DOCUMENT CHANGE REQUEST

DCR number 1034	Changes required for: General	Originator: Steve Jeffery
Date: 2016/11/14	Date sent: 2016/09/19	Organisation: ESCC Executive
Status: IMPLEMENTED		

Title:	Diodes Microwave Silicon PIN, based on BXY42-MESA		
Number:	5513/017	Issue:	4

Other documents affected:

Page:

Total reformat/re-write of ESCC Detail Specification 5513/017 issue 4 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 5513/017 issue 5 is based on other converted ESCC Detail Specifications (see attached for proposed 5513/017 issue 5).

The technical content of ESCC 5513/017 issue 5 remains closely based on the original ESCC 5513/017 issue 4 except as detailed herein.

Paragraph:

All.

Original wording:

See original ESCC 5513/017 Issue 4.

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 5513/017 issue 5.

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) Title page, Based on Type: -MESA is deleted as the type of die construction is irrelevant / not required for ESCC Detail Specifications.

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

4) Table 1(a), Variant 01: Terminal material is changed, as requested by Infineon, to E (was D).

5) Table 1(a): new column and details for Total Dose Radiation Level Letter are added, along with accompanying explanatory text after the Table.

6) Table 1(b) Maximum Ratings, Power Dissipation Characteristic and associated Notes 2 and 3: the maximum values of Tcase are moved from Notes 2 & 3 to the remark column.

7) Table 1(b) Thermal Resistance: the condition IF = 1.0mA is removed (due to confusion with the IF current condition specified in Burn-in 2).

8) Figure 1 is replaced by Para. 1.5 (PD, Rth(j-c), Notes 2 & 3).

9) Paras 4.2.1(a), (b) and (c), 4.2.2(c) and (d), 4.2.3(a) and (c), 4.2.4(c) and (d) & 4.2.5(b), (d) and (e): Deviations are made redundant by the latest Generic 5010 and hence are deleted.

10) Paras 4.2.2(a) and 4.2.4(a): Die Shear requirement and condition is not a deviation, therefore the details are included in a new para Die Shear as part of Section 2 REQUIREMENTS.

11) Additional deviation is added for Shock Test (as Mechanical Shock) as this test is considered to be not applicable for Case Types T and T1.

12) Para 4.3.3 Terminal Strength: Force shall be 1.5N rather than 1.22N, to be consistent with ESCC 5512/020.

13) Para 4.4.1: lid and sealing ring material (metal) is added to description of the case.

14) Para 4.5.1: item (a) is deleted as terminal identification marking is not required / unnecessary.

15) Para 4.5.3: Testing Level (B or C, as applicable) is deleted.

16) Para 4.5.3: Total Dose Radiation Level Letter is changed to R (i.e. 100krad TID instead of 50krad) based on information provided by Infineon

17) Paras 4.6.1 and 4.7.1: the measurements shall be performed at Tamb = +25 +/-3°C (rather than +22 +/-3°C) in order to be consistent with the ESCC Detail Specifications for similar part types. This also applies to Intermediate and End-point Electrical Measurements and Total Dose Radiation Testing.

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18) Para 4.5.3: the sentences regarding Total Dose Irradiation Level are deleted (they have effectively been replaced by new text to Table 1(a)).

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

20) Figure 4 is deleted (as such generalised figures do not serve any real purpose with regards to the Detail Specification). The details given in Figure 4, Notes 2, 3 & 4 are included in a new Note to Room Temperature Electrical Measurements Minority Carrier Lifetime Characteristic.

21) Table 4 Note 1: 3 is deleted as there are no such requirements in the latest ESCC Generic 5010.

22) Table 5(a) Note 1: room temperature is now specified (Tamb = +25 +/-3°C for the purposes of completeness and consistency).

23) Table 5(b) Conditions for Power Burn-in and Operating Life Tests: Forward Current Condition is amended in order to be consistent with Maximum Ratings and device characteristics. Because of this change, a new Note 1 is added Tcase shall be adjusted to attain the specified Tj.

24) Para 4.9 and subparagraphs, Table 7 (Total Dose Irradiation Testing): the paragraphs and table are re-written based on the current content and requirements of ESCC Basic Specification No. 22900 and also the device total ionisation level of 100 krad as confirmed by the manufacturer Infineon.

25) Figures 5(a), 5(b) and 6 are deleted as they do not have any meaningful purpose with regard to the required content of the specification.

26) New Appendix A added (applicable specific deviations for Infineon):
Deviations on Dimension Check, Bond Strength, Temperature Cycling, Assembly Capability Subgroup tests, Final Customer Source Inspection and Additional Documentation and Wafer Lot Acceptance Data are added at Manufacturer Infineon's 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:
5513017_draft_5c_for_dcr.docx
Modifications:
N/A
Approval signature:

Date signed:
2016-11-14