		APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL			Page 1 Appl. No. 324B rev2	
Component Title: Capacitors, Ceramic, Chip, Type II, sizes 0402 to 2220		Executive Member: CNES			Date: 08/08/2018	
Components (including series and families) submitted for Extension of Qualification Approval:						
1						
ESCC COMPONENT NO.	VARIANTS	RANGE OF COMPONENTS	BASED ON	TEST VEHICLE / S	COMPONENT SIMILAR	
3009/008 3009/039 3009/009 3009/039	06 & 07 02 & 14 06 & 07 04 & 16	All values 16V to 100V	CNC2 02S CNC2 04S CNC4 02S CNC4 04S	CNC2 02SC – 154KA 300903904C-224KC	See box 14 for qualified ranges.	
3009/010 3009/039 3009/011 3009/039	06 & 07 05 & 17 06 & 07 06 & 18	All values 16V to 100V	CNC6 02S CNC6 04S CNC7 02S CNC7 04S	300901007C-824KC 300903918C-105KE		
3009/023 3009/039 3009/038 3009/039	06 & 07 03 & 15 06 & 07 01 & 13	All values 16V to 100V	CNC12 02S CNC12 04S CNC14 02S CNC14 04S	300903806C-103KC 300903915C-105KX		
3009/039 3009/043	25 & 26 06	All values 10V to 25V All values 10V to 25V	CNC19 04S CNC19 02S	300903925-822JX 300904306-123JY 300904306-391JC (*) 300904306-562JA		
Component Manufacturer EXXELIA Technologies		Location of Manufacturing Plant(s) EXXELIA 1, rue des Temps Modernes 77600 CHANTELOUP EN BRIE FRANCE		Date of original qualification approval: Date: 24/10/2012 Certificate Ref No. 324		
5		6		7		
ESCC Specifications used for Maintenance of qualification testing: Generic: 3009 Issue: 1 Detail(s): 3009/010 Issue: 3 3009/011 3 3009/038 1 3009/039 1 3009/039 2 3009/043 3		Deviations to LVT testing and Detail Specification used: No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> (supply details in Box 15) Deviation from current Specifications: No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> (Supply details)		Qualification Extension Report reference and date: Reports 15/0679 & 16/0743 – CNC7 04S 1µF, 100V Reports 15/0942 & 16/0740 – CNC6 02S 820nF, 50V Reports 16/0009 & 16/0742-A – CNC12 04S 1µF, 16V Reports 16/0064 & 16/0738-A – CNC2 02S 150nF, 25V Reports 16/0072 & 16/0741-A – CNC4 04S 220nF, 50V Reports 16/0111 & 16/0739-A – CNC14 02S 10nF, 50V Report QUAL 0402-04-2017, 25 August 2017 SERMA Analysis Report 16-3722-100, October 2016 Validation finition 02 bouts de gamme 16V, May 2018		
8						
Summary of procurement or equivalent test results during current validity period in support of this application (those to ESCC listed first)						
Project Name	Testing Level	LAT	Date code	Quantity Delivered		
ALTER Technology Thales Alenia Space EREMS ...	C	-	192 lots	66 200 pièces (42,5% 0603, 30% 0805 15% 1206, 7% 1210, 5% 1812)		
	EM	-	25 lots			
	B	-	3 lots			
PID changes since start of qualification None <input type="checkbox"/> Minor* <input checked="" type="checkbox"/> Major* <input type="checkbox"/> *Provide details in box:		Current PID Verified by: CNES Ref No: PID 624.03.390 Issue: Rev J Rev Date: 01/08/2018		Name of Executive Representative Date: 02/08/2018		
19						
11						
Current Manufacturing facilities surveyed by: ESA, CNES on 31/01/2018 (Name of Executive Representative) (Date)						
Satisfactory: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Explain						
Report Reference: CNES report DSO/AQ/CQ-2018.0003335 dated 05/02/2018						



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

Ref. No's and purposes: NCCS 2CETE605 dealing with delay in delivering maintenance data is appended

