		APPLICATION FOR ESCC QUALIFICATION APPROVAL				Page 1 366	
Component Title: Polymer Multi Anode Tantalum Capacitor based on TCS type		Executive Member: ESA		Date: 27/03/2020			
Components (including series and families) submitted for Qualification Approval						1	
ESCC COMPONENT. NO.	VARIANTS	RANGE OF COMPONENTS	BASED ON	TEST VEHICLE / S	COMPONENT SIMILAR		
301200601 226MV 0050	01-E case size	22-470 uF, 6,3-35V	TCS	E case size - 22/35	And all parts defined in ESCC 3012/006, issue 2		
301200601 686 MD0025				E case size - 68/20			
301200601 227MC 0020				E case size - 220/16			
301200601 477MJ 0012				E case size - 470/6.3			
Component Manufacturer AVX Czech Republic s.r.o.		2	Location of Manufacturing Plant Dvorakova 328 Lanskrout 56301 Czech republic		3	ESCC Specification used for Qualification Generic: ESCC 3012 Issue: 3 Detail/s: ESCC 3012/006 Issue: 2	4
Qualification Report Reference and date: Project 40000123320/18/NL/GLC/fk Polymer Multi Anode Tantalum Capacitors Qualification Date: 27/03/2020			5	PID used for manufacturing Qualification Lot Ref No: PID 100, PID 100_006 Issue: 4+1 Date: 1.11.2018+10.10.2019			6
PID changes since start of qualification None <input type="checkbox"/> Minor* <input checked="" type="checkbox"/> Major* <input type="checkbox"/> (* Details not published, provided in confidential annex 2.)			7	Current PID Verified by: ESA Name of Executive Representative Agency Ref No: PID 100 and PID 100_006 Issue: issue 5 and issue 2 Date: Feb 2020 and Feb 2020			8
Current Manufacturing facilities surveyed by: ESA (Name of Executive Responsible Agency) AVXLAN-AUD-2015-02						9	
Report Reference Satisfactory: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Explain			ESCC audit previously performed in 2015 for TES and TAJ capacitors considered relevant as PID 100 being the same for the TCS type. TCS type specific processes were also witnessed by ESA during a technical visit in November 2018 (minutes MOM-4000123320).				
Quality and Reliability Data Evaluation testing performed Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Report Ref. No.: EVALUATION TEST REPORT Project 40000123320/18/NL/G LC/fk Polymer Multianode Tantalum Capacitor Qualification Date: 01/04/2019 Equivalent Data: Certification:			Failure analysis, DPA, NCCS available Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> CA performed in ESTEC lab report CA0003497, issued 10-07-2019 Ref Nos. and purpose:			10	



APPLICATION FOR ESCC QUALIFICATION APPROVAL

Component Title: Polymer Multi Anode Tantalum Capacitor based on TCS type

Executive Member: ESA

Date: 27/03/2020

Page 2

366.

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 13; that the reports and data are available at the ESCC Executive and therefore applies for ESCC qualification status to be given to the component(s) listed herein.

Date: 24/04/2020

Digitally signed by
Anastasia Pesce
Date: 2020.04.24 10:10:32
+02'00'

(Signature of the Executive Coordinator)

Continuation of Boxes above: (Only non-confidential comments)

1. Selection of codes

based on:

- Coverage of different case sizes
- Coverage of voltage range
- Coverage of different powder group

Selected codes:

E case size – 470/6.3 – the lowest voltage and highest capacitance, corner code, process 1, powder

