APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL

Component Title: Capacitors, Ceramic, Type II, types CNC 31 to CNC 34

Executive Member: CNES Date: 02/03/2022

Appl. No. 315E

1 Components (including series and families) submitted for Extension of Qualification Approval:

ESCC COMPONENT NO.	VARIANTS	RANGE OF COMPONENTS	BASED ON	TEST VEHICLE / S	COMPONENT SIMILAR
3001/037	01 to 04	All values, 16 and 25V	CNC3xNE		X
	05 to 08	All values, 16 and 25V	CNC3xPE	CNC31PE 5.6µF 10% 25V CNC31PE 10µF 10% 16V (x2) CNC33PE 22µF 10% 16V (x2) CNC33PE 15µF 10% 16V CNC34PE 68µF 10% 16V (x2)	
	09 to 12	All values, 16 and 25V	CNC3xPLE		X
	13 to 16	All values, 16 and 25V	CNC3xLE	CNC33LE 22µF 10% 16V	

2 Component Manufacturer

EXXELIA Technologies

3 Location of Manufacturing Plant(s)

1, rue des Temps Modernes
77600 CHANTELOUP EN BRIE
FRANCE

4 Date of original qualification approval:

Date: 15/11/2011

Certificate Ref No. 315

5 ESCC Specifications used for Maintenance of qualification testing:

Generic: 3001 Issue : 3

Detail(s): 3001/037 Issue : 3

6 Deviations to LVT testing and Detail Specification used:

No ☒ Yes ☐ (supply details in Box 15)

Deviation from current Specifications:

No ☒ Yes ☐ (Supply details)

7 Qualification Extension Report reference and date:

Test Report 20-0495 i.B,
Test Report 20-0691 i.B,
Test Report 20-0717 i.B,
Test Report 20-0737 i.B,
Test Report 20-0810 i.B,
Test Report 20-0949 i.B,
Test Report 20-1190 i.B,
Test Report 21-0419 i.A,
Test Report 21-0403 i.A

8 Summary of procurement or equivalent test results during current validity period in support of this application (those to ESCC listed first)

User Name	Testing Level	LAT	Date code	Quantity Delivered
TESAT Spacecom (G) Thales Alenia Sp. (It.)		-	Deliveries from March 2020 to March 2022	2 921 parts
ALTER Tech. (Sp) EREMS (Fr.)		-		

9 **PID** changes since start of qualification

None ☐

Minor* ☐

Major* ☒ *Provide details in box: 19

10 Current **PID** Verified by: JPBussenot,CNES

Name of Excutive Representative

Ref No: 640.03.390

Issue: H Date: 09/03/2022

Rev Date: 02/03/2022

11 Current Manufacturing facilities surveyed by: D. Lacombe,ESA and JP Bussenot,CNES on 09/01/2020

(Name of Executive Representative) (Date)

Satisfactory: Yes ☒ No ☐ Explain Review of ceramic activities

Report Reference: 2020-0023019-CR-Bussenot-RT & Qualifications Céramique-Film-Exxelia-Janvier 2020, 22/01/2020

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Failure Analysis, DPA, NCCS available: Yes ☐ No ☒ (Supply data)

Ref. No's and purposes:

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The undersigned hereby certifies on behalf of the ESCC Executive - that the above information is correct; - that the appropriate documentation has been evaluated; - that full compliance to all ESCC requirements is evidence (except as stated in box 15;) - that the reports and data are available at the ESCC Executive and therefore applies on behalf of CNES as the responsible Executive Member for ESCC qualification status to be extended to the component(s) listed herein.

