ESCC

APPLICATION FOR ESCC QUALIFICATION APPROVAL

Component Title: Solid state thin film fuses based on type HCSF

Executive Member: ESA Date: 11/01/2016

Appl. No. 336

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

ESCC COMPONENT. NO.	VARIANTS	RANGE OF COMPONENTS	BASED ON	TEST VEHICLE / S	COMPONENT SIMILAR
4008002xx	24, 26, 28	5A, 7.5A, 10A	HCSF	400800228 (10A)	(HCSF 5A and 7.5A)

2 Component Manufacturer

SCHURTER AG

3 Location of Manufacturing Plant

Werkhofstrasse
8-12
CH-6002 Luzern
Switzerland

4 ESCC Specification used for Qualification

Generic: 4008
Issue 4
Detail/s: 4008/002
Issue 1

5 Qualification Report Reference and date:

0108.3403 HCSF Qualification 2015

Date: 09/10/2015

6 PID used for manufacturing Qualification Lot

Ref No: 0109.0063
Issue: (draft)
Date: 18/10/2011

7 PID changes since start of qualification

None ☒
Minor* ☐
Major* ☐

(* Details not published, provided in confidential annex 2.)

8 Current PID Verified by ESA ESTEC

Name of Executive Representative

Ref No: 0109.0063
Issue 1 revision -
Date 16/10/2015

9 Current Manufacturing facilities surveyed by:

ESA — 02/11/2010

(Name of Executive Responsible) — (Date)

QCS/LB/101101

Report Reference

Satisfactory: Yes ☒ No ☐ Explain

10 Quality and Reliability Data

Evaluation testing performed Yes ☒ No ☐

Report Ref. No.: Various, reference= ESA contract 19273/05/NL/PA Date: 01/10/2014

Equivalent Data:

Certification: ISO 9001:2008 recertification in March 2015

Failure analysis, DPA, NCCS available Yes ☒ No ☐

(supply data)

Ref Nos. and purpose: Construction Analysis by ESTEC

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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 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: 22/01/2016

(Signature of the Executive Coordinator)

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

[8] Main production processes, fuse element technology and all materials are based on and similar to the MGA-S which is already ESCC qualified.
[9] Additional ESA survey in 2012. Last QMS external audit in March 2015 for ISO 9001 re-certification.

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Non compliance to ESCC requirements:

No.:	Specification	Paragraph	Non compliance

14

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

15

Executive Manager Disposition

Application Approval: Yes ☐ No ☐

Action / Remarks:

Date:

Signature, ESA Representative

ANNEX 1: LIST OF TESTS DONE TO SUPPORT QUALIFICATION

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Tests conducted in compliance with:

- ESCC 4008 generic specification; Chart F4 (for ESCC/QPL parts);
- Or PID-TFD (for ESCC/QML parts)

Tests vehicle identification/description:

HCSF 10A (3409.0011.10, lot No. 9000377, date code 1524A)	

Detail Specification reference: 4008/002

Overview Results

Chart F4

Subgroup	Test	Quantity Tested	Quantity Pass	Comment
1	Para. 8.13 Resistance to Soldering Heat	46	46	ok
	Para. 8.9 Rapid Change of Temperature	20	20	ok
	Para. 8.10 Vibration	20	20	ok
	Para. 8.11 Shock	20	20	ok
	Para. 8.12 Damp Heat Steady State	20	20	ok
	Para. 8.15 Thermal Vacuum	6	6	ok
	Para. 8.5 Fusion Characterisation Tests	40	40	ok
	Para. 8.7 Insulation Resistance	30	30	ok
	Para. 8.2 External Visual Inspection	46	46	ok
2	Para. 8.13 Resistance to Soldering Heat	20	20	ok
	Para. 8.8 Operating Life	20	20	ok
	Para. 8.5 Fusion Characterisation Tests	20	20	ok
	Para. 8.7 Insulation Resistance	15	15	ok
	Para. 8.16 Permanence of Marking	20	20	ok
	Para. 8.2 External Visual Inspection	20	20	ok
3	Para 8.14 Robustness of Termination	5	5	ok
	Para 8.4 Solderability	20	20	ok
	Para. 8.13 Resistance to Soldering Heat	20	20	ok
	Para 8.6 Verification of Overload Operation at DC Rated Voltage (Room Temperature)	20	20	ok
	Para 8.6 Verification of Overload Operation at DC Rated Voltage (Low Temperature)	20	20	ok
	Para. 8.7 Insulation Resistance	40	40	ok

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