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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: 09/08/2018

JP. BUSSENOT

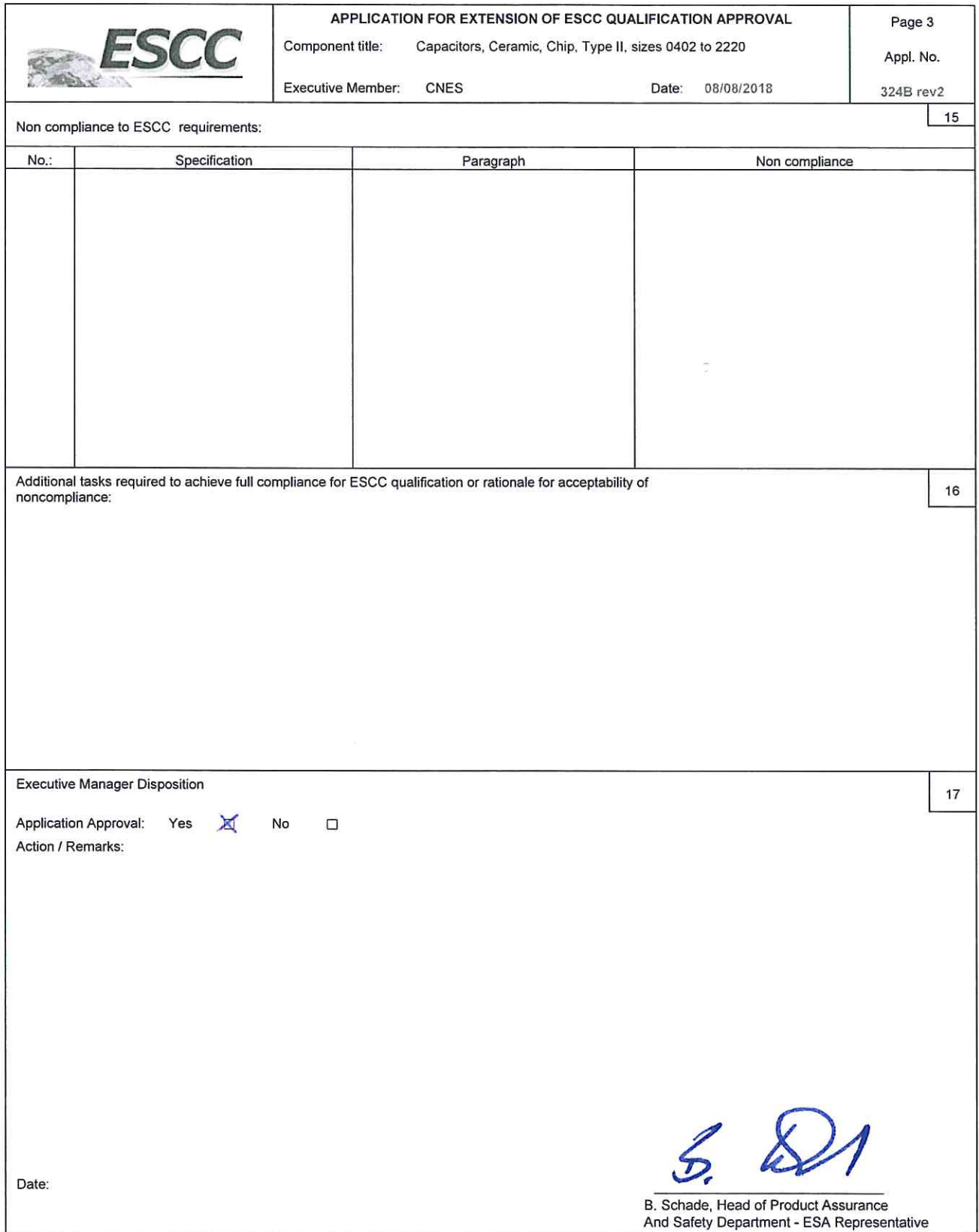
(Signature of the Executive Coordinator)

