

		<b>APPLICATION FOR ESCC QUALIFICATION APPROVAL</b>				Page 1  Appl. No 363
		Component Title: TRANSISTORS, POWER, MOSFET, N CHANNEL, RAD-HARD BASED ON TYPES BUY06CS35J-01, BUY06CS80A 01, BUY06CS23K-01 AND BUY06CS45B-01				
		Executive Member: DLR		Date: 04/11/2019		
Components (including series and families) submitted for Qualification Approval						1
ESCC COMPONENT. NO.	VARIANTS	RANGE OF COMPONENTS	BASED ON	TEST VEHICLE / S	COMPONENT SIMILAR	
5205/032/01R	01		BUY06CS35J-01	1903A	X	
5205/032/02R	02		BUY06CS80A-01	1903B, 1903C	X	
5205/032/03R	03		BUY06CS23K-01	1905A	X	
5205/032/04R	04		BUY06CS45B-01	1905C, 1905D	X	
Component Manufacturer Infineon Technologies AG		Location of Manufacturing Plant Villach, Austria for Silocon Neubiberg, Germany for packing and screening		ESCC Specification used for Qualification  Generic: 5000 Issue: 7 Detail/s: 5205/032 Issue: 1		
Qualification Report Reference and date: 1721LR11 (Iss. 1a), 1721LR12 (Iss 1a), 1721LR13 (Iss. 1b), 1721LR14 (Iss. 1b), 1721LR15 (Iss. 1b), 1721LR16 (Iss 1a) Date: 09/08/2019			PID used for manufacturing Qualification Lot  Ref No: A63500-L5491-P000 Issue: 7a Date: 18/10/2018			
PID changes since start of qualification None <input checked="" type="checkbox"/> Minor* <input type="checkbox"/> Major* <input type="checkbox"/> (* Details not published, provided in confidential annex 2.)			Current PID Verified by B. Gökgöz  Name of Executive Representative Ref No: A63500-L5491-P000 Issue: 7a Date: 18.10.2018			
Current Manufacturing facilities surveyed by: ESA & DLR (T.Kaupisch)						9
(Name of Executive Responsible) IFX-AUD-2018						
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.: Date: 06/12/2018 Equivalent Data: Internal evaluation according to ESCC2265000 60V_Qualification_info_package.zip Certification:			Failure analysis, DPA, NCCS Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> available (supply data)  Ref Nos. and purpose: Available from 250V activities: CA0628 (SMD) & CA0654 (TO)).			

	<b>APPLICATION FOR ESCC QUALIFICATION APPROVAL</b>		Page 2
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			Appl. No. 363
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.			11
Date: 04/11/2019			 (Signature of the Executive Coordinator)
Continuation of Boxes above: (Only non-confidential comments)			12



## APPLICATION FOR ESCC QUALIFICATION APPROVAL

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BASED ON TYPES BUY06CS35J-01, BUY06CS80A 01,  
BUY06CS23K-01 AND BUY06CS45B-01

Executive Member: DLR

Date: 04/11/2019

Page 3

Appl. No.  
363

Non compliance to ESCC requirements:

13

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: 27.1.2020

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

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Date: 04/11/2019		

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

16

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:


BUY06CS80A-01(ES)	Date Code: 1903C, 1903B
BUY06CS45B-01(ES)	Date Code: 1905C, 1905D

Detail Specification reference: ESCC Detail Specification No. 267 (5205/032) Issue 1 Dft D, Aug. 2019

