1.6mm may be used. The terminal shall be immersed up to 2.0mm from the body.

4.3.5 Seal Test

Not applicable.

MATERIALS AND FINISHES 4.4

The materials and finishes shall be as specified herein. Where a definite material is not specified, a material which will enable the components specified herein to meet the performance requirements of this specification shall be used. Acceptance or approval of any constituent material does not guarantee acceptance of the finished product.

4.4.1 Case

The case shall be silver plated brass and with potting encapsulant sealing the filter element.

4.4.2 Lead Material and Finish

The lead material shall be Type 'A' with Type '10' finish in accordance with the requirements of ESA/SCC Basic Specification No. 23500.

4.4.3 Accessories

Nut

: As per Figure 2, brass, silver-plated.

Lock-Washer: As per Figure 2, bronze, silver-plated.

4.5 **MARKING**

4.5.1 General

The marking of components delivered to this specification shall be in accordance with the requirements of ESA/SCC Basic Specification No. 21700 and the following paragraphs. When the component is too small to accommodate all of the marking specified, as much as space permits shall be marked and the marking information, in full, shall accompany the component in its primary package.

The information to be marked and the order of precedence, shall be as follows:-

- (a) Lead Identification.
- (b) The SCC Component Number.
- (c) Electrical Characteristics and Ratings.
- (d) Traceability Information.



PAGE 11

ISSUE 1

4.5.2 <u>Lead Identification</u>

Not applicable.

4.5.3 The SCC Component Number

The SCC Component Number shall be constituted and marked as follows:-

	<u>300803201</u>	브
Detail Specification Number		I
Type Variant (see Table 1(a))		١
Testing Level (B or C. as applicable)		j

4.5.4 Electrical Characteristics and Ratings

The electrical characteristics and ratings to be marked in the following order of precedence are:-

- (a) Capacitance Value.
- (b) Tolerance.
- (c) Rated Voltage.

The information shall be constituted and marked as follows:-

	<u>682</u> МЕ
Capacitance Value (6800pF)	
Tolerance (±20%)	
Rated Voltage (100V)	

4.5.4.1 Capacitance Values

The capacitance values shall be expressed by means of the following codes. The unit quantity for marking shall be picofarads (pF).

Capacitance Value (pF)	Code
XX10 ¹	XX1
XX102	XX2
XX10 ³	XX3

4.5.4.2 Tolerance

The tolerance on capacitance values shall be indicated by the code letters specified hereafter.

Tolerance (±%)	Code Letter
20	M



PAGE 12

ISSUE 1

4.5.4.3 Rated Voltage

The rated voltage shall be indicated by the code letters specified hereafter.

Rated Voltage (U _R) (V)	Code Letter
50	С
100	E
200	G

4.5.5 Traceability Information

Each component shall be marked in respect of traceability information in accordance with the requirements of ESA/SCC Basic Specification No. 21700.

4.6 ELECTRICAL MEASUREMENTS

4.6.1 Electrical Measurements at Room Temperature

The parameters to be measured at room temperature are scheduled in Table 2. Unless otherwise specified, measurements shall be performed at T_{amb} = +22 ±3 °C.

4.6.2 Electrical Measurements at High and Low Temperatures

The parameters to be measured at high and low temperatures are scheduled in Table 3. Measurements shall be performed at $T_{amb} = 125(+0-5)$ °C and -55(+5-0) °C respectively.

4.6.3 Circuits for Electrical Measurements (Figure 4)

Not applicable.

4.7 BURN-IN TESTS

4.7.1 Parameter Drift Values

The parameter drift values applicable to burn-in are as specified in Table 4 of this specification. Unless otherwise stated, measurements shall be performed at T_{amb} = +22 ±3 °C. The parameter drift values (Δ) applicable to the parameters scheduled shall not be exceeded. In addition to these drift value requirements for a given parameter, the appropriate limit values specified in Table 2 shall not be exceeded.

4.7.2 Conditions for Burn-in

The requirements for burn-in are specified in Section 7 of ESA/SCC Generic Specification No. 3008. The conditions for burn-in shall be as specified in Table 5(a) of this specification.