Continuation of Boxes above:

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Box 1, Range of Components :

Style	Detail Spec.	Model	Variants	Capacitance Range (pF)	Rated Volt. (V)	Tolerance (±%)
0805	3009/008	CNC2 02S	06	6 800 to 150 000	16	5, 10, 20
				6 800 to 100 000	25	
				100 to 47 000	50	
				68 to 10 000	100	
	3009/039	CNC2 04S	02	6 800 to 390 000	16	
				6 800 to 150 000	25	
				100 to 100 000	50	
				68 to 47 000	100	
1210	3009/009	CNC4 02S	06	6 800 to 150 000	16	5, 10, 20
				6 800 to 100 000	25	
				100 to 47 000	50	
				68 to 10 000	100	
	3009/039	CNC4 04S	04	6 800 to 390 000	16	
				6 800 to 150 000	25	
				100 to 100 000	50	
				68 to 47 000	100	
1812	3009/010	CNC6 02S	06	6 800 to 390 000	16	5, 10, 20
				6 800 to 150 000	25	
				100 to 100 000	50	
				68 to 47 000	100	
	3009/039	CNC6 04S	05	6 800 to 390 000	16	
				6 800 to 150 000	25	
				100 to 100 000	50	
				68 to 47 000	100	
2220	3009/011	CNC7 02S	06	6 800 to 390 000	16	5, 10, 20
				6 800 to 150 000	25	
				100 to 100 000	50	
				68 to 47 000	100	
	3009/039	CNC7 04S	06	6 800 to 390 000	16	
				6 800 to 150 000	25	
				100 to 100 000	50	
				68 to 47 000	100	



				22 000 to 1 000 000 22 000 to 270 000	50 100	
			18	150 000 to 3 900 000 150 000 to 2 200 000 22 000 to 1 800 000 22 000 to 1 000 000	16 25 50 100	
1206	3009/023	CNC12 02S	06	10 000 to 270 000 10 000 to 180 000 470 to 82 000 470 to 27 000	16 25 50 100	5, 10, 20
				10 000 to 1 000 000 10 000 to 270 000 470 to 180 000 470 to 120 000	16 25 50 100	
				10 000 to 270 000 10 000 to 180 000 470 to 82 000 470 to 27 000	16 25 50 100	
				10 000 to 1 000 000 10 000 to 270 000 470 to 180 000 470 to 120 000	16 25 50 100	
	3009/039	CNC12 04S	03	10 000 to 270 000 10 000 to 180 000 470 to 82 000 470 to 27 000	16 25 50 100	
				10 000 to 1 000 000 10 000 to 270 000 470 to 180 000 470 to 120 000	16 25 50 100	
				10 000 to 270 000 10 000 to 180 000 470 to 82 000 470 to 27 000	16 25 50 100	
				10 000 to 1 000 000 10 000 to 270 000 470 to 180 000 470 to 120 000	16 25 50 100	
0603	3009/038	CNC14 02S	06	390 to 33 000 390 to 22 000 10 to 10 000 10 to 2 700	16 25 50 100	5, 10, 20
				390 to 100 000 390 to 33 000 10 to 22 000 10 to 12 000	16 25 50 100	
				390 to 33 000 390 to 22 000 10 to 10 000 10 to 2 700	16 25 50 100	
				390 to 100 000 390 to 33 000 10 to 22 000 10 to 12 000	16 25 50 100	
	3009/039	CNC14 04S	01	390 to 33 000 390 to 22 000 10 to 10 000 10 to 2 700	16 25 50 100	
				390 to 100 000 390 to 33 000 10 to 22 000 10 to 12 000	16 25 50 100	
0402	3009/043	CNC19 02S	06	68 to 12 000 68 to 8 200 68 to 5 600	10 16 25	5, 10, 20
	3009/039	CNC19 04S	25	68 to 12 000 68 to 8 200 68 to 5 600	10 16 25	

Box 7. Qualification Extension Report

Testing originally performed by EXXELIA did not conform to the agreement made with CNES, i.e. to perform a single LAT1 on the two lots 0805 150nF 25V DC1603 and 0603 10nF 50V DC 1606 (2 x 21 parts) and another single LAT1 on the two Ceruflex lots 1206 1µF 16V DC 1551 and 1210 220nF 50V DC 1604 (2 x 21 parts). EXXELIA only performed environmental / mechanical tests on these two lots and data were therefore extended to LAT1 as reflected in EXXELIA reports 16/0738-A, 16/0739-A, 16/0741-A and 16/0742-A, all dated January 2017. NCCS 2CETE605 refers.

