DOCUMENT CHANGE REQUEST

DCR number 1317	Changes required for: General	Originator: Steve Jeffery
Date: 2020/06/23	Date sent: 2020/01/27	Organisation: ESCC Executive
Status: IMPLEMENTED		

Title:	Capacitors Fixed Reconstituted MICA High Voltage, based on type HT86PS		
Number:	3006/022	Issue:	3

Other documents affected:

Page:

All.

Paragraph:

Total reformat/re-write of ESCC Detail Specification 3006/022 issue 3 as part of the ongoing conversion of legacy ESA/SCC specifications to the ESCC format, as well as reflecting changes resulting from the conversion of ESCC Generic Specification No. 3006 (ref. DCR 1231).

The layout, format and general content of 3006/022 issue 4 is based on other converted ESCC Detail Specifications, see the attached draft Detail specification that implements all the proposed changes:
3006022 draft 4B for DCR review.docx

The technical content of ESCC 3006/022 issue 4 remains closely based on the original ESCC 3006/022 issue 3 except as detailed herein.

Original wording:

See 3006/022 issue 3

Proposed wording:

Total reformat of this Detail Specification (one of a range of various ESCC Detail Specifications for capacitors under Generic Specification No. 3006) as part of the ongoing conversion to the ESCC format.

See below for summary of changes, also see attached the proposed 3006/022 issue 4.

Note: known support for active procurement against this specification includes the following Manufacturers:
• Exxelia Technologies (formerly Eurofarad).

Summary of changes to the current format, layout and content is as follows:

1) General
Rewording and restructure of various sections and paragraphs of the specification, plus other editorial changes including deletion of any redundant paragraphs and information, based on the layout and editorial content of other Detail Specifications already converted to ESCC format.

DCR number 1317	Changes required for: General	Originator: Steve Jeffery
Date: 2020/06/23	Date sent: 2020/01/27	Organisation: ESCC Executive
Status: IMPLEMENTED		

Specific amendments include:

2) Para 1.2 and Table 1(a): Range of Components Table is amended and explanatory notes (Notes 1 & 2) added regarding the dimensions and the lead material and finishes of the components.

3) Para 1.3 and Table 1(b): SI Unit (Pa) is used for Operating Air Pressure Range instead of “mbar”.

4) Para 1.5 and Figure 2, Physical Dimensions (re-named “Physical Dimensions and Terminal Identification”):
• Note 2 is revised (for some capacitors these dimensions will be greater than 2mm) in order that the approximate position of lead-outs with respect to the body is defined instead.
• Note 3 is re-worded as the Terminal Identification note.

5) Para 1.6 and Figure 3: Applicable Functional Diagram (for polarised capacitor) replaces the existing basic capacitor symbol.

6) Para 4.2 Deviations from Generic Specification is revised as follows:
• Paras 4.2.2(a), 4.2.4(a), 4.2.5(a) “Seal Test: Not applicable” are deleted (not a deviation, as by definition the components are non-hermetically sealed).
• Para 4.2.4(e) Climatic Sequence, the Low Air Pressure deviation is re-written and is clarified as being for Qualification Testing only.
• Para 4.2.4(e) Climatic Sequence, the Damp Heat Accelerated deviation to Test condition is irrelevant and is therefore deleted.
• Paras. 4.2.4(e) and (f), the Partial Discharge (AC) measurements deviations are deleted (not considered deviations from the Generic; the details are now included in Intermediate and End-Point Electrical Measurements).
• Para 4.2.5 is deleted.

7) Para 4.3.3, Robustness of Terminations: paragraph is re-worded for clarification purposes.

8) Para 4.4.2, Lead Material and Finish: this information is moved to Range of Components.

