



**APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL**

Component Title: Capacitors, Fixed, Chip, Ceramic Dielectric, type I, based on types 0805, 1206, 1210, 1812, 2220  
 Executive Member: CNES Date: 05/05/2015

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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
3009 003 3009 004	03, 06	See box 14	0805 1210	300900306C1501FE 300900406C6201JE 300900406C1002FC	
3009 005 3009 006	03, 06		1812 2220	300900606C2202FE 300900606C3302FE	X
3009 022	03, 06		1206	300902206C1001FE	

Component Manufacturer TPC A division of AVX Corporation	2	Location of Manufacturing Plant(s) Avenue du Colonel Prat 21850 SAINT APOLLINAIRE – France	3	Date of original qualification approval: Date: 01/02/1983  Certificate Ref No. 109	4
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ESCC Specifications used for Maintenance of qualification testing: Generic: 3009 Issue: 1  Detail(s): 3009/003 Issue: 4 3009/004 3009/006 3009/022	5	Deviations to LVT testing and Detail Specification used: No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> (supply details in Box 15)  Deviation from current Specifications:  No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> (Supply details)	6	Qualification Extension Report reference and date: Dossier de maintien de la qualification 109L (Type 1), 29/01/2015	7
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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
Sales in Annex2 box 22				

PID changes since start of qualification None <input type="checkbox"/> Minor* <input checked="" type="checkbox"/> Major* <input type="checkbox"/> *Provide details in box:	9	Current PID Verified by: CNES Name of Executive Representative Ref No: 1G2 PID 100 15WQ Issue: 15 Date: Rev Date: 28/04/2015	10
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Current Manufacturing facilities surveyed by: ESA and CNES on 19/04/2012 (Name of Executive Representative) (Date)	11
Satisfactory: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Explain See appended status of actions	
Report Reference: QES/LB/120601, 25/06/2012	



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

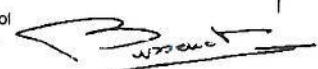
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Ref. No's and purposes:

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.

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Date: 13/05/2015

  
JP. BUSSENOT  
(Signature of the Executive Coordinator)

Continuation of Boxes above:

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Style	Model	Detail Spec.	Variants (1)	Capacitance Range (pF)	Rated Volt. (V)	Tolerance (±%)	TC (ppm/°C)
0805	A_12C	3009/003	03, 06	4.7 to 9.1 10 to 1 500	50, 100	0.5 pF 1, 2, 5, 10	± 30
1206	A_20C	3009/022	03, 06	10 to 3 900	50, 100	1, 2, 5, 10	± 30
1210	A_13C	3009/004	03, 06	22 to 6 800 8 200 to 10 000	50, 100 50	1, 2, 5, 10	± 30
1812	A_14C	3009/005	03, 06	100 to 15 000	50, 100	1, 2, 5, 10	± 30
2220	A_15C	3009/006	03, 06	470 to 33 000	50, 100	1, 2, 5, 10	± 30

(1) Variant 01 (AgPd) replaced in 2013 with variant 03 (AgPdPt) is removed from TPC PID



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Non compliance to ESCC requirements:

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No.:	Specification	Paragraph	Non compliance
1	3009		CECC equivalent data provided – LVT performed on products designed, manufactured and screened against ESCC specifications