EXXELIA report "Validation de la finition EXXELIA 02 sur les bouts de gamme QPL 16V" shows that, since denser 10200067 termination was qualified (CNES Email dated 07/03/2014, EXXELIA report CHGT MP 13-343-302/A dated 14/01/2014 and PID Ind. E dated January 2014 refer), the limitation of X7R / 2R1 variant 07 16V ranges in ESCC 3009/038 (0603), ESCC3009/008 (0805) and ESCC 3009/023 (1206) 16V compared to their CerUflex counterparts in ESCC 3009/039 was no longer justified. The above Table is up-dated accordingly.
Note that Test Vehicles submitted to joint Evaluation / Qualification testing were not submitted to ESCC Chart F2/F3 testing and that another termination than 10200067, used by EXXELIA but not proposed for qualification at this stage, was introduced in these tests, as shown in EXXELIA report.



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

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Tests conducted in compliance with:

- ESCC 3009 generic specification; Chart V (for ESCC/QPL parts);
- Or PID-TFD (for ESCC/QML parts)

Tests vehicle identification/description:

CNC2 02S 150nF 25V DC 1603 (*)	CNC7 04S 1µF 100V DC 1538
CNC4 04S 220nF 50V DC 1604	CNC6 02S 820nF 50V DC 1549
CNC12 04S 1µF 16V DC 1551	CNC14 02S 10nF 50V DC 1606

Detail Specification reference: 3009/010/038/039 and (*)EFD Specification 590.01.390 Issue E

Chart V	Test	Tick when done	Conditions	Date Code	Tested Qty	No. of Rejects	Comments if not performed. Comments on Rejection
Environmental / Mechanical Subgroup	Mounting	<input checked="" type="checkbox"/>	IEC 384-1	1603 1604 1606 1551 1538	12 x 5	0	
	Adhesion	<input checked="" type="checkbox"/>	ESCC 3009, Para. 9.5	1603 1604 1606 1551 1538	4 x 5	0	
	Rapid Change of Temperature	<input checked="" type="checkbox"/>	IEC 68-2-14	1603 1604 1606 1551 1538	8 x 5	0	
	Visual Inspection	<input checked="" type="checkbox"/>	ESCC 3009, Para. 9.1	1603 1604 1606 1551 1538	12 x 5	0	
	Climatic Test Sequence	<input checked="" type="checkbox"/>	ESCC 3009, Para. 9.8	1603 1604 1606 1551 1538	12 x 5	0	
Endurance Subgroup	Mounting	<input checked="" type="checkbox"/>	IEC 384-1	1549 1538 1603 1606 1604 1551	20 20 10 10 10 10	0	

	Operating Life	<input checked="" type="checkbox"/>	ESCC 3009, Para. 9.10	1549 1538 1603 1606 1604 1551	20 20 10 10 10 10	0	1 000H
	Electrical Measurements during Endurance Testing	<input checked="" type="checkbox"/>	ESCC 3009, Para. 9.4.5	1549 1538 1603 1606 1604 1551	20 20 10 10 10 10	0	
Electrical Subgroup (Elect. Meas.)	Mounting	<input checked="" type="checkbox"/>	IEC 384-1	1538 1603 1606 1604 1551	6 3 3 3 3	0	
	Temperature Coefficient (Type I)	<input type="checkbox"/>	ESCC 3009, Para. 9.11				NA
	Temperature Characteristic (Type II)	<input checked="" type="checkbox"/>	ESCC 3009, Para. 9.12	1538 1603 1606 1604 1551	6 3 3 3 3	0	
Electrical Subgroup (Ass. / Capab. Tests)	Solderability	<input checked="" type="checkbox"/>	IEC 68-2-20	1538 1603 1606 1604 1551	4 2 2 2 2	0	
	Permanence of Marking	<input type="checkbox"/>	ESCC 24800				NA
Additional Tests		<input type="checkbox"/>					
		<input type="checkbox"/>					
		<input type="checkbox"/>					