A, FR2,8

E case size - 220/16 - middle of matrix, process 1, powder A, FR2,4

Evaluation test results

E case size - 68/20 – process 1, powder B, FR2,6

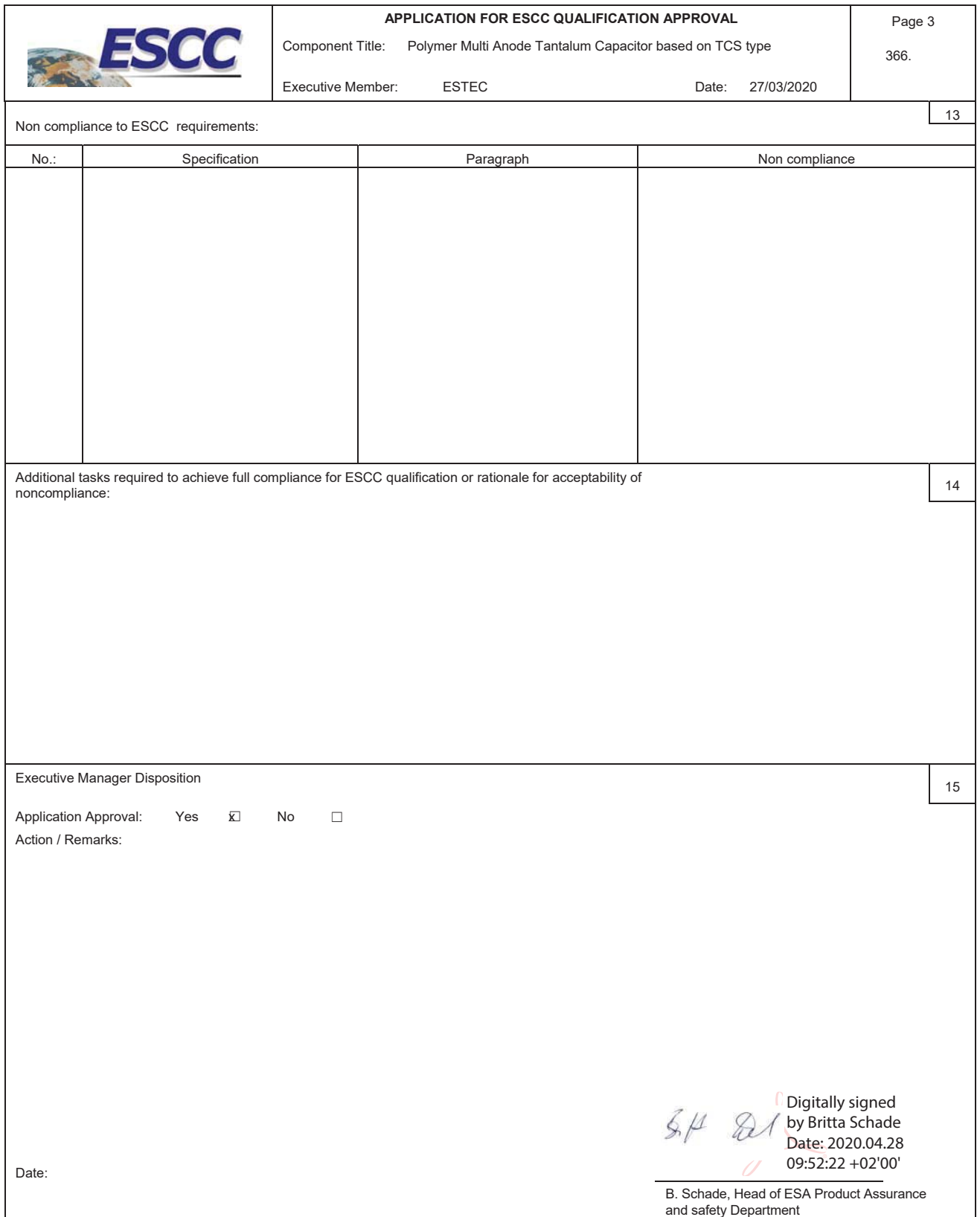
Evaluation test results

E case size - 22/35 – the lowest capacitance and highest voltage, corner code, process 2, powder C,

FR3,0

11

12





APPLICATION FOR ESCC QUALIFICATION APPROVAL

Component Title: Polymer Multi Anode Tantalum Capacitor based on TCS type

Executive Member:

ESTEC

Date: 27/03/2020

Page 4

366

ANNEX 1: LIST OF TESTS DONE TO SUPPORT QUALIFICATION

16

Tests conducted in compliance with:

- ESCC 3012 generic specification; Chart IV (for ESCC/QPL parts);
- Or PID-TFD (for ESCC/QML parts)

Tests vehicle identification/description:

Detail Specification reference:

Chart IV	Test	Tick when done	Conditions	Date Code	Tested Qty	No. of Rejects	Comments if not performed. Comments on Rejection
Environmental / Mechanical Subgroup (I)	Mounting	<input checked="" type="checkbox"/>	IEC 384-1	E22/35 -1914 E68/20 – 1902 E220/16 – 1844 E470/6 – 1914	12x4	0	
	Adhesion	<input checked="" type="checkbox"/>	ESCC 3012, Para. 9.10	E22/35 -1914 E68/20 – 1902 E220/16 – 1844 E470/6 – 1914	12x4	0	
	External Visual Inspection	<input checked="" type="checkbox"/>	ESCC 20500	E22/35 -1914 E68/20 – 1902 E220/16 – 1844 E470/6 – 1914	12x4	0	
	Climatic Sequence	<input checked="" type="checkbox"/>	ESCC 3012, Para. 9.13	E22/35 -1914 E68/20 – 1902 E220/16 – 1844 E470/6 – 1914	12x4	0	
Environmental / Mechanical Subgroup (II)	Mounting	<input checked="" type="checkbox"/>	IEC 384-1	E22/35 -1914 E68/20 – 1902 E220/16 – 1844 E470/6 – 1914	12x4	0	
	Rapid Change of Temperature	<input checked="" type="checkbox"/>	IEC 68-2-14	E22/35 -1914 E68/20 – 1902 E220/16 – 1844 E470/6 – 1914	12x4	0	
	Vibration	<input checked="" type="checkbox"/>	IEC 68-2-6	E22/35 -1914 E68/20 – 1902 E220/16 – 1844 E470/6 – 1914	12x4	0	
	Shock or Bump	<input checked="" type="checkbox"/>	IEC 68-2-27 or IEC 68-2-29	E22/35 -1914 E68/20 – 1902 E220/16 – 1844 E470/6 – 1914	12x4	0	
	External Visual Inspection	<input checked="" type="checkbox"/>	ESCC 20500	E22/35 -1914 E68/20 – 1902 E220/16 – 1844 E470/6 – 1914	12x4	0	
	Climatic Sequence	<input checked="" type="checkbox"/>	ESCC 3012, Para. 9.13	E22/35 -1914 E68/20 – 1902 E220/16 – 1844 E470/6 – 1914	12x4	0	

Environmental / Mechanical Subgroup (III)	Mounting	☒	IEC 384-1	E22/35 -1914 E68/20 – 1902 E220/16 – 1844 E470/6 – 1914	12x4	0	
	High and Low Temperature Stability	☒	ESCC 3012, Para. 9.14	E22/35 -1914 E68/20 – 1902 E220/16 – 1844 E470/6 – 1914	12x4	0	
	Surge Voltage	☒	ESCC 3012, Para. 9.15	E22/35 -1914 E68/20 – 1902 E220/16 – 1844 E470/6 – 1914	12x4	0	
	Damp Heat Steady State	☒	IEC 68-2-3	E22/35 -1914 E68/20 – 1902 E220/16 – 1844 E470/6 – 1914	12x4	0	
	External Visual Inspection	☒	ESCC 20500	E22/35 -1914 E68/20 – 1902 E220/16 – 1844 E470/6 – 1914	12x4	0	