4.7.3 Electrical Circuit for Burn-in (Figure 5)

Not applicable.



PAGE 13

ISSUE 1

TABLE 2 - ELECTRICAL MEASUREMENTS AT ROOM TEMPERATURE - d.c. PARAMETERS

Na	Characteristics	Company of	ESA/SCC 3008	Test	Lin	Unit	
No. Characteristics	Symbol Test Metho		Conditions	Min	Max	Offic	
1	Voltage Drop	V _{dr}	Para. 9.4.1.5	I _R = 10A	-	0.1	٧
2	Voltage Proof	VP	Para. 9.4.1.2	V = 2.5U _R	Note 1	-	V
3	Insulation Resistance	Ri	Para. 9.4.1.3	Para. 9.4.1.3	104	-	МΩ

NOTES

1. See Column 4 of Table 1(a).

TABLE 2 - ELECTRICAL MEASUREMENTS AT ROOM TEMPERATURE - a.c. PARAMETERS

		Courab al	ESA/SCC 3008	Test	Lim	Unit	
No.	Characteristics	Symbol	Test Method	Conditions	Min	Max	Offic
4	Insertion Loss	l _{L1}	Para. 9.4.1.4	f = 10MHz Note 1	Note 2	-	dB
5	Insertion Loss	l _{L2}	Para. 9.4.1.4	f = 100MHz Note 1	Note 2	-	dB
6	Insertion Loss	l _{L3}	Para. 9.4.1.4	f = 1.0GHz Note 1	Note 2	**	dB
7	Insertion Loss	I _{L4}	Para. 9.4.1.4	f = 10GHz Note 3	Note 2	-	dB
8	Capacitance	С	Para. 9.4.1.1	Para. 9.4.1.1	Note 4	-	pF

NOTES

- 1. Measurements at rated current to be made only during Chart IV testing in Subgroups II or III. Measurements without load current to be made during Charts II, III and V.
- 2. See Column 9 of Table 1(a).
- 3. Measurements at this frequency to be made only during Chart IV testing.
- 4. See Column 3 of Table 1(a).



PAGE 14

ISSUE 1

TABLE 3 - ELECTRICAL MEASUREMENTS AT HIGH AND LOW TEMPERATURES

No.	Characteristics	Symbol	ESA/SCC 3008	Test Conditions	Lin	Unit	
INO.	Characteristics	Symbol	Test Method	(Note 1)	Min	Max	Offic
3	Insulation Resistance	Ri	Para. 9.4.1.3	Para. 9.4.1.3 Note 2	10 ³	-	МΩ
4	Insertion Loss	l _{L1}	Para. 9.4.1.4	f = 10MHz No current.	Note 3	· · •	dB
5	Insertion Loss	l _{L2}	Para. 9.4.1.4	f = 100MHz No current.	Note 3	-	dB
6	Insertion Loss	l _{L3}	Para. 9.4.1.4	f = 1.0GHz No current.	Note 3	-	dB

NOTES

- 1. If more than 20 units have to be measured, the measurement shall be performed on a sample basis in accordance with Inspection Level I, Table IIA, AQL = 1.0% of IEC Publication No. 410.
- 2. Insulation resistance is to be performed only at high temperature.
- 3. See Column 9 of Table 1(a).



PAGE 15

ISSUE 1

FIGURE 4 - CIRCUITS FOR ELECTRICAL MEASUREMENTS

Not applicable.

TABLE 4 - PARAMETER DRIFT VALUES

No.	Characteristics	Symbol	Spec. and/or Test Method	Test Conditions	Change Limits (Δ)	Unit
8	Capacitance Change	<u>ΔC</u> C	As per Table 2	As per Table 2	± 10	%

TABLE 5(a) - CONDITIONS FOR BURN-IN TESTS

No.	Characteristic	Symbol	Condition	Unit
1	Ambient Temperature	T _{amb}	+ 125(+ 0 - 3)	°C
2	Test Voltage	V _T	2×U _R at +125°C Note 1	V

NOTES

1. Applied between one terminal and the case. See Column 2(b) of Table 1(a) for value of UR.

TABLE 5(b) - CONDITIONS FOR OPERATING LIFE TESTS

No.	Characteristic	Symbol	Symbol Condition	
1	Ambient Temperature T _{amb}		+ 125(+ 0 - 3)	۰C
2	Test Voltage	V _T	2×U _R at +125°C Note 1	
3	Rated Current	l _R	10 Note 2	А

NOTES

- 1. Applied between one terminal and the case. See Column 2(b) of Table 1(a) for value of U_R.
- 2. To flow between the terminals.