APPLICATION FOR ESCC QUALIFICATION APPROVAL

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Executive Member: CNES

CNES

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ANNEX 1 bis: LIST OF TESTS DONE TO SUPPORT QUALIFICATION OF 0402 chip size

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Tests conducted in compliance with:


- ESCC 3009 generic specification; Chart IV (for ESCC/QPL parts);
- Or PID-TFD (for ESCC/QML parts)

Tests vehicle identification/description:

	CNC19 02S 390pF 50V DC 1611
CNC19 04S 8,2nF 16V DC 1614	CNC19 02S 12nF 10V DC 1613 CNC19 02S 5.6nF 25V DC 1611


Detail Specification reference: 3009/039/043

Chart F4	Test	Tick when done	Conditions	Date Code	Tested Qty	No. of Rejects	Comments if not performed. Comments on Rejection
Environmental / Mechanical Subgroup	Mounting	<input checked="" type="checkbox"/>	IEC 60384-1, 4.33	1614 1611 1613 1611	26 26 26 26	0 2 7 2	11 tombstoning parts
	Rapid Change of Temperature	<input checked="" type="checkbox"/>	IEC 60068-2-14	1614 1611 1613 1611	26 24 19 24	0	
	Steady State Humidity	<input checked="" type="checkbox"/>	ESCC 3009, Para. 8.2	1614 1611 1613 1611	26 24 19 (*) 24	0	(*) 19 parts only instead of 20 min. requested in 3009. No additional test required due to overall positive results
	Visual Inspection	<input checked="" type="checkbox"/>	ESCC 3009, Para. 8.5	1614 1611 1613 1611	26 24 19 24	0	
Endurance Subgroup	Mounting	<input checked="" type="checkbox"/>	IEC 60384-1, 4.33	1614 1611 1613 1611	52 52 52 52	0 0 2 2	4 tombstoning parts
	Operating Life	<input checked="" type="checkbox"/>	ESCC 3009, Para. 8.9	1614 1611 1613 1611	52 52 50 50	0	
Electrical Subgroup	Mounting	<input checked="" type="checkbox"/>	IEC 60384-1, 4.33	1614 1611 1613 1611	6 6 6 6	0 1 0 1	2 unsoldered parts (positioning problem)
	Capacitance-Temperature Characteristics	<input checked="" type="checkbox"/>	ESCC 3009, Para. 8.10	1614 1611 1613 1611	6 6 6 6	0	Done prior to mounting
	Robustness of Terminations	<input checked="" type="checkbox"/>	ESCC 3009, Para. 8.7	1614 1611 1613 1611	6 5 6 5	0	
Ass. / Capab. Subgroup	Solderability	<input checked="" type="checkbox"/>	IEC 60068-2-58	1614 1611 1613 1611	6 6 6 6	0	
	Permanence of Marking	<input type="checkbox"/>	ESCC 24800				NA

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ANNEX 1 ter : LIST OF TESTS DONE TO SUPPORT EXTENSION OF 0603, 0805, 1206 X7R/2R1 variant 07 ranges		
Tests conducted in compliance with: <ul style="list-style-type: none"> - ESCC 3009 generic specification; Chart IV (for ESCC/QPL parts); - Or PID-TFD (for ESCC/QML parts) 		
Tests vehicle identification/description:		
CNC12 02S 105 16V Lot V1702L004 (1µF/1206)	CNC12 02S 105 16V Lot V1702L005 (1µF/1206)	
CNC14 02S 104 16V Lot V1602L002 (100nF/0603)		
Detail Specification reference: 3009/023, 3009/038		

