

		<b>APPLICATION FOR ESCC QUALIFICATION APPROVAL</b>				Page 1  Appl. No.  <b>361 rev1</b>
		Component Title: TRANSISTOR BIPOLAR LOW AND HIGH POWER SINGLE DUAL MATCH AND COMPLEMENTARY NPN/PNP (addition of type 2ST15300)				
		Executive Member: CNES		Date: 11/05/2020		
Components ( <b>new type</b> ) submitted for Qualification Approval						1
ESCC COMPONENT. NO.	VARIANTS	RANGE OF COMPONENTS	BASED ON	TEST VEHICLE / S	COMPONENT SIMILAR	
5201/020	01	Package: SMD.5	<b>2ST15300</b>		2N5153 / 2N5154	
		VCBO=300V, VCEO=100V				
		Operating Temperature Range (°C): -65 to +200				
Component Manufacturer STMicroelectronics		Location of Manufacturing Plant 3, rue de Suisse BP4199, 35041 Rennes Cedex		ESCC Specification used for Qualification  Generic: 5000 Issue: 8 Detail/s: 5201/020 Issue: 1		
Qualification Report Reference and date: DM00684358-rev2, (including RVT+ SEM construction analysis)			5	PID used for manufacturing Qualification Lot		
Date: 07/05/2020				Ref No: 8124528_23 (bipolar) & 8097046_23 (generic) Issue: 23 & 23 Date: 05/05/2020		
PID changes since start of qualification None <input checked="" type="checkbox"/> Minor* <input type="checkbox"/> Major* <input type="checkbox"/>			7	Current PID Verified by CNES		
(* Details not published, provided in confidential annex 2.)				Name of Executive Representative Agency  Ref No: 8124528_23 (bipolar) & 8097046_23 (generic) Issue: 23 & 23 Date: 11/05/2020		
Current Manufacturing facilities surveyed by:  CNES						9
(Name of Executive Responsible Agency)  CR-Etude SMD5 ST Mai 2019						
(Date)  20/05/2019						
Report Reference  Satisfactory: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Explain						
Quality and Reliability Data  Evaluation testing performed Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  Report Ref. No.: Construction analysis report Date: 27/08/2017  Equivalent Data:  Certification:				Failure analysis, DPA, NCCS available Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  (supply data)    Ref Nos. and purpose:		
						10

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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 13; that the reports and data are available at the ESCC Executive and therefore applies for ESCC qualification status to be  
given to the component(s) listed herein.

Date: 12/05/2020

JP. BUSSENOT

(Signature of the Executive Coordinator)

Continuation of Boxes above: (Only non-confidential comments)

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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:

14

Executive Manager Disposition

15

Application Approval: Yes ☒ No ☐

Action / Remarks:

Date:

 Digitally signed  
by Britta Schade  
Date: 2020.06.09  
09:44:08 +02'00'

B. Schade: Head of ESA Product Assurance  
and Safety Department

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**ANNEX 1: LIST OF TESTS DONE TO SUPPORT 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:

2ST15300RSRG3, DC 1813

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
Environmental/Mechanical Subgroup	Mechanical shock	<input checked="" type="checkbox"/>	MIL-STD-750 TM2016	1813	15	0	
	Vibration	<input checked="" type="checkbox"/>	MIL-STD-750 TM2056	1813	15	0	
	Constant acceleration	<input checked="" type="checkbox"/>	MIL-STD-750 TM2006	1813	15	0	
	Seal Fine leak Gross leak	<input checked="" type="checkbox"/>	MIL-STD-750 TM1071	1813	15	0	Click here to enter text.
	Electrical Measurement	<input checked="" type="checkbox"/>	Intermediate and End-Point Electrical Measurements	1813	15	0	
	External Visual	<input checked="" type="checkbox"/>	ESCC Basic spec 20500	1813	15	0	
	Thermal shock	<input type="checkbox"/>	MIL-STD-750 TM1056				Not applicable
	Temperature Cycling	<input checked="" type="checkbox"/>	MIL-STD-750 TM1051	1813	15	0	Click here to enter text.
	Moisture Resistance	<input checked="" type="checkbox"/>	MIL-STD-750 TM1021	1813	15	0	
	Seal Fine leak Gross leak	<input checked="" type="checkbox"/>	MIL-STD-750 TM1071	1813	15	0	
	Electrical Measurement	<input checked="" type="checkbox"/>	Intermediate and End-Point Electrical Measurements	1813	15	0	
	External Visual	<input checked="" type="checkbox"/>	ESCC Basic spec 20500	1813	15	0	
Endurance Subgroup	Operating Life	<input checked="" type="checkbox"/>	MIL-STD-750 / TM 1026	1813	15	0	
	Electrical Measurement	<input checked="" type="checkbox"/>	Intermediate and End-Point Electrical Measurements	1813	15	0	
	Seal Fine leak Gross leak	<input checked="" type="checkbox"/>	MIL-STD-750 TM1071	1813	15	0	
	External/Internal Visual Inspection	<input checked="" type="checkbox"/>	ESCC Basic spec 20500	1813	15	0	
	Permanence of Marking	<input checked="" type="checkbox"/>	ESCC Basic spec 24800	1813	15	0	
Assembly Capability Subgroup	Permanence of Marking	<input type="checkbox"/>	ESCC Basic Spec 24800				Not applicable on Laser marking
	Terminal Strength	<input checked="" type="checkbox"/>	MIL-STD-883 / TM 2036	1813	5	0	
	Internal Visual	<input checked="" type="checkbox"/>	ESCC Basic Spec 20400	1813	5	0	
	Bond Strength	<input checked="" type="checkbox"/>	MIL-STD-750 TM 2037	1813	3	0	
	Die Shear	<input checked="" type="checkbox"/>	MIL-STD-750 TM 2017	1813	3	0	
Additional Tests							

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**NOTES ON THE COMPLETION OF THE APPLICATION FORM FOR ESCC QUALIFICATION APPROVAL****ENTRIES**

- Form Heading** shall indicate:— the title of the component as given in its detail specification or the name of the series or family; — the entering date; — the serial number and the suffix of the form.
- Box 1** shall provide details given in table; in particular there shall be listed - the variants or range of variants; the range of components by using the ESCC code for values tolerances, etc.; the designation given in detail specification as 'based on'; ---under Test Vehicle enter either a cross or the specific characteristic capable to identify the component tested; — under component similar enter a cross.
- Box 2 and 3** Manufacturer's name and location of plant where the components were manufactured and tested.
- Box 4** Generic and detail specifications used during qualification program.
- Box 5** Reference to test report(s) submitted in support of application.
- Box 6** Enter details to identify the PID that was applicable at the time the qualification lot was manufactured.
- Box 7** If the PID was evolved after qualification lot manufacture, adequate details of such evolution shall be provided together with reasons for changes. Major changes shall be clearly marked.
- Box 8** The box serves to identify the current PID and the Executive Representative that has verified it together with the date of this occurrence.
- Box 9** This box can be completed only after a physical visit to the plant to confirm that the practices, procedures, materials, 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 10** Details entered shall be sufficient to evidence that an evaluation program according to ESCC Basic Specification No. 22600 has been performed and that the results thereof are summarized in the survey and test reports. If the evaluation program has not been carried out according to established ESCC documents, the applicant Executive Representative shall provide alternative data and declare its assessed degree of satisfactory compliance with the ESCC basic requirements. Reference shall be made to the reports on Destructive Physical Analysis (DPA), Failure Analysis and Non conformance (NCCS) issued during the Evaluation and/or Qualification Phase.
- Box 11** Enter the name of the Executive Coordinator and the signature.
- Box 12** To be used when there is a need to expand any of the boxes from 1 through 10. Identify box affected and reference the Box 12 in the relevant Box. Box 12 can be broken into 12a, 12b, etc. if several Boxes have to be expanded.
- Box 13** Fill table as requested.
- Box 14** Fill in any additional tasks required to achieve full compliance.
- Box 15** All Executive recommendations on the application itself, special conditions or restrictions, modifications of the QPL or ESCC QML entry, letters to the manufacturer, etc. shall be entered clearly in Box 15, signed by the ESA Representative.
- Box 16** Fill in Table as requested.
- Box 17** Confidential details of PID changes shall be provided.
- Box 18** State noncompliance with reference to specification(s) and paragraph(s). To simplify reference in Box 18 each nonconformance shall be sequentially numbered. If relevant state 'None'
- Box 19** Any additional action deemed necessary by the Executive Representative 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 nonconformance.
- Box 20** Additional Comments