

### APPLICATION ESCC CAPABILITY APPROVAL FOR ASSEMBLY AND TEST HOUSE (ATH) SERVICES (or its EXTENSION):

CAPABILITY DOMAIN: Hermetically Encapsulated Discrete

Appl. No.

Page 1

Semiconductor Components in SMD and TO Packages

379A

Executive Member: German Space Agency at DLR Date: 11.12.2024

1 Capability domain submitted for approval Capability Domain Component Proposed for Capability Abstract Based **Test Structures** on Technology Qualification Number Description L1014-005 (in SMD05) Hermetically Encapsulated 797000-010-C Issue C L6002-039 (in TO39) Discrete Semiconductor Silicon Silicon power 14.06.2024 n-MOSFETs Components, n-channel power MOSFETs in SMD and **TO Packages** 2 3 4 Assembly and Test House Locations of Assembly and Test House ESCC Specifications used for Capability Approval Testing First Sensor Lewicki GmbH First Sensor Lewicki GmbH Generic: ESCC 2567000Issue 1 Allee 35 Allee 35 Details: 797101-001-A (L1056-005) 89610 Oberdischingen 89610 Oberdischingen 797102-001-A (L6002-039) 5 6 Test Report reference: PID used for manufacturing Approval Testing Lot Reference No.: 797000-002 Report Requalification 2024 L1056-005 Issue: E date: 02.12.2024 Report Requalification 2024 L6002-039 Date: 29.11.2023 date: 18.10.2024 8 7 PID Changes since start of Capability Approval Current PID Verified by: Burak Gökgöz German Space Agency at DLR None X Ref. No.: 797000-002 Minor\* \* provide details in Box 12 Issue: Major\* □ Ε Date: 29.11.2023 9 Current Manufacturing Facilities and Quality System audited by Burak Gökgöz 22.05.2024 FSL-AUD-2024 on German Space Agency at DLR Date Report Reference Number Name of Executive Representative Corrective Actions Closed Out: Satisfactory: Yes X No □ Yes No X N/A 10 Quality and Reliability Data Failure Analysis, DPA, CA, NCCS: Yes X No X Evaluation testing performed Yes No 🗆 (supply data) Report Ref. No.: Ref. Nos. and purpose: Equivalent data: NCCS: NC1DFSL401 (30.08.2024) NC2DFSL402 (26.09.2024) (provide details) Certification:



## APPLICATION FOR ESCC CAPABILITY APPROVAL FOR ASSEMBLY AND TEST HOUSE (ATH) SERVICES (or its EXTENSION):)

**CAPABILITY DOMAIN:** Hermetically Encapsulated Discrete Semiconductor Components in SMD and TO Packages

Application No.

Page 2

379A

Executive Member:German Space Agency at DLR Date: 11.12.2024

11

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 evidenced except as stated in box 13; that the reports and data are available at the ESCC Executive and therefore applies for ESCC Capability Approval status to be given to the capability domain defined herein.

Date: 11.12.2024

i.A Burak Gökgöz German Space Agency at DLR (Signature of the Executive Coordinator)

Continuation of Boxes above:

12

### Continuation of Box 7:

| PID Issue | Date       | Changes   |
|-----------|------------|---|
| С         | 09.11.2021 | Signature field supplemented with job titles  |
| D         | 01.10.2022 | "Quality levels" renamed to "service levels". Affected sections:                        |
|           |            | - Order handling (3.3.1 & 3.3.2)  |
|           |            | - Control documentation (5)   |
|           |            | Service levels introduced to distinct between the scope of the ESCC 2567000             |
|           |            | certification and the additional offered screening and testing capabilities (sect. 1.1) |
|           |            | and few Editorial changes   |
| E         | 29.11.2023 | PIND added to PCA testing   |



# APPLICATION FOR ESCC CAPABILITY APPROVAL FOR ASSEMBLY AND TEST HOUSE (ATH) SERVICES (or its EXTENSION):)

Page 3

Application No.

