PRODUCT/PROCESS CHANGE NOTICE (PCN)

PCN #: W1905-01  DATE: 13-Jun-2019

Product Affected: Refer to attachment 2

MEANS OF DISTINGUISHING CHANGED DEVICES:
- Product Mark
- Back Mark
- Date Code
- Other

Traceability to the Fab location is provided through the 2 digit sequential lot code on the date code line of the top mark.

Date Effective: 13-Sep-2019

Contact: IDT PCN DESK

Attachment: Yes

E-mail: pcndesk@idt.com

Samples: Please contact your local sales representative for sample request.

DESCRIPTION AND PURPOSE OF CHANGE:
- Die Technology
- Wafer Fabrication Process
- Assembly Process
- Equipment
- Material
- Testing
- Manufacturing Site
- Data Sheet
- Other

This notification is to advise our customers that IDT has qualified TSMC Fab 6 as an alternate Foundry for the products listed on this notice. This is to provide additional manufacturing capacity for these products.

There is no change to the product design or process technology as the existing qualified Foundry, TSMC Fab 8.

There is also no change to the package, backend manufacturing process or the data sheet.

Refer to page 2 for the qualification report.

RELIABILITY/QUALIFICATION SUMMARY:
Based on wafer and component level qualification to date and characterization tests, there is no change to the performance or reliability of the product.

CUSTOMER ACKNOWLEDGMENT OF RECEIPT:
IDT records indicate that you require written notification of this change. Please use the acknowledgement below or E-Mail to grant approval or request additional information. If IDT does not receive acknowledgement within 30 days of this notice it will be assumed that this change is acceptable.

IDT reserves the right to ship either version manufactured after the process change effective date until the inventory on the earlier version has been depleted.

Customer: ____________________________

Name/Date: ____________________________ E-Mail Address: ____________________________

Title: ____________________________ Phone# /Fax# : ____________________________

CUSTOMER COMMENTS:

__________________________

IDT ACKNOWLEDGMENT OF RECEIPT:

RECD. BY: ____________________________ DATE: ____________________________

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Qualification Report

<table>
<thead>
<tr>
<th>Test Description</th>
<th>Standard</th>
<th>Test Conditions</th>
<th>Sample Size</th>
<th>Reject</th>
<th>Comments</th>
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<tbody>
<tr>
<td>Device Characterization</td>
<td>IDT’s datasheet condition</td>
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<td>80</td>
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<tr>
<td>ESD: Human Body Model</td>
<td>JESD22-A114 (JS-001) Classification – 1B</td>
<td>1 KV</td>
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<td>ESD: Charged Device Model</td>
<td>JESD22-C101 Classification – C1</td>
<td>500 V</td>
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<td>Latch-Up</td>
<td>JESD78</td>
<td>+/-100mA I/O and 1.5x Vcc OV stress, Class II (85°C)</td>
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<td>Early Life Failure Rate (ELFR)</td>
<td>JESD22-A108, JESD74</td>
<td>48 hrs. @ 125 °C, Vcc = 20V</td>
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<td>High Temperature Operating Life (HTOL)</td>
<td>JESD22-A108, +125°C, Vcc-max</td>
<td>1,000 hrs. @ 125 °C, Vcc =20V</td>
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<td>High Temperature Storage (HTS)</td>
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<td>150°C, 1000 hrs</td>
<td>77</td>
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PRODUCT/PROCESS CHANGE NOTICE (PCN)

ATTACHMENT 2 - PCN # : W1905-01

Affected Part Numbers

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<td>P9236A-B0NDGI</td>
<td>P9242-RBNDGI/B</td>
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