DOCUMENT CHANGE REQUEST

DCR number 1020	Changes required for: General	Originator: Steve Jeffery
Date: 2016/11/17	Date sent: 2016/08/12	Organisation: ESCC Executive
Status: IMPLEMENTED		

Title:	High Electron Mobility Transistors Microwave Low Noise Small Signal Gallium Arsenide, based on		
Number:	5613/004	Issue:	2

Other documents affected:

Page:

Total reformat/re-write of ESCC Detail Specification 5613/004 issue 2 as part of the ongoing conversion of legacy ESA/SCC specifications to the ESCC format, as well as reflecting changes resulting from the conversion of ESCC Generic Specification No. 5010.

The layout, format and general content of 5613/004 issue 3 is based on other converted ESCC Detail Specifications (see attached for proposed 5613/004 issue 3).

The technical content of ESCC 5613/004 issue 3 remains closely based on the original ESCC 5613/004 issue 2 except as detailed herein.

Paragraph:

All.

Original wording:

See original ESCC 5613/004 issue 2.

Proposed wording:

Total reformat of this Detail Specification (from the range of various ESCC Detail Specifications, 5xxx/xxx, for microwave discrete semiconductors under Generic Specification No. 5010) as part of the ongoing conversion to the ESCC format.

See below for summary of changes, also see attached the proposed 5613/004 issue 3.

Note: known support for active procurement against this specification includes the following Manufacturers:
• Infineon Technologies AG.

Summary of changes to the current format, layout and content is as follows:

1) General
Rewording and restructure of various sections and paragraphs of the specification, plus other editorial changes including deletion of any redundant paragraphs and information, based on the layout and editorial content of other Detail Specifications already converted to ESCC format.

Specific amendments include:

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2) Para. 1.7 Handling Precautions: Last sentence amended (addition of the standard phrase per ESCC Basic Specification No. 23800).

3) Para 3: delete added abbreviations.

4) Table 1(a), Para 4.4.2: Lead material typographic error corrected to G (i.e. G2 instead of 02 or D2).

5) Table 1(b) Maximum Ratings, Drain Current: this rating must not be exceeded under any combination of DC ratings and RF voltage/current swings. New Note added accordingly.

6) Table 1(b) Maximum Ratings, Operating Temperature Range and Thermal Resistance, Channel-to-Soldering Point Characteristics added.

7) Figure 1 is replaced by Para. 1.5 (Ptot, Rth(j-s), Note 2). The Tamb derating is no longer relevant and hence is removed.

8) Figure 3: Note 1 deleted (this information is included in Physical Dimensions and Terminal Identification). New note added that lid is connected to source terminal.

9) Paras 4.2.2(a) to (d) & 4.2.3(a), (b) & 4.2.4(a) to (e) & 4.2.5(d), (e), (f): Deviations are made redundant by the latest Generic 5010 and hence are deleted.

10) Para 4.2.2(e) & 4.2.3(d) and (e): deviations are moved to new Appendix A (as they are considered to only be applicable to Infineon).

11) Para 4.2.3(c): is no longer considered to be a deviation (based on the latest Generic 5010). Table 4 (Parameter Drift Values) is modified to specify the required drift value measurements.

12) Paras 4.3.4 & 4.3.5: Test Condition (b) for both Bond Strength & Die Shear are moved to new Appendix A for Infineon (as these specify deviations to the ESCC Generic (& MIL) requirements as applied specifically by Infineon). Para. 4.3.4 is deleted and Para 4.3.5 re-worded (standard wording for alternative requirement for when the package clearances are such that the normal die shear test cannot be performed; q.v. 5611/006 et al).

13) Para 4.4.1: metal lid is added to description of the case.

14) Para 4.7 Burn-in Tests: para is made redundant by the latest Generic 5010 and hence is deleted.

15) Table 2 No. 10, Notes 4 & 5: deleted as these are for typical characteristics, provided for information only; such information shall not be included in ESCC procurement specs.

16) Table 3: tests are to be performed on a sample basis (5 components) in line with the default condition in ESCC Generic 5010.

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17) Table 4 & Note 1: Table is modified and the note deleted in order to implement the original deviation of Para 4.2.3 (as mentioned above).

18) Figure 4 is deleted (as such generalised figures do not serve any real purpose with regards to the Detail Specification).

19) Table 5(a) Conditions for High Temperature Reverse Bias Burn-in: Characteristic (and Symbol) Ambient Temperature, Tamb replaced by the more appropriate Soldering Point Temperature, TS. Note 1 is deleted (redundant information).

20) Table 5(b) Conditions for Power Burn-in and Operating Life Tests: Characteristic (and Symbol) Ambient Temperature, Tamb replaced by the more appropriate Soldering Point Temperature, TS. Ambient Temperature Conditions are replaced with the applicable minimum Soldering Point Temperature. Channel Temperature Conditions are added along with associated new Note 2 (Ts shall be adjusted to attain the specified Tch).

21) Tables 5(a) & 5(b): New note is added regarding power-up and power-down sequences to be in-line with other specs, e.g. 5611/006.

22) Figures 5(a) & 5(b): The test circuits and timing figures are deleted, as these generalised figures serve only to indicate how a specific Manufacturer performs the test; they are not actual requirements.

23) Para 4.9, Radiation Testing: para is deleted as radiation testing is not applicable to this spec.

24) Table 6, No. 9: Symbol corrected from Pout to P-1dB. The Drift Values and Absolute Limits for Variants 01 & 02 are clarified as being not applicable.

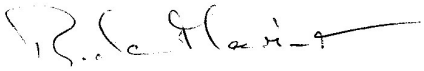
25) New Appendix A is added (applicable specific deviations for Infineon):
The deviations in Paras 4.2.2(e) & 4.2.3(d) and (e) are included (as mentioned above).
Deviation for Internal Visual Inspection, associated with original deviation 4.2.3(e), is included (q.v. 5611/008 et al).
Deviations for Bond Strength and Die Shear are included (as mentioned above).
Deviations on Pre-Burn-in, Temperature Cycling, Assembly Capability Subgroup tests, Final Customer Source Inspection & Additional Documentation and Wafer Lot Acceptance Data are included at Manufacturer Infineons request.

Justification:

Part of the ongoing conversion of legacy ESA/SCC specifications to the ESCC format. Amendments are made to the format and presentation to be consistent with the various other ESCC Detail Specifications, already converted to ESCC format, as well as the current issue of ESCC Generic Specification No. 5010.

See also change details above for justification for specific items.

Note: All changes in this DCR have been agreed with the one ESCC qualified supporting Manufacturer Infineon Technologies AG.

Attachments:
5613004_draft_3c.docx
Modifications:
N/A
Approval signature:

Date signed:
2016-11-17