9) Para 4.6.1 and Table 2 (was “Electrical Measurements at Room Temperature”, now “Room Temperature Electrical Measurements”):
• Capacitance Limits column and Note 1, the Note is replaced by two new Notes where Note 1 defines the Minimum Limit and Note 2 defines the Maximum Limit.
• Capacitance Test Conditions for Insulation Resistance (Terminal-to-Terminal) are changed from µF to pF to be in-line with Range of Components and The ESCC Component Number.
• The two Insulation Resistance Characteristics are re-named (simplification and clarification).
• The unit for Insulation Resistance, “sec”, is re-written as G.nF.
• Note 3 is re-written “Voltage application time: 5s” (because electrical measurements are no longer performed during Final Production Tests i.e. Chart F2).
• Note 2 is re-numbered (Note 4).

10) Para. 4.6.2 and Table 3 (was “Electrical Measurements at High and Low Temperatures”, now “High and Low

DCR number 1317	Changes required for: General	Originator: Steve Jeffery
Date: 2020/06/23	Date sent: 2020/01/27	Organisation: ESCC Executive
Status: IMPLEMENTED		

Temperatures Electrical Measurements"):
• Note 1 (which defines the sampling) is amended to "… a sample of 5 components from each manufacturing lot with 0 failures allowed. In the event of any failure a 100% inspection may be performed."
• Capacitance Change characteristic is re-named "Temperature Coefficient". Associated Note 2 re-worded for clarification purposes.
• Insulation Resistance Terminal to Terminal is re-named (simplification and clarification).
• Capacitance Test Conditions for Insulation Resistance (Terminal-to-Terminal) are changed from µF to pF to be in-line with Range of Components and The ESCC Component Number.
• The unit for Insulation Resistance, "sec", is re-written as G.nF.

11) Para 4.7.2 and Table 5 (was "Conditions for Burn-in", now "Burn-in Conditions"): The sentence regarding 24 ±2 hours recovery is re-worded and is included in Note 1. There is now no Para for Operating Life, as this is specified by the new Generic ESCC 3006 and deviation (Para 2.1.1.2(f)).

12) Table 6 (Measurements and Inspections on Completion of Environmental Tests and at Intermediate Points and on Completion of Endurance Testing) is modified and incorporated into new Para "Intermediate and End-Point Electrical Measurements" (Para 2.5):
• An absolute maximum limit of 60×10-4 is now specified for "Tangent of Loss Angle Change" instead of "+10" (as the applicable measurement is "Tangent of Loss Angle", which is not a drift value measurement).
• Where limits are specified as either "Record Values" or "Table 2", this is now a Note directing to Room Temperature Electrical Measurements.
• Temperature Coefficient is considered to be a valid test (despite the Identification "Not applicable" in Table 6. Note Paras 4.2.4 and 4.2.5 do not include any deviation against Temperature Coefficient/High and Low Temperature Stability) and it is therefore included, with Limits based on those for "Change in Capacitance" measured during High and Low Temperatures Electrical Measurements.
• Notes 3 and 4 are re-worded (and re-numbered as necessary).

Justification:

Part of the ongoing conversion of legacy ESA/SCC specifications to the ESCC format. Amendments are made to the format and presentation to be consistent with the various other ESCC Detail Specifications, already converted to ESCC format, as well as the current issue of ESCC Generic Specification No. 3006.

Attachments:

3006022_draft_4b_for_dcr_review.docx

Modifications:

Para. 1.7: The functional diagram is modified (polarised capacitor with additional "-", for full clarification)

Para. 2.4.2, Note 1: The sample size is 6 pieces (was 5)

A new Appendix, "Appendix 'A' Agreed Deviations for Exxelia Technologies", is added to list various agreed and required deviations against Chart F3 & F4, i.e.:

* All lots, prior to the performance of High and Low Temperatures Electrical Measurements, shall be serialised 100%;

* The Voltage application time (part of Voltage Proof during initial Room Temperature Electrical Measurements) shall be the standard 60 (+0 -1)s. 5s is specified for all other voltage proof measurements required during Charts F3 & F4;

* The Temperature Coefficient measurements (High and Low Temperatures Electrical Measurements, Chart F3) shall be R+R in order that this data may be used in lieu of performing this test again per Subgroup 2B of Chart F4;

* 100% X-ray shall be carried out at the end of Screening prior to External Visual inspection.

Approval signature:

Date signed:

2020-06-23