DOCUMENT CHANGE REQUEST

DCR number 764	Changes required for: General	Originator: Steve Thacker
Date: 2017/06/26	Date sent: 2012/10/10	Organisation: ESCC Executive Secretariat
Status: IMPLEMENTED		

Title:	Capacitors Fixed Ceramic Dielectric Type I High Voltage 1.0 to 5.0kV, based on case styles VR,CV &		
Number:	3001/033	Issue:	3

Other documents affected:

Page:

Total reformat/re-write of ESCC Detail Specification 3001/033 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. 3001 issue 1 (per DCR694).

The layout, format and general content of 3001/033 issue 4 is based on other converted ESCC Detail Specifications (see attached for proposed 3001/033 issue 4 Draft A).
The technical content of ESCC 3001/033 issue 4 remains closely based on the original ESCC 3001/033 issue 3 except as detailed herein.

Paragraph:

see below

Original wording:

see ESCC 3001/033 issue 3

Proposed wording:

Total reformat of this Detail Specification (from the range of various ESCC Detail Specifications, 3001/xxx, for capacitors under Generic Specification No. 3001) as part of the ongoing conversion to the ESCC format.

See below for summary of changes, also see attached the proposed 3001/033 Issue 4 Draft A.

Note: known support for active procurement against this specification includes the following Manufacturer:
• AVX LTD (GB) (on a non-qualified basis)

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 based on the layout and editorial content of other Detail Specifications already converted to ESCC format.

In addition, editorial and technical amendments resulting from the changes made to the test requirements of the Generic

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Specification No. 3001.
Specific amendments include:
• Paras 4.2.2(a), 4.2.3(a) are deleted
• Table 2 & Table 6: Insulation Resistance and Voltage Proof are amended to clarify Dielectric & Body Insulation tests, as well as reflecting the test sampling specified in the Generic spec.
• Table 3: Delete Insulation Resistance, & Temperature Coefficient on each value (due to SCC level B being deleted)
• Table 4 & Para 4.7.1 are deleted (due to SCC level B being deleted)
• Table 5 is delete (test conditions are already specified in the Generic spec (Temperature & Voltage)).
• Table 6 only includes specified electrical measurement requirements as required for the various Chart F4 Qual level tests (editorial change)
• Appendix A Deviation on Radiographic Inspection is deleted.

2) Table 1(a), Para 4.4.1, Para 4.4.2
All component range and selection options (including Variant, Capacitance, tolerance, voltage, Case & leads details, and weight) are brought together under a single Para. (Para. 1.4.2 in issue 4) (editorial changes for clarification & consistency purposes)

3) Figure 2(d): Dimensions a1 & b1 are included (same limits as in Figure 2(c))(for consistency purposes).

4) Figure 3: Note is added to clarify lead connection to the capacitor terminals.

5) Para 3: symbol definition VT is deleted (no longer required, to be to be consistent with ESCC 21300)

6) Para 4.2.1, Deviation on Robustness of Terminations (Lead Peel Test)
Test conditions per the original Robustness of Terminations test that were not specified/clarified in the deviated lead peel test are now specified:
i.e.
• sampling of 5 components from each manufacturing lot with 0 fails allowed
• test samples are not encapsulated
• tensile force shall be applied evenly across the length on the capacitor terminal, to all leads on that side of the component together.
• All leads shall be tested

7) Para 4.2.2(b), 4.2.3(b), 4.2.4(a), 4.2.5(a) are deleted (now covered by Para 1.4.2 & 2.4.1 in issue 4)

8) Add new Para 2.3, Robustness of Termination test requirements are now specified with test conditions in accordance with the generic spec (i.e. per the IEC test method). A minimum of one lead on each side of the component shall be tested.

9) Para 4.5.3.1: Capacitance value code table is corrected to reflect the actual specified capacitance range.

10) Table 2
Units for Insulation Resistance are rewritten as Mohm.uF (instead of sec)(also in Table 6)
Insulation Resistance & Voltage Proof : The rated voltage condition break points are amended to be 1000V & 2000V

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(instead of 1250V) based on the actual values specified.

11) Table 3 Temperature Coefficient - Test No. 6(ii) (Para 2.3.2 in issue 4)
The default test conditions per the generic spec now apply. i.e. the +/-30ppm/C limit applies over the full temperature range: -55C to +125C (was only specified for temp range +20C to +125C)
Amend remark to read "... 5 components from each manufacturing lot ..." (instead of "5 parts for each dielectric lot") (to be consistent with ESCC terminology & the Generic spec).

12) Table 5 (& Para 4.7.2) (Para 2.6 in issue 4)
Add requirement for 24hours minimum recovery time after Burn-in (to be consistent with all other Type I capacitor specs)

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 ESCC Generic Specification No. 3001 issue 2.

See also change details for justification for specific items above.

Attachments:

3001033_draft_4a_in_review.pdf, 3001033_draft_4e_for_dcr764_mod.docx

Modifications:

The original DCR text shall be amended as follows:

Based on the review performed by the PSWG adhoc WG on ceramic capacitor generic specifications as implemented into ESCC3001 issue 2, the following modifications shall apply to this DCR:

a) All changes, including these modifications, have been implemented in the new DCR attachment 3001/033 draft 4E (which shall replace the original DCR attachment).

b) Ref. original DCR item 1) General:
The following additional editorial and technical amendments resulting from the changes made to the test requirements of the Generic Specification No. 3001, shall apply:
• Table 6: Climatic Test Sequence requirements are deleted.
• Table 6: Add notes applicable to Operating Life, to explain when the 1000h & 2000h measurements apply.

c) Ref. original DCR item 8) Para 4.4.3, Robustness of Termination: item is deleted (and replaced by item 6)

d) Ref. original DCR item 10) Table 2 & 6: units Gohm.nF are used for Insulation resistance (instead of sec)

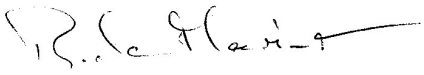
e) Add new change items to this DCR as follows:

13) Appendix A for AVX (UK): replace the various specific document references for Microsectioning, and Internal and External Visual Inspection by “document as per PID.”

14) Para 4.2, Deviations to the Generic Spec: A new deviation is added to replace the Steady State Humidity test applicable to Chart F4 Group 1 testing (Qualification and Periodic Tests) by a Damp Heat Steady State test per IEC60068-2-78 (half no bias / half 100V bias, 40°C, 93%RH, 56days)(see 3001/033 draft 4D Para 2.1.1.2 for full details) (see note below)
Note: As has been agreed by the PSWG for ESCC 3009/034 (high Voltage type II ceramic chip capacitors) a similar deviation on Steady State Humidity has been applied in 3001/033 (also high voltage ceramic capacitors) on a similar basis. i.e.
The PSWG-WG have suggested, since implementation of partial discharge requirements are still under discussion at CTB Passive WG level and could yet take some time, we should not make any major changes for AVX-NI (UK) in this ESCC Detail Specification (3009/034). Low Voltage Humidity test from Chart F4 being not applicable to high voltage, the PSWG-WG has therefore proposed to maintain, for the time being, the classical damp heat (half no bias / half 100V bias, 40°C, 93%RH, 56 days) from ESCC 3001 issue 1 for this high voltage ESCC detail specification (as a deviation to the latest 3001 issue 2).

15) Figure 2(a), VR Style, Variant 01: correct dimension Hmax to be 6.1mm (was 4.6mm)(this is a simple correction of a typographic error from previous revisions).

Approval signature:



Date signed:

2017-06-26