APPLICATION FOR ESCC QUALIFICATION APPROVAL

Component title: Polymer Multi Anode Tantalum Capacitor based on TCS type

Executive Member: ESTEC

Date: 27/03/2020

Page 5

366

Chart IV	Test	Tick when done	Conditions	Date Code	Tested Qty	No. of Rejects	Comments if not performed. Comments on Rejection
Endurance Subgroup (IV)	Mounting	<input checked="" type="checkbox"/>	IEC 384-1	E22/35 -1914 E68/20 – 1902 E220/16 – 1844 E470/6 – 1914	36x4	0	
	Operating Life at T ₁ °C	<input checked="" type="checkbox"/>	ESCC 3012, Para. 9.17.1	E22/35 -1914 E68/20 – 1902 E220/16 – 1844 E470/6 – 1914	36x4	0	
	Electrical Measurements during Endurance Test	<input checked="" type="checkbox"/>	ESCC 3012, Para. 9.4.5	E22/35 -1914 E68/20 – 1902 E220/16 – 1844 E470/6 – 1914	36x4	0	
	External Visual Inspection	<input checked="" type="checkbox"/>	ESCC 20500	E22/35 -1914 E68/20 – 1902 E220/16 – 1844 E470/6 – 1914	36x4	0	
Endurance Subgroup (V)	Mounting	<input checked="" type="checkbox"/>	IEC 384-1	E22/35 -1914 E68/20 – 1902 E220/16 – 1844 E470/6 – 1914	24x4	0	
	Operating Life at T ₂ °C	<input checked="" type="checkbox"/>	ESCC 3012, Para. 9.17.1	E22/35 -1914 E68/20 – 1902 E220/16 – 1844 E470/6 – 1914	24x4	0	
	Electrical Measurements during Endurance Test	<input checked="" type="checkbox"/>	ESCC 3012, Para. 9.4.5	E22/35 -1914 E68/20 – 1902 E220/16 – 1844 E470/6 – 1914	24x4	0	
	External Visual Inspection	<input checked="" type="checkbox"/>	ESCC 20500	E22/35 -1914 E68/20 – 1902 E220/16 – 1844 E470/6 – 1914	24x4	0	
Assembly / Capability Subgroup	Permanence of Marking	<input checked="" type="checkbox"/>	ESCC 24800	E22/35 -1914 E68/20 – 1902 E220/16 – 1844 E470/6 – 1914	12x4	0	
	Solderability	<input checked="" type="checkbox"/>	IEC 68-2-20	E22/35 -1914 E68/20 – 1902 E220/16 – 1844 E470/6 – 1914	12x4	0	
Additional Tests		<input type="checkbox"/>					
		<input type="checkbox"/>					
		<input type="checkbox"/>					

**APPLICATION FOR ESCC QUALIFICATION APPROVAL**

Page 7

Component Title: Polymer Multi Anode Tantalum Capacitor based on TCS type

366

Executive Member: ESTEC

Date: 27/03/2020

NOTES ON THE COMPLETION OF THE APPLICATION FORM FOR ESCC QUALIFICATION APPROVAL**ENTRIES**

- Form Heading** shall indicate:— the title of the component as given in its detail specification or the name of the series or family; — the entering date; — the serial number and the suffix of the form.
- Box 1** shall provide details given in table; in particular there shall be listed - the variants or range of variants; the range of components by using the ESCC code for values tolerances, etc.; the designation given in detail specification as 'based on'; ---under Test Vehicle enter either a cross or the specific characteristic capable to identify the component tested; — under component similar enter a cross.
- Box 2 and 3** Manufacturer's name and location of plant where the components were manufactured and tested.
- Box 4** Generic and detail specifications used during qualification program.
- Box 5** Reference to test report(s) submitted in support of application.
- Box 6** Enter details to identify the PID that was applicable at the time the qualification lot was manufactured.
- Box 7** If the PID was evolved after qualification lot manufacture, adequate details of such evolution shall be provided together with reasons for changes. Major changes shall be clearly marked.
- Box 8** The box serves to identify the current PID and the Executive Representative that has verified it together with the date of this occurrence.
- Box 9** This box can be completed only after a physical visit to the plant to confirm that the practices, procedures, materials, 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 10** Details entered shall be sufficient to evidence that an evaluation program according to ESCC Basic Specification No. 22600 has been performed and that the results thereof are summarized in the survey and test reports. If the evaluation program has not been carried out according to established ESCC documents, the applicant Executive Representative shall provide alternative data and declare its assessed degree of satisfactory compliance with the ESCC basic requirements. Reference shall be made to the reports on Destructive Physical Analysis (DPA), Failure Analysis and Non conformance (NCCS) issued during the Evaluation and/or Qualification Phase.
- Box 11** Enter the name of the Executive Coordinator and the signature.
- Box 12** To be used when there is a need to expand any of the boxes from 1 through 10. Identify box affected and reference the Box 12 in the relevant Box. Box 12 can be broken into 12a, 12b, etc. if several Boxes have to be expanded.
- Box 13** Fill table as requested.
- Box 14** Fill in any additional tasks required to achieve full compliance.
- Box 15** All Executive recommendations on the application itself, special conditions or restrictions, modifications of the QPL or ESCC QML entry, letters to the manufacturer, etc. shall be entered clearly in Box 15, signed by the ESA Representative.
- Box 16** Fill in Table as requested.
- Box 17** Confidential details of PID changes shall be provided.
- Box 18** State noncompliance with reference to specification(s) and paragraph(s). To simplify reference in Box 18 each nonconformance shall be sequentially numbered. If relevant state 'None'
- Box 19** Any additional action deemed necessary by the Executive Representative 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 nonconformance.
- Box 20** Additional Comments