DOCUMENT CHANGE REQUEST

DCR number 1129	Changes required for: General	Originator: Steve Jeffery
Date: 2018/07/04	Date sent: 2017/11/22	Organisation: ESCC Executive
Status: IMPLEMENTED		

Title:	Generic Specification for Capacitors Variable Concentric Trimmer		
Number:	3010	Issue:	2

Other documents affected:

Page:

All.

Paragraph:

Total reformat/re-write of ESCC Generic Specification 3010 issue 2 implementing changes specified and agreed by Exxelia Temex, as well as part of the ongoing conversion of legacy ESA/SCC specifications to the ESCC format.

For details of the proposed contents of ESCC 3010 issue 3, see the attached draft Generic specification that implements all the proposed changes:
3010 draft 3A for DCR review.docx

Original wording:

See 3010 issue 2

Proposed wording:

The Generic Specification is proposed to be extensively amended to incorporate various policy, technical & editorial amendments, and corrections in order to bring it in line with other ESCC Generic Specifications that have already been converted to the new ESCC format.

The layout, format and general structure, and editorial content of ESCC 3010 draft 3 are based on other published, converted ESCC Generic Specifications such as ESCC 5000, 9000, 4001 etc.

The proposed technical content of ESCC 3010 draft 3 is based on the current content of ESCC 3010 issue 2 plus additional changes proposed for the purposes of general improvement.

This DCR summarises all the amendments to ESCC 3010 issue 2, plus identifies the additional editorial & technical changes not already generally detailed and justified by previous, approved DCRs related to conversion of ESCC Generic Specifications.

.....

Change Details:

A) Main General Changes (similar to those already incorporated into other converted ESCC generic specifications e.g.

ESCC5000, etc):

1) Chart I, The General Flow Chart is replaced by Chart F1; It clarifies the flow of components for Procurement.

2) Chart III Burn-in and Electrical Measurements, has been replaced by Chart F3, Screening Tests.

3) Chart IV & V, Qualification and Lot Acceptance Testing charts have been incorporated, with some modifications, into a single Chart F4, Qualification, Periodic Testing and Lot Validation Testing. Modifications include:
• Periodic testing is mandatory for ESCC qualified components with a defined testing schedule (i.e. 12 months for Endurance and Electrical Subgroups and 24 months for all other testing).
• Para 8.2, Chart IV, etc, Lot Acceptance Testing has been deleted but an Orderer option for similar Lot Validation Testing, for procurement, has been added. Lot Validation Testing is not mandatory and will only be done if specifically stipulated by the Orderer in the PO.
• Para 8.2.1, The requirement for LAT level 3 as a minimum for non-qualified component procurement is removed.
• Para 9.16, Operating Life is 2000hours for Qualification Testing and when Periodic Testing is being performed due to lapse of qualification; 1000hours for Periodic Testing performed to achieve extension of qualification (previously was 2000hours for Qual / 1000hours for LAT2).
• No failures are allowed during Chart F4 testing.
• The sampling for some tests of Chart F4 have been amended.

4) Para 1.2, etc, Introduction of Technology Flow Qualification per ESCC No. 25400 to the Generic spec.

5) Para 1.2, etc, Introduction of ESCC 23100 (ESCC Recommendations on the use of the ESCC Specification System for the Evaluation and Procurement of Unqualified Components) to the generic spec.

6) Para 1.2, etc, The Generic Specification has been made applicable and fully usable for procurement of unqualified components as well as for ESCC Qualified components.

7) Para 2.1, etc, Clarification that the term PID is specific to ESCC qualified components.

8) Para 2.1 & 4.5, Material outgassing reference document is corrected to be ESCC No. 22600 (not ESA PSS-01-702). Material restrictions per ESCC No. 22600 are specified.

9) Para 4.1, 4.3, 7.1, Chart I, Chart III, etc, The SCC testing levels B and C have been deleted; there is now only a single ESCC testing level, equivalent to old SCC level C, but it is not given a specific designation. All requirements applicable to ESCC level B are deleted (e.g. Parameter Drift Value measurements, serialisation during screening, documentation requirements).

10) Para 4.3, When using the ESCC System to procure components from an unqualified source and marking the parts with the ESCC component number, the Manufacturer should possess a manufacturing and quality assurance system that is compatible with space application. As such, the user expectation should be that parts would be compatible with passing the testing requirements of Chart F4. Accordingly the requirement placed on qualified sources to not knowingly supply components that cannot meet the Chart F4 testing is extended to unqualified sources.