Date: 09/03/2022

JP. BUSSENOT

(Signature of the Executive Coordinator)

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Continuation of Boxes above:

Box 1 - - Test vehicles from available stocks submitted to Chart F4 ESCC 3001 issue 4 as described below:

Type	Lot Date Code	LVT1A	LVT1B	LVT2A	LVT2B	LVT3
CNC31 PE 10µF+/-10% 16 V	E20050017 dc 20.23	10	-	-	-	-
CNC31 PE 5.6µF +/-10% 25 V	MG313210200535 dc 21.11	10	-	10	-	-
CNC33 LE 22µF +/-10% 16 V	E20040029 dc 20.31	-	3	-	-	-
CNC33 PE 22µF +/-10% 16 V	E20050039 dc 20.22	-	3	-	-	-
CNC31 PE 10µF+/-10% 16 V	E20060120 dc 20.31	-	-	10	-	-
CNC33 PE 15µF+/-10% 16 V	E20050018 dc 20.21	-	-	-	6	-
CNC33 PE 22µF +/-10% 16 V	E20040030 dc 20.25	-	-	-	-	3
CNC34 PE 68µF +/-10% 16 V	MG313200700241 dc 20.49	-	-	-	-	3

In addition, one lot has been submitted to Chart F4 testing as part of the validation of the transfer of production of the ceramic material from MRA to FERRO (different production site):

CNC34 P E 68µF +/-10% 16V level FM – Lot P2004L003, dc 21.15

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Non compliance to ESCC requirements:

No.:	Specification	Paragraph	Non compliance

16

Additional tasks required to achieve full compliance for ESCC qualification or rationale for acceptability of noncompliance:

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Executive Manager Disposition

Application Approval: Yes ☒ No ☐

Action / Remarks:

Date:

Britta Schade

Digitally signed by Britta Schade
Date: 2022.03.31 14:55:59 +02'00'

B. Schade: Head of the Product Assurance and Safety Department

ANNEX 1: LIST OF TESTS DONE TO SUPPORT EXTENSION OF QUALIFICATION

Tests conducted in compliance with:

- ESCC 3001 generic specification; Chart F4 (for ESCC/QPL parts);
- PID- [redacted] (for ESCC/QML parts)
- TFD (for ESCC/QML parts)

Tests vehicle identification/description:

CNC31PE 10µF ±10% 16V, 300103705-106KX, DC 20.23, 20.31 (1) CNC31PE 5,6µF ±10% 25V, 300103705-565KA, DC 21.11	CNC33LE 22µF ±10% 16V, 300103715-226KX, DC 20.31 (2) CNC34PE 68µF ±10% 16V, 300103708-686KX, DC 20.49
CNC33PE 15µF ±10% 16V, 300103707-156KX, DC 20.21 CNC33PE 22µF ±10% 16V, 300103707-226KX, DC 20.22, 20.25	CNC34PE 68µF ±10% 16V, 300103708-686KX, DC 21.15 (validation of transfer of ceramic manufacturing to FERRO plant)

Detail Specification reference: 3001/037

Chart F4		Test	Tick when done	Conditions	Date Code	Tested Qty	N° of Rejects	Comments if not performed. Comments on Rejection
Subgroup 1	A	Rapid Change of Temperature	☒	IEC 60068-2-14, test Na	2023 2111 2115	10 10 20	0	
		Steady State Humidity (85/85) 1 000H	☒	ESCC 3001, Para 8.2	2023 2111 2115	10 10 20	0	10 parts on CNC31 lots with 3 stacked chips
		External Visual Inspection	☒	ESCC 20500	2023 2111 2115	10 10 20	0	
	B	Rapid Change Of Temperature	☒	IEC 60068-2-14, test Na	2022 2031 (2) 2115	3 3 6	0	
		Vibration	☒	IEC 60068-2-6, test Fc	2022 2031 (2) 2115	3 3 6	0	
		Shock	☒	IEC 60068-2-27, test Ea	2022 2031 (2) 2115	3 3 6	0	
		External Visual Inspection	☒	ESCC 20500	2022 2031 (2) 2115	3 3 6	0	
Subgroup 2	A	Operating Life	☒	IEC 60384-1 clause 4.23	2031 (1) 2111 2115	10 10 20	0	
	B	Capacitance-Temperature Characteristic	☒	ESCC 3001, Para 8.13	2021 2115	6 6	0	
Subgroup 3		Solderability	☒	IEC 60068-2-20, test Ta	2025 2049 2115	3 3 6	0	
		Resistance to Soldering Heat	☒	IEC 60068-2-20, test Tb	2025 2049 2115	3 3 6	0	
		Permanence of marking	☒	ESCC 24800	2025 2049 2115	3 3 6	0	
Additional tests			☐					
			☐					
			☐					