FIGURE 5 - ELECTRICAL CIRCUIT FOR BURN-IN AND OPERATING LIFE TESTS

Not applicable.



PAGE 16

ISSUE 1

4.8 <u>ENVIRONMENTAL AND ENDURANCE TESTS (CHARTS IV AND V OF ESA/SCC GENERIC SPECIFICATION No. 3008)</u>

4.8.1 Measurements and Inspections on Completion of Environmental Tests

The parameters to be measured and inspections to be performed on completion of environmental tests are scheduled in Table 6. Unless otherwise stated, the measurements shall be performed at T_{amb} = +22 ±3 °C.

4.8.2 Measurements and Inspections at Intermediate Points During Endurance Tests

The parameters to be measured and inspections to be performed at intermediate points during endurance tests are scheduled in Table 6. Unless otherwise stated, the measurements shall be performed at T_{amb} = +22 ±3 °C.

4.8.3 <u>Measurements and Inspections on Completion of Endurance Tests</u>

The parameters to be measured and inspections to be performed on completion of endurance testing are as scheduled in Table 6. Unless otherwise stated, the measurements shall be performed at T_{amb} = +22 ±3 °C.

4.8.4 Conditions for Operating Life Tests (Part of Endurance Testing)

The requirements for operating life test are specified in Section 9 of ESA/SCC Generic Specification No. 3008. The conditions for operating life testing shall be as specified in Table 5(b) of this specification.

4.8.5 Electrical Circuit for Operating Life Tests (Figure 5)

Not applicable.



PAGE 17

ISSUE 1

TABLE 6 - MEASUREMENTS AND INSPECTIONS ON COMPLETION OF ENVIRONMENTAL TESTS AND AT INTERMEDIATE POINTS AND ON COMPLETION OF ENDURANCE TESTING

	ESA/SCC GENERIC S	SPEC. NO. 3008	MEASUREMENTS	AND INSPECTIONS	·	LIMITS		
NO.	ENVIRONMENTAL AND ENDURANCE TESTS (1)	TEST METHOD AND CONDITIONS	IDENTIFICATION	CONDITIONS	SYMBOL	MIN.	MAX.	UNIT
01	Seal Test (Hermetically Sealed)	Para. 9.6	Not applicable					
02	External Visual Inspection	Para. 9.7 and Paras 4.2.4 and 4.2.5 of this spec.	Final Measurements Visual Inspection	ESA/SCC No. 20500	<u>.</u>	-	· •	
03	Temperature Rise	Para. 9.9	Temperature Rise	Rated Current (3)	-	•	25	°C
04	Shock	Para. 9.10	Measurements during Tests	100% U _R (2) applied No Open or Short Circuits >0.1ms		-	-	
			Final Measurements Visual Examination Insertion Loss	No Mechanical Damage Table 2 Items 4 to 7	- <u> </u> _	- Table 2	-	
05	Vibration	Para. 9.11	Measurements during Tests During Last Cycle	Rated Current (3) and 100% U _R (2) applied No Open or Short Circuits > 0.1ms	<u>.</u>	-		
			Final Measurements Visual Examination Insertion Loss	No Mechanical Damage Table 2 Items 4 to 7	Լլ	- Table 2	-	
06	Accelerated Damp Heat	Para. 9.12 and Para. 4.2.4 of this spec.	Not applicable					
07	Low Air Pressure	Para. 9.13	Measurements during Tests Voltage Proof	During last 5 minutes Table 2 Item 2	VP	125% U _R (2)	-	
			Visual Examination	No breakdown, flashover, deformation or seepage	-	-	-	
			Final Measurements Visual Examination	No breakdown, flashover, deformation or seepage	-	- .	-	
80	Robustness of Terminations	Para. 9.14 and Para. 4.3.3 of this spec.	Final Measurements Visual Examination Voltage Drop	No damage Table 2 Item 1	- V _{dr}	-	Table 2	
09	Immersion	Para. 9.15 and Paras 4.2.4 and 4.2.5 of this spec.	Not applicable					
10	Overload	Para. 9.16	Final Measurements	140% of Rated Current (3) for 15 mins min.				
			Insulation Resistance Voltage Drop Visual Examination	Table 2 Item 3 Table 2 Item 1 No damage	Ri V _{dr}	Table 2 - -	- Table 2 -	

