Component Title:

RESISTOR, FIXED, CHIP, METAL FOIL BASED ON TYPE SMP-PW,

Page 1

SMS-PW, SMT-PW according to ESCC Det. Spec. 4001/027 respectively BASED ON TYPE SMR-PW, SMV-PW according to ESCC Det. Appl. No. Spec.4001/028 DLR Executive Member: Date: 03.08.16 285 D Components (including series and families) submitted for Extension of Qualification Approval: ESCC BASED TEST COMPONENT VARIANTS RANGE OF COMPONENTS COMPONENT NO. ON SMP/S/T-R010-1.0-PW SMT-R470-1.0-PW VEHICLE / S SIMILAR 4001/027 01, 02 & 03 See annex 1 SMV-R050-1.0-PW 4001/028 01 & 02 SMV-R270-1.0-PW Component Manufacturer Location of Manufacturing Plant(s) 3 4 Date of original qualification approval: Eibacher Weg 3-5 34683 Dillenburg Date: 24.11.08 Isabellenhütte Heusler GmbH & Co. KG Germany Certificate Ref No. 5 7 ESCC Specifications used for Deviations to LVT testing and Detail Specification used: Qualification Extension Report Maintenance of qualification testing: Generic: 4001 Issue: reference and date: (supply details in Box 15) Requalification Test Report 2016 Certificate 285 \boxtimes Detail(s): 4001/027 Issue: 4 Deviation from current Specifications: 17.06.2016 4001/028 Issue: Yes (Supply details) 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 I Quantity Delivered PID changes since start of qualification Current PID Verified G. Joormann 9 10 by: None \boxtimes Name of Excutive Representative D QS 010 / D QS 011 Minor* Ref No: Major* Issue 3 / Issue 6 03.08.16 Issue: Date: *Provide details in box: Rev Date: 14.09.2007 / 13.03.15 11 19 - 20 May 2016 Current Manufacturing facilities surveyed by: G. Joomann . (Name of Executive Representative) (Date) Satisfactory: Yes \boxtimes No Explain Report Reference: ISA-AU-2016

Component title:

RESISTOR, FIXED, CHIP, METAL FOIL BASED ON TYPE SMP-PW, SMS-PW, SMT-PW according to ESCC Det. Spec. 4001/027 respectively BASED ON TYPE SMR-PW, SMV-PW according to ESCC Det. Spec.4001/028

Appl. No.

Page 2

Executive Member: DLR 03.08.16 Date: 285 D 12 Failure Analysis, DPA, NCCS available: Yes No (Supply data) Ref. No's and purposes: 13 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 _______ as the responsible Executive Member for ESCC qualification status to be extended to the component(s) listed herein. 03.08.16 Date: i. A. i.A. G. Joormann (Signature of the Executive Coordinator) Continuation of Boxes above: 14

Component title:

RESISTOR, FIXED, CHIP, METAL FOIL BASED ON TYPE SMP-PW, SMS-PW, SMT-PW according to ESCC Det. Spec. 4001/027 respectively BASED ON TYPE SMR-PW, SMV-PW according to ESCC Det. Spec.4001/028

Appl. No.

Page 3

cl-sta v Salama and America Address and a second at	Executive I	Member: DLR	Date:	03.08.16	285 E)
Non compliance to ESCC requirem	ents:					15
No.: Specifical	tion	Paragraph		Non compliance		
Additional tasks required to achieve	full compliance for	ESCC qualification or rationale for accepta	ability of			40
noncompliance:	errand Wilseld Michael Co.	enough to the control of the control			,	16
¥						
Executive Manager Disposition						17
Application Approval: Yes	No 🗆					
Action / Remarks:	4 110 🗆					
7 Guidin 7 Ginama.						
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Date:				-t 504 B : :'		
			Sign	ature, ESA Representative		



Component Title:

RESISTOR, FIXED, CHIP, METAL FOIL BASED ON TYPE SMP-PW, SMS-PW, SMT-PW according to ESCC Det. Spec. 4001/027 respectively BASED ON TYPE SMR-PW, SMV-PW according to ESCC Det. Spec.4001/028

DLR Executive Member:

Date: 03.08.16

Appl. No. 285 D

18

Page 4

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

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:

SMP-R500-0.5-PW	F18 (12285)
SMS-R330-1.0-PW	F49 (47120)
SMT-R005-1.0-PW	F50 (55149)
SMT-R020-1.0-PW	F50 (55144)

Detail Specification reference:

4001/027

Chart F4	Test	Tick when done	Conditions	Date Code	Tested Qty	N° of Rejects	Comments if not performed. Comments on Rejection
	Mounting	x	IEC 60115-1 clause 4.31	F18, F49, F50, F50	4 x 15	0	
	Rapid Change Of Temperature	x	IEC 60068-2-14	F18, F49, F50, F50	4 x 15	0	
	Vibration	x	IEC 60068-2-6	F18, F49, F50, F50	4 x 15	0	
	Climatic test Sequence	x	ESCC 4001, Para 8.10	F18, F49, F50, F50	4 x 15	0	
	Seal Test		IEC 60068-2-17				
Envi ron	Mounting		IEC 60115-1 clause 4.31				
men tal	Robustness of Terminations		IEC 60068-2-21				
/Me cha	Climatic test Sequence		ESCC 4001, Para 8.10				
nical Sub	Seal Test		IEC 60068-2-17				
grou P	Resistance to Soldering Heat	x	IEC 60068-2-20	F18, F49, F50, F50	4 x 6	0	
	Mounting	x	IEC 60115-1 clause 4.31	F18, F49, F50, F50	4 x 6	0	
	Climatic test Sequence	x	ESCC 4001, Para 8.10	F18, F49, F50, F50	4 x 6	0	
	Seal Test		IEC 60068-2-17				
	Mounting		IEC 60115-1 clause 4.31				
	Insulation Resistance		ESCC 4001, Para 8.3.1.2				
	Voltage Proof		ESCC 4001, Para 8.3.1.3				
End	Mounting	x	IEC 60115-1 clause 4.31	F18, F49, F50, F50	4 x 15	0	
uran ce Sub	Operating Life	х	ESCC 4001, Para 8.13	F18, F49, F50, F50	4 x 15	0	
grou p	Seal Test		IEC 60068-2-17				
Ass emb ly Cap abilit y Sub grou p	Solderability	х	IEC 60068-2-20	F18, F49, F50, F50	4 x 6	0	
	Permanence of marking		ESCC 24800				
	Operating Life		ESCC 4001, Para 8.13				
	Seal Test		IEC 60068-2-17				
tion al							
Test							



Component Title:

RESISTOR, FIXED, CHIP, METAL FOIL BASED ON TYPE SMP-PW, SMS-PW, SMT-PW according to ESCC Det. Spec. 4001/027 respectively BASED ON TYPE SMR-PW, SMV-PW according to ESCC Det. Spec.4001/028

Executive Member: DLR

03.08.16 Date:

Page 5 Appl. No.

285 D

18

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

Tests conducted in compliance with:

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

(for ESCC/QML parts)

Tests vehicle identification/description:

F22 (C20545) SMV-R0033-1.0-PW SMV-R100-1.0-PW F31 (C20628)

4001/028 Detail Specification reference:

Chart F4	Test	Tick when done	Conditions	Date Code	Tested Qty	N° of Rejects	Comments if not performed. Comments on Rejection
	Mounting	x	IEC 60115-1 clause 4.31	F22, F31	2 x 15	0	
	Rapid Change Of Temperature	x	IEC 60068-2-14	F22, F31	2 x 15	0	
	Vibration	x	IEC 60068-2-6	F22, F31	2 x 15	0	310.1
	Climatic test Sequence	x	ESCC 4001, Para 8.10	F22, F31	2 x 15	0	
	Seal Test		IEC 60068-2-17				A
Envi	Mounting		IEC 60115-1 clause 4.31				
ron men	Robustness of Terminations		IEC 60068-2-21				
tal /Me	Climatic test Sequence		ESCC 4001, Para 8.10				
cha nical	Seal Test		IEC 60068-2-17				
Sub	Resistance to Soldering Heat	x	IEC 60068-2-20	F22, F31	2 x 6	0	
Р	Mounting	x	IEC 60115-1 clause 4.31	F22, F31	2 x 6	0	
	Climatic test Sequence	x	ESCC 4001, Para 8.10	F22, F31	2 x 6	0	
	Seal Test		IEC 60068-2-17				
	Mounting	x	IEC 60115-1 clause 4.31	F22, F31	2 x 15	0	
	Insulation Resistance	х	ESCC 4001, Para 8.3.1.2	F22, F31	2 x 15	0	
	Voltage Proof	x	ESCC 4001, Para 8.3.1.3	F22, F31	2 x 15	0	
End	Mounting	х	IEC 60115-1 clause 4.31	F22, F31	2 x 15	0	
uran ce	Operating Life	x	ESCC 4001, Para 8.13	F22, F31	2 x 15	0	
Sub grou p	Seal Test		IEC 60068-2-17				
Ass	Solderability	×	IEC 60068-2-20	F22, F31	2 x 6	0	
emb ly Cap abilit y Sub grou P	Permanence of marking		ESCC 24800				
	Operating Life		ESCC 4001, Para 8.13				
	Seal Test	0	IEC 60068-2-17			_	
Addi tion al Test s							



Component title:

RESISTOR, FIXED, CHIP, METAL FOIL BASED ON TYPE SMP-PW, SMS-PW, SMT-PW according to ESCC Det. Spec. 4001/027 respectively BASED ON TYPE SMR-PW, SMV-PW according to ESCC Det. Spec.4001/028

DLR

Date: 03.08.16

Executive Member:

Page 7

Appl. No. 285 D

NOTES ON THE COMPLETION OF THE APPLICATION FORM FOR ESCC QUALIFICATION EXTENSION APPROVAL

NOTE	ES 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.