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

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ESCC Chart V requirements have been compared to CECC 32100 periodic testing applicable to both type I (NPO) and type II (2C1 and X7R) ceramics :  
- In ESCC 3009 LAT 1, Environmental / Mechanical Subgroup, 12 Components must be mounted and subjected to Adhesion (4parts) and Rapid Change of Temperature (8 parts, 10 cycles) followed with Visual Inspection and Climatic Sequence (12 parts),  
- Using CECC 32100 and 32101-801, for each ceramic type (NPO and X7R at TPC)  
    . 20 parts must be mounted and subjected to Adhesion followed with Rapid Change of Temperature (5 cycles) and Climatic Sequence (1 reject allowed)  
    . 45 parts must be mounted and subjected to steady state damp heat : 3 times 15 parts at rated voltage, 5V and with no voltage applied (1 reject allowed)  
In addition 15 parts are mounted and subjected to the 85°C / 85%RH test under 1.5V during 500hrs (1 reject allowed). CECC requires many other tests which are not mentioned since they are not relevant to ESCC maintenance activities.  
AVX TPC has modified CECC life test conditions, originally 1,5 Un – 1 000 hours, to performed the test at 2 Un on 40 parts as well as Rapid Change of Temperature has been extended to 10 cycles in order to be compliant with ESCC testing requirements.  
The combination of the CECC Environmental / Mechanical / Endurance periodic testing and ESCC LAT1 / LAT2 is considered to form a good basis for this maintenance activity.

Executive Manager Disposition

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Application Approval: Yes  No

Action / Remarks:

Date:

Signature, ESA Representative



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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:

300900306C1501FE – DC1412	300900406C6201JE – DC1413 300900406C1002FC – DC1404
300900606C2202FE – DC1342 300900606C3302FE – DC1417	300902206C1001FE – DC1411

Detail Specification reference: 3009/003/004/006/022

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	1412 1411 1413 1404 1342	10 20 20 20 20	0	
	Adhesion	<input checked="" type="checkbox"/>	ESCC 3009, Para. 9.5	1412 1411 1413 1404 1342	10 20 20 20 20	0	
	Rapid Change of Temperature	<input checked="" type="checkbox"/>	IEC 68-2-14	1412 1411 1413 1404 1342	10 20 20 20 20	0	
	Visual Inspection	<input checked="" type="checkbox"/>	ESCC 3009, Para. 9.1	1412 1411 1413 1404 1342	10 20 20 20 20	0	
	Climatic Test Sequence	<input checked="" type="checkbox"/>	ESCC 3009, Para. 9.8	1412 1411 1413 1404 1342	10 20 20 20 20	0	
Endurance Subgroup	Mounting	<input checked="" type="checkbox"/>	IEC 384-1	1412 1411 1413 1404 1342 1417	20 40 40 40 40 28	0	

	Operating Life	<input checked="" type="checkbox"/>	ESCC 3009, Para. 9.10	1412 1411 1413 1404 1342 1417	20 40 40 40 40 28	0	
	Electrical Measurements during Endurance Testing	<input checked="" type="checkbox"/>	ESCC 3009, Para. 9.4.5	1412 1411 1413 1404 1342 1417	20 40 40 40 40 28	0	
Electrical Subgroup (Elect. Meas.)	Mounting	<input type="checkbox"/>	IEC 384-1				
	Temperature Coefficient (Type I)	<input checked="" type="checkbox"/>	ESCC 3009, Para. 9.11	1409(*) 1413 1442(*) 1509(*)	5 5 5 5		(*) test vehicles 300900306C1201JC, 300900606B3302JC, 300900406C1002FC
	Temperature Characteristic (Type II)	<input type="checkbox"/>	ESCC 3009, Para. 9.12				Non Applicable
Electrical Subgroup (Ass. / Capab. Tests)	Solderability	<input checked="" type="checkbox"/>	IEC 68-2-20	1411(*) 1413(*)	10 10	0	(*) Resistance to Soldering heat
	Permanence of Marking	<input type="checkbox"/>	ESCC 24800				Non Applicable
Additional Tests	Low Voltage 85/85 Humidity	<input checked="" type="checkbox"/>	CECC 32101-801	1412 1411 1413 1404 1342	15 15 15 15 15	0	1.5V, 1 000 hours
	85/85 Humidity	<input checked="" type="checkbox"/>	CECC 32101-801	1411 1413 1342	15 15 15	0	50V, 1 000 hours
	40/93 Humidity 56 days	<input type="checkbox"/>	CECC 32101-801	1411 1413 1404 1342	3x15 2x15 3x15 2x15	0	0V, 5V, Un 5V, Un 0V, 5V, Un 5V, Un



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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.