NOTES

- 1. The tests in this Table refer to either Chart IV or V and shall be used as applicable.
- 2. For U_R , see Column 2(a) of Table 1(a).
- 3. For I_R, see Column 7 of Table 1(a).
- 4. Greater than 50% of the value given in Table 2.
- 5. Greater than 10% of the value given in Table 2.



Rev. 'A'

PAGE 18

ISSUE 1

TABLE 6 - MEASUREMENTS AND INSPECTIONS ON COMPLETION OF ENVIRONMENTAL TESTS AND AT INTERMEDIATE POINTS AND ON COMPLETION OF ENDURANCE TESTING (CONT'D)

	ESA/SCC GENERIC	SPEC. NO. 3008	MEASUREMENTS .	AND INSPECTIONS		LIMI	TS	
NO.	ENVIRONMENTAL AND ENDURANCE TESTS (1)	TEST METHOD AND CONDITIONS	IDENTIFICATION	CONDITIONS	SYMBOL	MIN.	MAX.	UNIT
11	Resistance to Soldering Heat	Para. 9.17	Final Measurements Visual Examination Insulation Resistance Insertion Loss	After recovery of 1 to 2 hrs No damage Table 2 Item 3 Table 2 Items 4 to 8	- Ri I _L	Table 2 Table 2	- - -	
12	Solderability	Para. 9.18 and Para. 4.3.4 of this spec.	Final Measurements Visual Examination	IEC No. 68-2-20 Para. 4.6.4, 4.7.4 or 4.9.3	-	-	-	
13	Operating Life	Para. 9.19	Initial Measurements Capacitance During Tests Intermediate	Table 2 Item 8 No Open or Short Circuit	· ·	Record -	values -	
			Measurements Insulation Resistance Voltage Proof	Table 3 Item 3 After 24 hrs recovery Table 2 Item 2	Ri VP	Table 3	-	
			Insulation Resistance Capacitance Change Final Measurements Insulation Resistance	Table 2 Item 3 Table 2 Item 8 Table 3 Item 3	Ri ΔC/C Ri	(2) (4) Table 3	- Table 4 -	
			Voltage Proof	After 24 hrs recovery Table 2 Item 2	VP	90% U _R (2)	,	
			Insulation Resistance Capacitance Change	Table 2 Item 3 Table 2 Item 8	Ri ΔC/C	(4) -	- Table 4	
14	Corrosion	Para. 9.20	Final Measurements Visual Examination	No corrosion, damage or obliteration of marking	-	<u>.</u>	<u>-</u>	
15	Permanence of Marking	Para. 9.21	Final Measurements Visual Examination	No corrosion or obliteration of marking	-	-	-	
16	Damp Heat (Non-hermetically Sealed)	Para. 9.24	Final Measurements Visual Examination Insulation Resistance	After 4 hrs recovery No cracking or encapsulant separation Table 2 Item 3	- Ri	- (5)	-	

NOTES: See Page 17.



PAGE 19

ISSUE 1

APPENDIX 'A'

Page 1 of 1

AGREED DEVIATIONS FOR EUROFARAD (F)

ITEMS AFFECTED	DESCRIPTION OF DEVIATIONS					
Paras. 4.2.2 and 4.2.3	(a) Para. 9.4.1.5, Voltage Drop: Voltage Drop may be performed as a d.c. Resistance measurement in accordance with MIL-STD-202, Method 303. In this case, the maximum value of d.c. Resistance (Rs) shall be as specified in Column 6 of Table 1(a).					