NOTES ON THE COMPLETION OF THE APPLICATION FORM FOR ESCC QUALIFICATION EXTENSION APPROVAL

ENTRIES

Form heading	shall indicate: - the title of the component as given in its detail specification or the name of the series, family; - the Executive Member; - the entering date; - the certificate number and its sequential suffix.
Box 1	shall provide details given in the table; in particular there shall be listed: - the variants or range of variants; - the range of components (the ESCC code is recommended to indicate the values or values range, the tolerance, the voltage, etc); the designation given in the detail specification as 'base on'; - under Test Vehicle enter either an ESCC code or the specific characteristic capable of identifying the component tested (e.g., voltage of coil for a relay); - under component similar enter a cross if relevant.
Box 2; 3 and 4	As per QPL entry; otherwise, an explanation of the changes must be supplied.
Box 5	Will show the ESCC Generic and Detail specifications, including issue number and revision letter, current at the time the tests reported were performed. If the specifications are different from those current on the date of the application, see Box 6.
Box 6	Will show the deviations from the Generic and Detail Specifications listed in Box 5, in particular deviations from testing. In case of deviations this must be listed in Box 15. In case the referenced specification in Box 5 have currently a different issue and/or revision indicate also whether the test data deviates or not from such current documents.
Box 7	Must reference the report(s) supplied in support of the application.
Box 8	Should provide the details of procurement to the full ESCC System, documentation of all of which should already have been delivered to the ESCC Executive under the terms of the relevant Generic Specification. An appropriate table has been drawn in this box.
Box 9	If the PID evolved after the Original Qualification or after the last Extension of Qualification, adequate details of such evolution shall be provided together with the reasons for the changes. Major changes shall be clearly marked.
Box 10	Identify the current PID issue status, date and actual date of verification. The date of verification of the current PID should be arranged as close as possible to the required date of extension.
Box 11	This box can be completed only after a physical visit to the plant to confirm that no unexplained changes occurred and that the practices, procedures, material, etc. used in manufacturing the components are as described in the PID. This survey shall be carried out in accordance with the requirements of ESCC Basic Specification No. 20200 and its findings shall be recorded.
Box 12	Provide details of, or reference to, any Destructive Physical Analysis (DPA) and Failure Analysis reports as well as any Nonconformance(s) (NCCS) occurred during the qualification validity period, stating if established corrective action have produced satisfactory results.
Box 13	Enter only the name of the Executive Member (i.e., CNES, DLR, ESTEC, etc.) and the signature of the responsible Executive Coordinator.
Box 14	To be used when there is a need to expand any of the boxes from 1 through 12. Identify box affected and reference the Box 14 in the relevant Box. Box 14 can be broken into 14a, 14b, etc. if several boxes have to be expanded.
Box 15	Fill in Table as requested.
Box 16	Any additional action deemed necessary by the Executive Member to bring the submitted data to a standard likely to be accepted by the ESCC Executive should be listed herein or the reason(s) to accept the noncompliance.
Box 17	All Executive Manager recommendations on the application itself, special conditions or restrictions, modifications of the QPL or QML entry, letters to the manufacturer, etc. shall be entered clearly in Box 19, signed by the representative for ESA, and dated.
Box 18	Fill in Table as requested.
Box 19	Confidential Details of PID changes including those of a confidential nature, shall be provided.
Box 20	State noncompliance with reference to specification(s) and paragraph(s). To simplify reference in Box 16 each nonconformance shall be sequentially numbered. If relevant state 'None'.
Box 21	Any additional action deemed necessary by the Executive Member to bring the submitted data to a standard likely to be accepted by the ESCC Executive should be listed herein or the reason(s) to accept the noncompliance.
Box 22	Additional Comments.