



APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL

Component Title: Resistors, Fixed, Chip, Thick Film, based on type CHPHR and CHPFR

Executive Member: CNES

Date: 30/08/2019

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

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ESCC COMPONENT NO.	VARIANTS	RANGE OF COMPONENTS	BASED ON	TEST VEHICLE / S PERIODIC TESTING	COMPONENT SIMILAR
4001/026	01 & 06 - 02 & 07 - 03 & 08 04 & 09 - 05 & 10 11 & 16 12 & 17 13 & 18 14 & 19 15 & 20	All values 50V to 500V	CHPHR0603 - CHPHR0805 - CHPHR1206 CHPHR2010 - CHPHR2512 CHPFR0603 CHPFR0805 CHPFR1206 CHPFR2010 CHPFR2512	4001026014532F4 4001026011005G4 4001026011R00G6 4001026023011F4 40010260220R0F4 4001026035R60J6 4001026031004G4 4001026033002F4 4001026041002J4 40010260410R0J4 4001026045621F4 4001026051R20G4 4001026054R30J6 - 400102612R1004G4 400102614R6R81G4	See also box 14 for Failure Rate endurance test vehicles

Component Manufacturer VISHAY SA Division SERNICE	2	Location of Manufacturing Plant(s) 199 Bld de la Madeleine BP 1159 06003 NICE CEDEX 1 - France	3	Date of original qualification approval: Date: 11/10/2011 Certificate Ref No. 314	4
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ESCC Specifications used for Maintenance of qualification testing: Generic: 4001 Issue: 4 Detail(s): 4001026 Issue: 6	5	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 checked="" type="checkbox"/> Yes <input type="checkbox"/> (Supply details)	6	Qualification Extension Report reference and date: Report CAZ/19.001, July 2019	7
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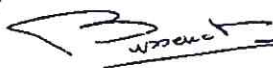
Summary of procurement or equivalent test results during current validity period in support of this application (those to ESCC listed first)

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Project Name	Testing Level	LAT	Date code	Quantity Delivered
See report CAZ/19.001	-			Total 159 000 dont CHP HR 150 000 CHP FR 9 000
Charcroft ALTER Tech.				
TTI Inc. THALES DMS		LVT 2	1811, 1813, 1816, 1820, 1851	
ARROW ECOMAL				

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 Agency Representative Ref No: PID CHP HR FR Issue: 6 Date: 15/03/2018 Rev Date: 14/03/2018	10
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Current Manufacturing facilities surveyed by: ESA and CNES on 07/02/2019 (Name of Agency) (Date)	11
Satisfactory: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Explain	
Report Reference: CNES DCT/AQ/CQ- 2019/0003325, 15/02/2019	

	APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL Component title: Resistors, Fixed, Chip, Thick Film, based on type CHPHR and CHPFR Executive Member: CNES Date: 30/08/2019	Page 2 Appl. No. 314D
Failure Analysis, DPA, NCCS available: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (Supply data)		
Ref. No's and purposes: Minor NC Vishay SA 8D119001on 4001026015101F4 (0603 5.1KOhm) dc 1830: closed out.		
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: 04/09/2019		 JP. BUSSENOT (Signature of the Executive Coordinator)
Continuation of Boxes above:		
<p style="text-align: center;">Report 18 27 107, 04/07/2018</p> <p>Failure Rate Endurance Testing subgroup of Chart F4 performed on 19 test vehicles (8 000 hours completed); CHPFR0603, 180 – 470 – 9,09k – 47k – 147k CHPFR0805, 22 – 33 – 36k CHPFR1206, 6.8 – 562 – 12,4k – 1.27M CHPFR2010, 6.04 – 22.1 – 22.1k – 100k CHPFR2512, 20 – 24.9k – 1M 20 parts for each lot.</p> <p>Failure Rate Endurance Testing subgroup of Chart F4 performed on 9 test vehicles (6 000 hours performed); CHPFR0603, 825k CHPFR0805 14k – 250k CHPFR1206 22k – 90.9k CHPFR2010 68.1k CHPFR2512 22 – 22k – 24M 20 parts for each lot.</p> <p>Failure Rate Endurance Testing subgroup of Chart F4 performed on 2 test vehicles (4 000 hours performed); CHPFR0805, 150k CHPFR2010, 7.5k 20 parts for each lot.</p> <p>Failure Rate Endurance Testing subgroup of Chart F4 performed on 24 test vehicles (2 000 hours performed); CHPFR0603, 10 – 49.9 – 100 – 10k – 500k CHPFR0805, 5.11 – 21.5 – 4k – 13k – 475 k CHPFR1206, 5.6 – 470 – 50k – 47M CHPFR2010, 45.3 – 174 – 1.5k – 20k – 10M CHPFR2512, 7.5 – 150 – 270 – 33k – 47k 20 to 50 parts for each lot</p>	<p style="text-align: center;">Report 19 24 121, 13/06/2019</p> <p>Failure Rate Endurance Testing subgroup of Chart F4 (8 000 hours performed); None</p> <p>Failure Rate Endurance Testing subgroup of Chart F4 performed on 24 test vehicles (6 000 hours performed – 8 000 hours completed); CHPFR0603, 10 – 49.9 – 100 – 10k – 500k CHPFR0805, 5.11 – 21.5 – 4k – 13k – 475 k CHPFR1206, 5.6 – 470 – 50k – 47M CHPFR2010, 45.3 – 174 – 1.5k – 20k – 10M CHPFR2512, 7.5 – 150 – 270 – 33k – 47k 20 to 50 parts for each lot</p> <p>Failure Rate Endurance Testing subgroup of Chart F4 performed on 2 test vehicles (4 000 hours performed – 8 000 hours completed); CHPFR0805, 150k CHPFR2010, 7.5k 20 parts for each lot.</p> <p>Failure Rate Endurance Testing subgroup of Chart F4 performed on 9 test vehicles (2 000 hours performed – 8 000 hours completed); CHPFR0603, 825k CHPFR0805 14k – 250k CHPFR1206 22k – 90.9k CHPFR2010 68.1k CHPFR2512 22 – 22k – 24M 20 parts for each lot.</p>	
FR reports 18 27 107 and 19 24 121 as well as FR programme are appended to report CAZ/19.001		