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	1903C 1903B 1905C 1905D	16 6 10 10	0 0 0 0	
	Vibration	<input checked="" type="checkbox"/>	MIL-STD-750 TM2056	1903C 1903B 1905C 1905D	16 6 10 10	0 0 0 0	
	Constant acceleration	<input checked="" type="checkbox"/>	MIL-STD-750 TM2006	1903C 1903B 1905C 1905D	16 6 10 10	0 0 0 0	
	Seal Fine leak Gross leak	<input checked="" type="checkbox"/>	MIL-STD-883 TM1014	1903C 1903B 1905C 1905D	16 6 10 10	0 0 0 0	See Appendix 'A' in ESCC Detail Specification – Deviations from Qualification and Periodic Tests – Chart F4
	Electrical Measurement	<input checked="" type="checkbox"/>	Intermediate and End-Point Electrical Measurements	1903C 1903B 1905C 1905D	16 6 10 10	0 0 0 0	
	External Visual	<input checked="" type="checkbox"/>	ESCC Basic spec 20500	1903C 1903B 1905C 1905D	16 6 10 10	0 0 0 0	
	Thermal shock	<input type="checkbox"/>	MIL-STD-750 TM1056				Temperature Cycling performed
	Temperature Cycling	<input checked="" type="checkbox"/>	MIL-STD-883 TM1010	1903C 1903B 1905C 1905D	10 10 10 10	0 0 0 0	See Appendix 'A' in ESCC Detail Specification – Deviations from Qualification and Periodic Tests – Chart F4
	Moisture Resistance	<input checked="" type="checkbox"/>	MIL-STD-750 TM1021	1903C 1903B 1905C 1905D	10 10 10 10	0 0 0 0	
	Seal Fine leak Gross leak	<input checked="" type="checkbox"/>	MIL-STD-883 TM1014	1903C 1903B 1905C 1905D	10 10 10 10	0 0 0 0	See Appendix 'A' in ESCC Detail Specification – Deviations from Qualification and Periodic Tests – Chart F4
	Electrical Measurement	<input checked="" type="checkbox"/>	Intermediate and End-Point Electrical Measurements	1903C 1903B 1905C 1905D	10 10 10 10	0 0 0 0	
	External Visual	<input checked="" type="checkbox"/>	ESCC Basic spec 20500	1903C 1903B 1905C 1905D	10 10 10 10	0 0 0 0	
Endurance Subgroup	Operating Life	<input checked="" type="checkbox"/>	ESCC 5000 Para. 8.22	1903C 1903B	18 17	0 0	
	Electrical Measurement	<input checked="" type="checkbox"/>	Intermediate and End-Point Electrical Measurements	1903C 1903B	18 17	0 0	
	Seal Fine leak Gross leak	<input checked="" type="checkbox"/>	MIL-STD-883 TM1014	1903C 1903B	18 17	0 0	See Appendix 'A' in ESCC Detail Specification – Deviations from Qualification and Periodic Tests – Chart F4
	External/Internal Visual Inspection	<input checked="" type="checkbox"/>	ESCC Basic spec 20500	1903C 1903B	18 17	0 0	
a b	Solderability	<input checked="" type="checkbox"/>	MIL-STD-750 TM2026	1905C	5	0	



				1905D	5	0	
	Resistance to Soldering Heat	<input checked="" type="checkbox"/>	MIL-STD-750 TM2031	1905C 1905D	5 5	0 0	
	Seal Fine leak Gross leak	<input checked="" type="checkbox"/>	MIL-STD-883 TM1014	1905C 1905D	5 5	0 0	See Appendix 'A' in ESCC Detail Specification – Deviations from Qualification and Periodic Tests – Chart F4
	External/Internal Visual Inspection	<input checked="" type="checkbox"/>	ESCC Basic spec 20500	1905C 1905D	5 5	0 0	
	Terminal Strength	<input checked="" type="checkbox"/>	MIL-STD-750 TM2036	1905C 1905D	6 6	0 0	
	Bond Strength	<input checked="" type="checkbox"/>	MIL-STD-750 TM2037	1903C 1903B 1905C 1905D	9 9 6 6	0 0 0 0	
	Die Shear	<input checked="" type="checkbox"/>	MIL-STD-750 TM2017	1903C 1903B 1905C 1905D	9 9 6 6	0 0 0 0	
	Permanence of Marking	<input type="checkbox"/>	ESCC Basic spec 24800				n.a. due to laser marking

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<p align="center"><b>NOTES ON THE COMPLETION OF THE APPLICATION FORM FOR ESCC QUALIFICATION APPROVAL</b></p>		
<p><b>ENTRIES</b></p>		
<p><b>Form Heading</b></p>	<p>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.</p>	
<p><b>Box 1</b></p>	<p>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.</p>	
<p><b>Box 2 and 3</b></p>	<p>Manufacturer's name and location of plant where the components were manufactured and tested.</p>	
<p><b>Box 4</b></p>	<p>Generic and detail specifications used during qualification program.</p>	
<p><b>Box 5</b></p>	<p>Reference to test report(s) submitted in support of application.</p>	
<p><b>Box 6</b></p>	<p>Enter details to identify the PID that was applicable at the time the qualification lot was manufactured.</p>	
<p><b>Box 7</b></p>	<p>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.</p>	
<p><b>Box 8</b></p>	<p>The box serves to identify the current PID and the Executive Representative that has verified it together with the date of this occurrence.</p>	
<p><b>Box 9</b></p>	<p>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.</p>	
<p><b>Box 10</b></p>	<p>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.</p>	
<p><b>Box 11</b></p>	<p>Enter the name of the Executive Coordinator and the signature.</p>	
<p><b>Box 12</b></p>	<p>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.</p>	
<p><b>Box 13</b></p>	<p>Fill table as requested.</p>	
<p><b>Box 14</b></p>	<p>Fill in any additional tasks required to achieve full compliance.</p>	
<p><b>Box 15</b></p>	<p>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.</p>	
<p><b>Box 16</b></p>	<p>Fill in Table as requested.</p>	
<p><b>Box 17</b></p>	<p>Confidential details of PID changes shall be provided.</p>	
<p><b>Box 18</b></p>	<p>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'</p>	
<p><b>Box 19</b></p>	<p>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.</p>	
<p><b>Box 20</b></p>	<p>Additional Comments</p>	