



APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL

Component Title: Power Schottky Barrier Diodes based on types 1N5819U, 1N5822U and STPS

Executive Member: CNES

Date: 25/11/2024

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

Table with 6 columns: ESCC COMPONENT NO., VARIANTS, RANGE OF COMPONENTS, BASED ON, TEST VEHICLE / S, COMPONENT SIMILAR. Rows include component numbers like 5106/021, 5106/020, etc.

Table with 4 columns: Component Manufacturer (2), Location of Manufacturing Plant(s) (3), Date of original qualification approval (4), Certificate Ref No. (368).

Table with 3 columns: ESCC Specifications used for Maintenance of qualification testing (5), Deviations to LVT testing and Detail Specification used (6), Qualification Extension Report reference and date (7).

Summary of procurement or equivalent test results during current validity period in support of this application (those to ESCC listed first)

Table with 5 columns: Project Name, Testing Level, LAT, Date code, Quantity Delivered.

Table with 2 columns: PID changes since start of qualification (9), Current PID Verified by: CNES (10).

Table with 2 columns: Current Manufacturing facilities surveyed by: CNES on 12/07/2023 (11), Satisfactory: Yes (checked), No, Explain, Report Reference: CR-Visite Juillet 2023.



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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: 30/11/2024

B. Schade: Head of the Quality Department



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

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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:

STPS80A150CSGH 33945004YW SMD.5 F4 Sg2 (DC 2214)	1N5822U01B 3383800802 LCC2B F4 Sg1&3 (DC 2242)
STPS40A150CHYG 33945004YV TO254AA F4 (DC 2209)	1N5819U01BF 33712001WV LCC2B F4 (DC 2311)
STPS80A45CSGH 3652003ZB SMD.5 F4 (DC 2221)	STPS20100C2FYTE 33020001ZE TO254 F4 (DC 2312)

Detail Specification reference: See box 5

Chart F4	Test	Tick when done	Conditions	Date Code Diffusion Lot	Tested Qty	N° of Rejects	Comments if not performed. Comments on Rejection
Environmental/Mechanical Subgroup	Mechanical shock	<input checked="" type="checkbox"/>	MIL-STD-750 TM2016	2209 2312	75	0	
	Vibration	<input checked="" type="checkbox"/>	MIL-STD-750 TM2056	2209 2312	75	0	
	Constant acceleration	<input checked="" type="checkbox"/>	MIL-STD-750 TM2006	2209 2312	75	0	
	Seal Fine leak Gross leak	<input checked="" type="checkbox"/>	MIL-STD-750 TM1071	2209 2312	75	0	
	Electrical Measurement	<input checked="" type="checkbox"/>	Intermediate and End-Point Electrical Measurements	2209 2312	75	0	
	External Visual	<input checked="" type="checkbox"/>	ESCC Basic Spec 20500	2221 2312	75	0	
	Thermal shock	<input type="checkbox"/>	MIL-STD-750 TM1056				Only applicable to axial lead glass diodes
	Temperature Cycling	<input checked="" type="checkbox"/>	MIL-STD-750 TM1051	2209 2312	75	0	
	Moisture Resistance	<input checked="" type="checkbox"/>	MIL-STD-750 TM1021	2209 2312	75	0	
	Seal Fine leak Gross leak	<input checked="" type="checkbox"/>	MIL-STD-750 TM1071	2209 2312	75	0	
	Electrical Measurement	<input checked="" type="checkbox"/>	Intermediate and End-Point Electrical Measurements	2209 2312	75	0	
External Visual	<input checked="" type="checkbox"/>	ESCC Basic Spec 20500	2209 2312	75	0		
Endurance Subgroup	Operating Life	<input checked="" type="checkbox"/>	ESCC 5000 Para. 8.19	2209 2312	75	0	
	Electrical Measurement	<input checked="" type="checkbox"/>	Intermediate and End-Point Electrical Measurements	2209 2312	75	0	
	Seal Fine leak Gross leak	<input checked="" type="checkbox"/>	MIL-STD-750 TM1071	2209 2312	75	0	
	External Visual Inspection	<input checked="" type="checkbox"/>	ESCC Basic Spec 20500	2209 2312	75	0	
Assembly Capability Subgroup	Permanence of Marking	<input type="checkbox"/>	ESCC Basic Spec 24800				Not applicable for laser marking
	Terminal Strength	<input checked="" type="checkbox"/>	ESCC 5000 Para. 8.18	2209 2312	25	0	
	Internal Visual	<input checked="" type="checkbox"/>	ESCC Basic Spec 20400	2209 2312	25	0	
	Bond Strength	<input checked="" type="checkbox"/>	MIL-STD-750 TM 2037	2209 2312	15	0	
	Die Shear	<input checked="" type="checkbox"/>	MIL-STD-750 TM 2017	2209 2312	15	0	



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Chart F4	Test	Tick when done	Conditions	Date Code Diffusion Lot	Tested Qty	N° of Rejects	Comments if not performed. Comments on Rejection
Additional Tests		<input type="checkbox"/>					
		<input type="checkbox"/>					
		<input type="checkbox"/>					



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NOTES 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.