ESCC

APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL

Component Title: Power Mosfet STRH40P10, STRH12P10

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L. S.		E	xecutive Member:	CNES		Date	e: 14/06/2019	3260	2
Components (include	ling series and fam	ıilies) s	ubmitted for Extension	of Qualification	Approval:				1
ESCC COMPONENT VARIANTS NO.		RANGE OF COMPONENTS		BASED ON		TEST VEHICLE / S	COMPONE! SIMILAR		
5205/025	01, 02		TO-254AA		STRH40P10	1	ID33445000AZN		
5205/029	01, 02, 03		TO-257AA		STRH12P10	<u>[</u> 1	D33546001ZY	Ĺ	
					 [_			
Component M	Appuraturor	2	Landing of Ma	and a training Disput	(-)				
STMicroelectronics	lanulacturer		Location of Manufacturing Plant(s) 3 3, rue de Suisse BP4199, 35041 Rennes Cedex			Date of original qualification approval:			
			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			Date:	22/03/2013	provai.	
	v.					Certifica	ate Ref No. 326		
		5			6				7
ESCC Specifications Maintenance of qual	s used for lification testing:		Deviations to LVT testing and Detail Specification used:			Qualification Extension Report reference and date:			
Generic: 5000	Issue:	7	No ⊠ Yes ☐ (supply details in Box			Datapack STRH40P10HYG Lot ID33445000AZN _Chart			
Detail(s): 5205/01	25 Jesus	6	15)			F4 13/03/2018 Datapack STRH12P10GYG Lot ID33546001ZY _Chart			
Detail(s): 5205/025 Issue: 6 5205/029 6			Deviation from current Specifications:			F4 28/03/2019 & 26/04/2019			
			No ⊠ Yes	☐ (Supply d	letails)				
									8
Summary of procure Project Name						plication (those to ESCC listed fir	Sec. 1881 (44)	
Floject Name	Testing L	evei	LAT		Date code		Quantity	Delivered	
			10 10 10 10 10 10 10 10 10 10 10 10 10 1						
PID changes since s	tart of qualification	l	9	Current PID V	erified by:		CNES		10
None							Representative Agency		
Minor* ⊠				Ref No: 8	097046 (gener	ic) Rev 21	1 and 8212222 (specific	: Mosfet) rev 14	
Major* □	*Provide details i	n box:		Issue: Rev Date:			Date:	19/09/2018	
				They bate.					11
Current Manufacturii	ng facilities survey	ed by:		CNES		on	21/	01/2019	
			(Exec	utive Representati	ive Agency)	-	(Date)	
Satisfactory:	Yes ⊠		No □ Ex	plain					
Report Reference:	CR-Activi 2019.pdf	tés ST	Janvier 						

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Failure Analysis, DPA, NCCS available: Yes □ No ☒ (Supply data)	
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.	13
Date: 14/06/2019 JP. BUSSENOT (Signature of the Executive Coordinator)	
Continuation of Boxes above:	14



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Non compliance to ESCC requirements:

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No.:	Specification	Paragraph	Non compliance	
	opcomoune	raragraph	Non compliance	
Additiona noncomp	I tasks required to achieve full compliance for li liance:	ESCC qualification or rationale for acceptability	of	16
• 00			'	
Executive	Manager Disposition			17
Application	on Approval: Yes ☐ No ☐		·	
Action / R	10 A			
11				
-			26/1	
D-4			\$ W/	
Date:			B. Schade: Head of ESA Product Assurance	and
			Safety Department	and

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

Tests conducted in compliance with:

ESCC 5000 generic specification; Chart F4 (for ESCC/QPL parts); or PID-TFD (for ESCC/QML parts)

Tests vehicle identification/description:

STRH40P10 Lot ID33445000AZN DC1720A STRH12P10 Lot ID33546001ZY DC1820A	Chart F4 sg1, sg2 & sg3

Detail Specification reference:

Chart F4	Test	Tick when done	Conditions	Date Code Diffusion Lot	Tested Qty	N° of Rejects	Comments if not performed Comments on Rejection
	Mechanical shock	×	MIL-STD-750 TM2016	1720A 1820A	15 +15	0	
	Vibration	×	MIL-STD-750 TM2056	1720A 1820A	15 +15	0	
	Constant acceleration	×	MIL-STD-750 TM2006	1720A 1820A	15 +15	0	
group	Seal Fine leak Gross leak	×	MIL-STD-750 TM1071	1720A 1820A	15 +15	0	
Environmental/Mechanical Subgroup	Electrical Measurement		Intermediate and End- Point Electrical Measurements	1720A 1820A	15 +15	0	
nanic	External Visual	\boxtimes	ESCC Basic Spec 20500	1720A 1820A	15 +15	0	
al/Mech	Thermal shock		MIL-STD-750 TM1056	Click here to enter text.			Only applicable to axial lead glass diodes
ment	Temperature Cycling	\boxtimes	MIL-STD-750 TM1051	1720A 1820A	15 +15	0	
/iron	Moisture Resistance	\boxtimes	MIL-STD-750 TM1021	1720A 1820A	15 + 15	0	
Env	Seal Fine leak Gross leak	×	MIL-STD-750 TM1071	1720A 1820A	15 + 15	0	
	Electrical Measurement	×	Intermediate and End- Point Electrical Measurements	1720A 1820A	15 + 15	0	
	External Visual	\boxtimes	ESCC Basic Spec 20500	1720A 1820A	15 + 15	0	
roup	Operating Life		ESCC 5000 Para. 8.19	1720A 1820A	15 + 15	0	16 part used for HTRB 2000h and 14 parts used for HTGB 2000h
Endurance Subgroup	Electrical Measurement	×	Intermediate and End- Point Electrical Measurements	1720A 1820A	15 + 15	0	
durance	Seal Fine leak Gross leak	×	MIL-STD-750 TM1071	1720A 1820A	15 + 15	0	
En	External Visual Inspection		ESCC Basic Spec 20500	1720A 1820A	15 + 15	0	=
Assembly Capability Subgroup	Permanence of Marking		ESCC Basic Spec 24800				Not applicable on Laser marking
	Terminal Strength	×	ESCC 5000 Para. 8.18	1720A 1820A	5 + 5	0	
	Internal Visual	×	ESCC Basic Spec 20400	1720A 1820A	5 + 5	0	
S C A	Bond Strength	×	MIL-STD-750 TM 2037	1720A 1820A	3 + 3	0	
	Die Shear	\boxtimes	MIL-STD-750 TM 2017	1720A 1820A	3 + 3	0	



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Ch art F4	Test	Tick when done	Conditions	Date Code Diffusion Lot	Tested Qty	N° of Rejects	Comments if not performed. Comments on Rejection
nal s	RGA	×	MIL-STD-750-1, METHOD 1018.6	1720A	3	0	
dditional Tests							
Ao							



ENTRIES

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

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.