



DOCUMENT CHANGE REQUEST

DCR number 1313 Changes required for: General

Date: 2020/06/23

Date sent: 2020/01/27

Originator: Steve Jeffery

Organisation: ESCC Executive

Status: IMPLEMENTED

Title: CAPACITORS, FIXED, SELF HEALING, NON-INDUCTIVE, POLYETHYLENE TEREPHTALATE, NON-

Number: 3006/026

Issue:

1

Other documents affected:

Page:

All.

Paragraph:

Total reformat/re-write of ESCC Detail Specification 3006/026 issue 1 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 3006/026 issue 2 is based on other converted ESCC Detail Specifications, see the attached draft Detail specification that implements all the proposed changes:

3006026 draft 2B for DCR review.docx

The technical content of ESCC 3006/026 issue 2 remains closely based on the original ESCC 3006/026 issue 1 except as detailed herein.

Original wording:

See 3006/026 issue 1

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 3006/026 issue 2.

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.

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Specific amendments include:

2) Para 1.2 and Table 1(a): Range of Components and Case Size Variants Table, and Notes, are revised (e.g. "Case Size Variants" is now Type Variants; Note 2 deleted, with information now in new Capacitance Tolerance column).

3) Para 1.3 and Table 1(b), Maximum Ratings:

- New Notes on parameter derating added for the DC Category Voltage and AC Ripple Current Characteristics.
- Soldering Temperature for Variants 01 to 04 was +215°C, is now +235°C (reflecting the Solderability deviation conditions). The associated Note on "reflow soldering" now includes the applicable temperature of +215°C and only maximum soldering duration is specified.
- Soldering Characteristics are revised (now Soldering Temperature Characteristic only). Notes 4 & 5 are replaced by a single new explanatory Note.

4) Para 1.5 and Figures 2(a) & 2(b), Physical Dimensions (re-named "Physical Dimensions and Terminal Identification"): A Terminal Identification (i.e. voltage polarity symbol marking) Note is added.

5) Figure 3, Functional Diagram is revised as a simple single diagram (circuit symbol for a polarised capacitor) along with the addition of two Notes:

- A Note about respecting device polarity in use (see ESCC 3006/024 Functional Diagram paragraph).
- An explanatory Note for the Variants with two rows of terminals.

6) Para 4.2 Deviations from Generic Specification is revised as follows:

- Paras 4.2.2(a), 4.2.3(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 4.2.3(b), Electrical Measurements at High and Low Temperature deviation is deleted. The details describing sampling, mounting on a substrate (and hence the destructive nature) are moved to a Note to the High and Low Temperatures Electrical Measurements paragraph. The other details of this deviation are considered to no longer be required (different yield possibility in new format of Generic 3006) and are therefore deleted.
- Para 4.2.3(c) is deleted (as, per new Generic Chart F3, Sleeving is only "If specified in the Detail Specification").
- Para 4.2.4(b) "Corrosion: Not applicable" is deleted (Corrosion test is deleted from Generic 3006).
- Para 4.2.4(c), Robustness of Terminations deviation re-written, and details from the original first sentence (i.e. rigid terminals; only Test Ua is applicable) are now specified in the Para "Robustness of Terminations".
- Paras 4.2.4(d), (e) deviations are clarified as being applicable to Variants 01 to 04 only (as the leaded Variants, Variants 05 to 08, do not require such deviations).
- Para 4.2.5 is deleted.

7) Para 4.3.3, Robustness of Terminations: paragraph is re-worded for clarification purposes (see also item 6, above).

8) Para 4.4, Materials and Finishes: Case information is no longer needed (per new Generic) and is therefore deleted; the Lead Material and Finish information is split into two subparagraphs.

9) Para 4.5.2.1(a), Capacitance Values, the missing capacitance value range "XX 103" and Code "XX3" are added (first row of Table).



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10) Para 4.6.1 and Table 2 (was “Electrical Measurements at Room Temperature”, now “Room Temperature Electrical Measurements”):

- Capacitance Limits column, the limit reference is replaced by two new Notes where Note 1 defines the Minimum Limit and Note 2 defines the Maximum Limit.
- Insulation Resistance Characteristic is now defined as “Insulation Resistance, Dielectric” and the unit “sec” is re-written as M.µF.

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

- New Note added to define the sampling requirements, etc., for Variants 01 to 04 (see item 6 above).
- Note 1 (which defined the sampling) is re-numbered Note 2, made applicable to Variants 05 to 08 only, and 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” and the associated Note 2 is re-worded for clarification purposes.

12) Para 4.7.2 and Table 5 (was “Conditions for Burn-in”, now “Burn-in Conditions”):

- Note 1 is re-numbered (Note 2).
- The sentence regarding 24 ±2 hours recovery is re-worded and included in new Note 1.
- There is now no Para for Operating Life, as this is specified by the new Generic ESCC 3006 and deviations (Para 2.1.1.1(b)).

13) 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):

- The Capacitance Change Identification for Shock or Bump was never required and is therefore deleted.
- Where limits are specified as either “Record Values” or “Table 2”, this is now a Note directing to Room Temperature Electrical Measurements.
- An absolute maximum limit (defined in a new Note) of “1.5x the limit specified in Room Temperature Electrical Measurements” is now specified for “Tangent of Loss Angle Change” instead of “+50” (as the applicable measurement is “Tangent of Loss Angle”, which is not a drift value measurement).
- Note 3 is 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.

See also change details above for justification for specific items.

Attachments:

3006026_draft_2b_for_dcr_review.docx

Modifications:

Note: Please refer to the Comments against DCR 1317 (ESCC 3006/022 conversion) from which these modifications have arisen.

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 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. These measurements may also be performed at the end of Screening and therefore, if required, any parts which are electrically 'good' following Room Temperature Electrical Measurements but have gone on to fail External Visual inspection may be used.

Approval signature:



Date signed:

2020-06-23