CAPABILITY DOMAIN: Hermetically Encapsulated Discrete

B.Schade: Head of the Quality Department

|  | Semiconductor Cor          | Semiconductor Components in SMD and TO Packages 379A |                    |                       |                  |    |
|--|----------------------------|--|--------------------|-----------------------|------------------|----|
|  | Executive Member:          | German Space   | Agency at DLR D    | ate: 11.12.2024       |                  |    |
| Non compliance to ES                   | SCC requirements:          |  |                    |                       |                  | 13 |
| No.:                                   | Specification              |  | Paragraph          |                       | Non compliance   | 1  |
|  |                            |  |                    |                       |                  |    |
|  |                            |  |                    |                       |                  |    |
| Additional tasks requir noncompliance: | ed to achieve full complia | ance for ESCC C                                      | Capability Approva | ıl or rationale for a | acceptability of | 14 |
|  |                            |  |                    |                       |                  |    |
|  |                            |  |                    |                       |                  |    |
| Executive Manager D                    | Disposition:               |  |                    |                       |                  | 15 |
| Application Approval:                  | Yes X No                   | <b>D</b>   |                    |                       |                  |    |
| Action/Remarks:                        |                            |  |                    |                       |                  |    |
| Data:                                  |                            |  |                    | 2                     | DI               |    |



#### APPLICATION FOR ESCC CAPABILITY APPROVAL

Page 4

CAPABILITY DOMAIN:

Executive Member:

Date:

Application No.

### NOTES ON THE COMPLETION OF THE APPLICATION FORM FOR ESCC CAPABILITY APPROVAL [or its EXTENSION, see BOX 12 below]

GENERAL Whenever possible, all entries should be typed and in any case be suitable for legible reproduction by normal

means.

**ENTRIES** 

Form heading

shall indicate: - the title of the capability domain or the technology as given in the Capability Abstract - the Executive Member; - the entering date; - the serial number and the suffix of the form.

Executive Member, - the efficient date, - the serial number and the suffix of the form.

shall provide under capability domain description the full name or a description statement of the capability domain – the number of the Capability Abstract document – the basic technology used for capability approval

- the test structures specification numbers or identification numbers - the components which successfully passed component approval test and are proposed for qualification within the domain.

N.B. The capability abstract shall be attached as an Appendix.

Box 2 and 3 Manufacturer's name and location of the plant(s) where the capability domain is situated.

Box 4 The ESCC Generic and Detail specifications (including issue number and date) used during Capability

Approval.

Box 5 Reference to test report(s) submitted in support of the application for capability approval and components

proposed for qualification.

Box 6 Enter details to identify the PID that was applicable at the time of manufacturing of samples for capability

approval testing.

Box 7 If the PID has been changed during or after capability approval testing, adequate details shall be provided

together with the reasons for change. Major changes shall be clearly identified.

Box 8 The box serves to identify the current PID and the Executive Representative that has verified it together with

the date of this verification.

Box 9 The box can be completed only after a physical visit to the plant to confirm that the practices, procedures,

material, etc. used in manufacturing the components are as described in the PID. This audit shall be carried out in accordance with the requirements of ESCC Basic Specification No. 20200 and the results shall be

formally recorded. The report number shall be referenced.

Box 10 Details entered shall be sufficient to evidenced that an evaluation programme according to ESCC Basic

Specification No. 24300 has been performed and that the results thereof are summarised in the audit and test reports. If the evaluation programme has not been carried out according to established ESCC Specifications, the applicant Executive Member shall provide alternative data and declare the assessed degree of satisfactory compliance with the ESCC requirements. Reference shall be made to the reports on Destructive Physical Analysis (DPA), Failure Analysis reports as well as any Non Conformance (NCCS) issued during the

Evaluation and/or capability approval testing.

Box 11 Enter the name of the Executive Member (i.e., CNES, DLR, ESTEC, etc.) and the signature and date of the

responsible Executive Coordinator.

Box 12 To be used when there is a need to expand any of the boxes from 1 through 10. Identify the Box affected and

reference Box 12 in the relevant Box. Box 12 can be broken into 12a, 12b, etc. if several boxes have to be

expanded.

In the case of Application for the Extension of Capability Approval, the Box 12 may be used to provide a summary of lots of component types (types, date codes, quantity) manufactured and tested within the

capability domain. Refer to ESCC 24300, paragraph 9.4.3 for complete requirements.

Box 13 State noncompliance with reference to specification(s) and paragraph(s). To simplify reference in Box 14 each

nonconformance shall be sequentially numbered. If relevant state 'None'.

Box 14 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 15

All Executive Manager recommendations on the application itself, special conditions or restrictions, modifications of the ESCC QPL entry, letters to the manufacturer, etc. shall be entered clearly in Box 15,

signed by the representative for ESA, and dated.