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Non compliance to ESCC requirements:

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No.:	Specification	Paragraph	Non compliance

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

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Executive Manager Disposition

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Application Approval: Yes ☒ No ☐

Action / Remarks:

Date:

B. Schade, Head of Product Assurance
and Safety Department



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

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Tests conducted in compliance with:

- ESCC 4001 generic specification; Chart F4 (for ESCC/QPL parts);
- or PID-TFD (for ESCC/QML parts)

Tests vehicle identification/description:

4001026014532F4 45,3KOhm DC 1717 (0603)	400102612R1004G4 1MOhm DC 1810 (0805, FR)
4001026011005G4 10MOhm DC 1802 (0603)	40010260220R0F4 20Ohm DC 1915 (0805)
4001026011R00G6 1Ohm DC 1906 (0603)	4001026035R60J6 5.6 Ohm DC 1746 (1206)
4001026023011F4 3.01KOhm DC 1719 (0805)	4001026031004G4 1MOhm DC 1804 (1206)
4001026033002F4 30KOhm DC 1809 (1206)	
400102614R6R81G4 6.81Ohm DC 1729 (1206, FR)	4001026045621F4 5.62KOhm DC 1914 (2010)
4001026041002J4 10KOhm DC 1816 (2010)	4001026051R20G4 1.2Ohm DC 1743 (2512)
40010260410R0J4 10Ohm DC 1842 (2010)	4001026054R30J6 4,3Ohm DC 1846 (2512)

Detail Specification reference: 4001/026

Chart F4	Test	Tick when done	Conditions	Date Code	Tested Qty	N° of Rejects	Comments if not performed. Comments on Rejection
Environmental / Mechanical Subgroup	Mounting	<input checked="" type="checkbox"/>	IEC 60115-1 clause 4.31	All	2 x 9 13 x 3	0	
	Rapid Change Of Temperature	<input checked="" type="checkbox"/>	IEC 60068-2-14	All	2 x 9 13 x 3	0	
	Vibration	<input type="checkbox"/>	IEC 60068-2-6				NA
	Climatic test Sequence	<input checked="" type="checkbox"/>	ESCC 4001, Para 8.10	All	2 x 9 13 x 3	0	
	Seal Test	<input type="checkbox"/>	IEC 60068-2-17				NA
	Mounting	<input checked="" type="checkbox"/>	IEC 60115-1 clause 4.31	All	2 x 9 13 x 3	0	
	Robustness of Terminations	<input checked="" type="checkbox"/>	IEC 60068-2-21	All	2 x 9 13 x 3	0	
	Climatic test Sequence	<input checked="" type="checkbox"/>	ESCC 4001, Para 8.10	All	2 x 9 13 x 3	0	
	Seal Test	<input type="checkbox"/>	IEC 60068-2-17				NA
	Resistance to Soldering Heat	<input checked="" type="checkbox"/>	IEC 60068-2-20	All	2 x 10 5 x 5 8 x 3	0	Parts are not mounted, therefore it has been agreed not to include them in Climatic Sequence (PID)
	Mounting	<input type="checkbox"/>	IEC 60115-1 clause 4.31				NA per agreement (PID)
	Climatic test Sequence	<input type="checkbox"/>	ESCC 4001, Para 8.10				NA per agreement (PID)
	Seal Test	<input type="checkbox"/>	IEC 60068-2-17				NA
	Mounting	<input type="checkbox"/>	IEC 60115-1 clause 4.31				NA
	Insulation Resistance	<input type="checkbox"/>	ESCC 4001, Para 8.3.1.2	1804 1816 1809 1842 1846 1906 1915 1914	8 x 5	0	
	Voltage Proof	<input type="checkbox"/>	ESCC 4001, Para 8.3.1.3	1804 1816 1809 1842 1846 1906 1915 1914	8 x 5	0	
Endurance Subgroup	Mounting	<input checked="" type="checkbox"/>	IEC 60115-1 clause 4.31	1816	15	0	
	Operating Life	<input checked="" type="checkbox"/>	ESCC 4001, Para 8.13	1816	15	0	Customer LVT2, replaced with FR data in periodic testing
	Seal Test	<input type="checkbox"/>	IEC 60068-2-17				NA
Assembly Capability Subgroup	Solderability	<input checked="" type="checkbox"/>	IEC 60068-2-20	All	2 x 3 13 x 2	0	
	Permanence of marking	<input type="checkbox"/>	ESCC 24800				NA
Failure Rate Subgroup	Operating Life 8 000 h	<input checked="" type="checkbox"/>	ESCC 4001, Para 8.13	54 lots	38 x 20 4 x 25 1 x 30 11 x 50	0	10,88 M components.hours
	Seal Test	<input type="checkbox"/>	IEC 60068-2-17				NA
Additional Tests	Temperature Coefficient	<input checked="" type="checkbox"/>	ESCC 4001, Para 8.3.3	All	2 x 10 13 x 5	0	
	Climatic test Sequence	<input checked="" type="checkbox"/>	ESCC 4001, Para 8.10	1717 1719	2 x 9	0	
		<input type="checkbox"/>					

