



APPLICATION FOR ESCC QUALIFICATION APPROVAL

Component Title: TRANSISTORS, POWER, MOSFET, N CHANNEL, RAD-HARD
 BASED ON TYPES BUY65CS08J-01, BUY65CS28A-01

Executive Member: B.Gökgöz

Date: 14/04/2020

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Components (including series and families) submitted for Qualification Approval

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ESCC COMPONENT. NO.	VARIANTS	RANGE OF COMPONENTS	BASED ON	TEST VEHICLE / S	COMPONENT SIMILAR
5205/033/01R	01		BUY65CS08J-01	1837A	X
5205/033/02R	02		BUY65CS28A-01	1946C	X

Component Manufacturer Infineon Technologies AG	2	Location of Manufacturing Plant Villach, Austria for Silocon Neubiberg, Germany for packing and screening	3	ESCC Specification used for Qualification	4
				Generic: 5000 Issue: 8 Date: 06/2019 Detail/s: 5205/033 Issue: 1 Draft B Date: 02/2020	

Qualification Report Reference and date: 1447LR31, Iss. 2a; 1447LR32, Iss. 1a; Qualification Tests Summary, Iss. 1.1 Date: 07/04/2020	5	PID used for manufacturing Qualification Lot	6
		Ref No: A63500-L5491-P000 Issue: 8 Date: 01/10/2019	

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.)	7	Current PID Verified by B. Gökgöz	8
		Name of Executive Representative Ref No: A63500-L5491-P000 Issue: 8 Date: 01/10/2019	

Current Manufacturing facilities surveyed by: ESA & DLR (T.Kaupisch)	18/10/2018	9
(Name of Executive Responsible)	(Date)	

Report Reference IFX-AUD-2018
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: 25/07/2019 Equivalent Data: Internal evaluation according to ESCC2265000 650V_Qualification_info_package.zip Certification:	10
Failure analysis, DPA, NCCS available (supply data) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Ref Nos. and purpose: Available from 250V activities: CA0628	



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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: 14/04/2020

I.A. Burak Gökgöz

(Signature of the Executive Coordinator)

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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

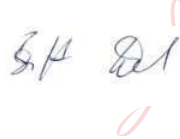
Executive Manager Disposition

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Application Approval: Yes No

Action / Remarks:

Date:

 Digitally signed
by Britta Schade
Date: 2020.06.08
09:40:59 +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

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:

BUY65CS08J-01(ES)	Date Code Diffusion Lot: 1837A
BUY65CS28A-01(ES)	Date Code Diffusion Lot: 1946C

Detail Specification reference: ESCC Detail Specification No. 274 (5205/033) Issue 1 Dft B, Feb. 2020

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	1946C	17	0	
	Vibration	<input checked="" type="checkbox"/>	MIL-STD-750 TM2056	1946C	17	0	
	Constant acceleration	<input checked="" type="checkbox"/>	MIL-STD-750 TM2006	1946C	17	0	
	Seal Fine leak Gross leak	<input checked="" type="checkbox"/>	MIL-STD-883 TM1014	1946C	17	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	1946C	17	0	
	External Visual	<input checked="" type="checkbox"/>	ESCC Basic spec 20500	1946C	17	0	
	Thermal shock	<input type="checkbox"/>	MIL-STD-750 TM1056				Temperature Cycling performed
	Temperature Cycling	<input checked="" type="checkbox"/>	MIL-STD-883 TM1010	1837A 1946C	17 17	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	1837A 1946C	17 17	0 0	
	Seal Fine leak Gross leak	<input checked="" type="checkbox"/>	MIL-STD-883 TM1014	1837A 1946C	17 17	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	1837A 1946C	17 17	0 0	
	External Visual	<input checked="" type="checkbox"/>	ESCC Basic spec 20500	1837A 1946C	17 17	0 0	
Endurance Subgroup	Operating Life	<input checked="" type="checkbox"/>	ESCC 5000 Para. 8.22	1837A	16	0	
	Electrical Measurement	<input checked="" type="checkbox"/>	Intermediate and End-Point Electrical Measurements	1837A	16	0	
	Seal Fine leak Gross leak	<input checked="" type="checkbox"/>	MIL-STD-883 TM1014	1837A	16	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	1837A	16	0	
Assembly Capability Subgroup	Terminal Strength	<input type="checkbox"/>	MIL-STD-750 TM2036				n.a. acc. to ESCC Detail Specification
	Internal Visual	<input checked="" type="checkbox"/>	ESCC Basic Spec 20400	1837A 1946C	9 6	0 0	
	Bond Strength	<input checked="" type="checkbox"/>	MIL-STD-750 TM2037	1837A 1946C	9 6	0 0	
	Die Shear	<input checked="" type="checkbox"/>	MIL-STD-750 TM2017	1837A 1946C	9 6	0 0	
	Permanence of Marking	<input type="checkbox"/>	ESCC Basic spec 24800				n.a. due to laser marking

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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