E.	SCC	Component Title: Pov	wer Mosfet STR			Page 1 Appl. No.
E/STATE OF THE PARTY OF THE PAR		Executive Member: 0	CNES		Date: 07/02/2017	326B
Components (includ	ing series and families	submitted for Extension	of Qualification	Approval:		_1_
ESCC COMPONENT NO.	VARIANTS	RANGE OF COM	PONENTS	BASED ON	TEST VEHICLE / S	COMPONENT SIMILAR
5205/025	01, 02	TO-254AA		STRH40P10	ID33513004ZZ	
5205/029	01,02	TO-257AA		STRH12P10	ID33609002ZX	
Component M STMicroelectronics	lanufacturer :	2 Location of Mar 3, rue de Suisse BP4	nufacturing Plani 199, 35041 Ren	(4/11)	Date of original qualification appro Date: 22/03/2013 Certificate Ref No. 326	oval:
ESCC Specification Maintenance of qua Generic: 5000 Detail(s): 5205/0:	s used for lification testing: Issue: 6	Deviations to LVT test used:  No 🗵 Yes  Deviation from currer  No 🗵 Yes	(supply of	details in Box	Qualification Extension Report reference and date: Datapack STRH40P10HYG Lot ID F4 25/02/2016 Datapack STRH12P10GYG Lot ID F4 02/02/2017	
		1				8
Summary of procure	ement or equivalent tes	t results during current va	alidity period in s	upport of this ap	oplication (those to ESCC listed first)	
Project Name	Testing Leve	I LAT		Date code	Quantity De	elivered
See box 22						
PID changes since	start of qualification	9	Current PID	Verified by:	CNES	10
None					Name of Excutive Representa	
Minor*			Ref No:	8097046 (gene	ric) Rev 16 and 8212222 (specific M	
	*Danida databati	2222	Issue:	JULY (Gene	Date:	28/07/2016
Major* □	*Provide details in bo	DX:	100UE.		Date.	20/01/2010

PID chang	es since	start of qualifi	cation			9	Current PID	Verified by:	20	CNES		10
None									Name of E	xcutive Representat	live	
Minor*	$\boxtimes$						Ref No:	8097046 (generi	c) Rev 16 and 8	8212222 (specific M	osfet) rev 12	
Major*		*Provide de	etails in box	<u>:</u>			Issue:			Date:	28/07/2016	
250							Rev Date:					
												11
Current Ma	anufactur	ing facilities s	urveyed by				ESA & CN	IES	on	31/08	2016	
						(Name	e of Executive	Representative)		(Da	ite)	
Satisfactor	y:	Yes	⊠	No		Exp	olain					
Report Re	ference:	DCT_	NES AQ_CQ_20 T-2016)	16_13092	(ST-	_						

		APPLICAT	ION FOR EXT	ENSION	OF ESCC QUAL	IFICATI	ON APPROVAL	Page 2
and the same	ESCC	Component title:	Power Mosf	et STRH	40P10, STRH12P	10		Appl. No.
2	84 7	Executive Member:	CNES			Date:	07/02/2017	326B
		The second secon				24040400	3.00	12
Failure	Analysis, DPA, NCCS ava	ilable: Yes	□ No	$\boxtimes$	(Supply data)			
Ref. No	s and purposes:							
that the	ersigned hereby certifies on behalf appropriate documentation has bee as stated in box 15;) - that the repo s the responsible Executive Membo	en evaluated; - that fu irts and data are avail	II compliance table at the ES	o all ESC	CC requirements is utive and therefor	s eviden e applie	s on behalf of	13
Date:	13/02/2017						JP. BUSSENO	
						(S	ignature of the Executive (	Coordinator)
Continua	ation of Boxes above:							14
1								

93-5	<b>ESCC</b>
T. Sarah	

# APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL

Date: 07/02/2017

Component title: Power Mosfet STRH40P10, STRH12P10

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Executive Member: CNES

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Non comp	pliance to ESCC requirements:		ı	15
No.:	Specification	Paragraph	Non compliance	
		-		
Additional noncompl	tasks required to achieve full compliance for l	ESCC qualification or rationale for acceptability	of	16
попоотпр	iano.		,	
Executive	Manager Disposition		-	17
Applicatio	n Approval: Yes □ No □		,	
Action / R	emarks:			
			7/1	
Date:			CX III	
			Signature, ESA Representative	



### APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL

Component Title: Power Mosfet STRH40P10, STRH12P10

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Executive Member: CNES Date: 07/02/2017

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 ID33513004ZZ DC1524A STRH12P10 Lot ID333609002ZX DC1622A	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	1524A 1622A	15 +15	0	
	Vibration	×	MIL-STD-750 TM2056	1524A 1622A	15 +15	0	
	Constant acceleration	⊠	MIL-STD-750 TM2006	1524A 1622A	15 +15	0	
group	Seal Fine leak Gross leak	⊠	MIL-STD-750 TM1071	1524A 1622A	15 +15	0	
al Sub	Electrical Measurement	×	Intermediate and End- Point Electrical Measurements	1524A 1622A	15 +15	0	
nanic	External Visual	⊠	ESCC Basic Spec 20500	1524A 1622A	15 +15	0	
Environmental/Mechanical Subgroup	Thermal shock		MIL-STD-750 TM1056	Click here to enter text.			Only applicable to axial lead glass diodes
ment	Temperature Cycling	×	MIL-STD-750 TM1051	1524A 1622A	15 +15	0	
ironi	Moisture Resistance	×	MIL-STD-750 TM1021	1524A 1622A	15 + 15	0	
En	Seal Fine leak Gross leak	⊠	MIL-STD-750 TM1071	1524A 1622A	15 + 15	0	
	Electrical Measurement	×	Intermediate and End- Point Electrical Measurements	1524A 1622A	15 + 15	0	
	External Visual	⊠	ESCC Basic Spec 20500	1524A 1622A	15 + 15	0	
	Operating Life	⊠	ESCC 5000 Para. 8.19	1524A 1622A	15 + 15	0	
Endurance Subgroup	Electrical Measurement	⊠	Intermediate and End- Point Electrical Measurements	1524A 1622A	15 + 15	0	
Endu	Seal Fine leak Gross leak	⊠	MIL-STD-750 TM1071	1524A 1622A	15 + 15	0	
	External Visual Inspection	×	ESCC Basic Spec 20500	1524A 1622A	15 + 15	0	
	Permanence of Marking		ESCC Basic Spec 24800				Not applicable on Laser marking
d life	Terminal Strength	×	ESCC 5000 Para, 8,18	1524A 1622A	5+5	0	
Assembly Capability Subgroup	Internal Visual	×	ESCC Basic Spec 20400	1524A 1622A	5 + 5	0	
Su	Bond Strength	×	MIL-STD-750 TM 2037	1524A 1622A	3 + 3	0	
	Die Shear	⊠	MIL-STD-750 TM 2017	1524A 1622A	3 + 3	0	



### APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL

Component title: Power Mosfet STRH40P10, STRH12P10

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Ch art Lests Lests	Test	Tick when done	Conditions	Date Code Diffusion Lot	Tested Qty	N° of Rejects	Comments if not performed. Comments on Rejection
Tests							
Tests							
		-					
						<u> </u>	<del>,</del>



Box 22

Additional Comments.

### APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL

Component title: Power Mosfet STRH40P10, STRH12P10

Executive Member: CNES Date: 07/02/2017

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

	LES ON THE COMPLETION OF THE AFFEICATION FORM FOR ESCE QUALIFICATION EXTENSION AFFROVAL
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.