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Chart F4	Test	Tick when done	Conditions	Date Code	Tested Qty	No. of Rejects	Comments if not performed. Comments on Rejection
Environmental / Mechanical Subgroup	Mounting	<input checked="" type="checkbox"/>	IEC 60384-1, 4.33	V1702L004 V1702L005 V1602L002	26 26 26	0	
	Rapid Change of Temperature	<input checked="" type="checkbox"/>	IEC 60068-2-14	V1702L004 V1702L005 V1602L002	26 26 26 (*)	0	(*) 100 cycles instead of 10
	Steady State Humidity	<input checked="" type="checkbox"/>	ESCC 3009, Para. 8.2	V1702L004 V1702L005 V1602L002	26 (**) 26 (**) 26	0	(**) Test extended to 2000H Lot V1702L004: 2 meas. Pb after 240H not confirmed either after 500H nor later
	Visual Inspection	<input checked="" type="checkbox"/>	ESCC 3009, Para. 8.5	V1702L004 V1702L005 V1602L002	26 26 26	0	
Endurance Subgroup	Mounting	<input checked="" type="checkbox"/>	IEC 60384-1, 4.33	V1702L004 V1702L005 V1602L002	52 + 26 52 + 26 52	0	
	Operating Life	<input checked="" type="checkbox"/>	ESCC 3009, Para. 8.9	V1702L004 V1702L005 V1602L002	52 + 26 52 + 26 26	0 0 1	2000H / 2Un when 52 parts 1000H / 4Un when 26 parts Lot V1602L002 : 1 early failure after 168H / 4Un
Electrical Subgroup	Mounting	<input checked="" type="checkbox"/>	IEC 60384-1, 4.33	V1702L004 V1702L005 V1602L002	6 6 6	0	
	Capacitance-Temperature Characteristics	<input type="checkbox"/>	ESCC 3009, Para. 8.10				Not performed at this stage, normally done prior to mounting
	Robustness of Terminations	<input checked="" type="checkbox"/>	ESCC 3009, Para. 8.7	V1702L004 V1702L005 V1602L002	6 6 6	0	
Ass. / Capab. Subgroup	Solderability	<input checked="" type="checkbox"/>	IEC 60068-2-58	V1702L004 V1702L005 V1602L002	6 6 6	0	
	Permanence of Marking	<input type="checkbox"/>	ESCC 24800				NA

	<p align="center">APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL</p> <p>Component title: Capacitors, Ceramic, Chip, Type II, sizes 0402 to 2220</p> <p>Executive Member: CNES Date: 08/08/2018</p>	<p align="center">Page 6</p> <p align="center">Appl. No.</p> <p align="center">324B rev2</p>
<p align="center">NOTES ON THE COMPLETION OF THE APPLICATION FORM FOR ESCC QUALIFICATION EXTENSION APPROVAL</p>		
<p>ENTRIES</p> <p>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.</p>		
<p>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.</p>		
<p>Box 2; 3 and 4 As per QPL entry; otherwise, an explanation of the changes must be supplied.</p>		
<p>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.</p>		
<p>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.</p>		
<p>Box 7 Must reference the report(s) supplied in support of the application.</p>		
<p>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.</p>		
<p>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.</p>		
<p>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.</p>		
<p>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.</p>		
<p>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.</p>		
<p>Box 13 Enter only the name of the Executive Member (i.e., CNES, DLR, ESTEC, etc.) and the signature of the responsible Executive Coordinator.</p>		
<p>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.</p>		
<p>Box 15 Fill in Table as requested.</p>		
<p>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.</p>		
<p>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.</p>		
<p>Box 18 Fill in Table as requested.</p>		
<p>Box 19 Confidential Details of PID changes including those of a confidential nature, shall be provided.</p>		
<p>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'.</p>		
<p>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.</p>		
<p>Box 22 Additional Comments.</p>		