DCR number 1129	Changes required for: General	Originator: Steve Jeffery
Date: 2018/07/04	Date sent: 2017/11/22	Organisation: ESCC Executive
Status: IMPLEMENTED		

11) Para 4.3.1, The maximum allowed delay for Lot failure notification (provided by the Manufacturer) is now 5 working days (was 2).

12) Para 4.4, Marking requirements per ESCC No. 21700 shall apply.

13) Para 5 & Chart F2, Production Control/Special In-Process Controls, replaces Paras 5 & 6 and Chart II. Redundant/repeated tests in Chart II are removed (Electrical Measurements & External Visual Inspection). Rapid Change of Temperature is moved to new Chart F3.

14) Para 7.4.1, etc, Check for lot failure during Screening (PDA), only includes Electrical and Mechanical Parameter limit failures (excluding the mechanical, handling, lost and visual failures counting towards PDA in ESCC 3010 issue 2).

15) Para 9.3.3, Electrical Measurements at High and Low Temperatures (Para 8.3.3 in ESCC 3010 draft 3): A default sample of 5 components with 0 failures (otherwise 100%) is fixed for this test.

16) Para 9.5 & Chart II, Dimension Check is performed on 3 samples per standard ESCC policy (the sample size was actually undefined in ESCC 3010 issue 2).

17) Para 10.1.2, 10.1.3, The minimum required delivered documentation to the customer for procurement is a Certificate of Conformity & a Cover sheet.

B) Other Editorial and/or Technical Changes (specific to ESCC 3010):

18) Para 2.1 & 2.2:
Reference documents that are not actually referenced in 3010 are removed, i.e. IEC No. 410, MIL STD-414, 'ESA PSS-01-702'.
ESCC 22600, 23100, 25400 are added.

19) Para 7.1.1, Burn-in test requirements are detailed in new Para 8.4 in ESCC 3010 draft 3.

20) Weight requirements are added to Para 5.2.3 & Chart F2 of ESCC 3010 draft 3.

21) Para 9.2, Rapid Change of Temperature, is modified to take account of the changes from Charts II, IV & V to Charts F2/F3 and F4.

22) Para 9.3, etc., Electrical and Mechanical Measurements:
• All electrical and mechanical test methods are amended, e.g. irrelevant details/information deleted. Capacitance (Para 9.3.1.1) measurements shall be made at the component's actual "minimum and maximum range" values and not at the "rated" capacitance.
• Other capacitance measurements are made with the component's rotor set at "specified" value(s), rather than "rated" value

(s).
• Modifications made to take account of the changes from Charts IV and V to Chart F4 (Para 8.3.1.x in ESCC 3010 draft 3).

23) Paras 9.4 and 9.5 are merged into a single Para (External Visual Inspection and Dimension Check).

24) Para 9.8, Resistance to Soldering Heat:
Addition of “Unless otherwise specified…” and test temperature.

25) Para 9.10 etc:
• ‘Bump’ is deleted as test is either Shock OR Bump; typically (in various converted Generics) only Shock is retained.
• Unit of acceleration changed to metres-per-second-squared.

26) Para 9.11, Climatic Sequence: The titles of Paras 9.11.2 & 9.11.5 are modified for clarification purposes.

27) Para 9.12, Damp Heat, Steady State: IEC Publication No. 68-2-3 has been withdrawn by the IEC and replaced by 60068-2-78, Test Cab. New conditions and severity are added accordingly.

28) Para 9.13, End-Stop Torque: Wording is added to clarify that both end-stops are to be tested.

29) Para 9.16, Operating Life:
• Initial Measurements (Capacitance) are added due to the single ESCC testing level (“old” testing level C equivalent).
• Tolerance on duration is added.
• Recovery period when testing has completed is added, i.e. 24 ±2 hours.

30) Para 9.18, Temperature Coefficient: Para is moved to the “Electrical Measurements” Section of ESCC 3010 draft 3, and is modified to clarify the test requirements, i.e. maximum storage (not “category”) temperature, and temperatures (a) (b) & (c) are amended to “+22…” rather than “+20…”.

Justification:

All changes have been defined and included to serve the purposes of technical improvement, clarification, accuracy, completeness, simplification, harmonisation and consistency. The aim is to simplify and improve the content and interpretation of the specification and its requirements whilst maintaining an efficient and acceptable technical baseline.

All technical changes have been defined and/or agreed by the Manufacturer Exxelia Temex.

ESCC 3010 draft 3 is written to closely follow the layout, format and content of the latest ESCC 5000. The justifications for the related policy and editorial changes given in all other previous DCRs related to the conversion of ESCC Generic Specifications also apply to this DCR.

Attachments:
3010_draft_3a_for_dcr_review.docx
Modifications:
N/A
Approval signature:

Date signed:
2018-07-04