PRODUCT/PROCESS CHANGE NOTICE (PCN)

PCN #: F1712-01  DATE: 12-Jan-2018  MEANS OF DISTINGUISHING CHANGED DEVICES:

Product Affected: FCBGA-400 (RoHS5)  (80HCPS1616CHR, 80HCPS1616CHRI)

Date Effective: 12-Apr-2018

Contact: IDT PCN DESK  Attachment: Yes  No
E-mail: pcndesk@idt.com

DESCRIPTION AND PURPOSE OF CHANGE:

☐ Die Technology  This notification is to advise our customers that IDT is converting from RoHS5 to Green package materials to meet industry materials requirements.

☐ Wafer Fabrication Process

☐ Assembly Process

☐ Equipment

☐ Material

☐ Testing

☐ Manufacturing Site

☐ Data Sheet

☐ Other

There is no change to the moisture performance.

The current part will be discontinued as of the effective date of this PCN.

Attachment I details the qualification results.

RELIABILITY/QUALIFICATION SUMMARY:

Refer to qualification data shown in attachment I.

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: ___________________________  ☐ Approval for shipments prior to effective date.

Name/Date: ___________________________  E-Mail Address: ___________________________

Title: ___________________________  Phone#/Fax#: ___________________________

CUSTOMER COMMENTS:

______________________________________

______________________________________

______________________________________

______________________________________

IDT ACKNOWLEDGMENT OF RECEIPT:

RECD. BY: ___________________________  DATE: ___________________________
ATTACHMENT I - PCN #: F1712-01

PCN Type: Material Change from RoHS 5 to Green
Data Sheet Change: None
No change in moisture sensitivity level (MSL)

Detail Of Change:

This notification is to advise our customers that IDT is converting from RoHS5 to Green package materials to meet industry materials requirements.

The material set details of the current and replacement part is as shown in Table 1.

There is no change to the moisture performance.

Table 1: Assembly Material Sets for The Existing and Replacement Parts

<table>
<thead>
<tr>
<th>Assembly Location</th>
<th>Current Part (RoHS5)</th>
<th>Replacement Part (Green)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amkor Taiwan</td>
<td>63Sn37Pb</td>
<td>63Sn37Pb</td>
</tr>
<tr>
<td>ASE Taiwan</td>
<td>Sn96.5/Ag3.0/Cu0.5</td>
<td>Sn96.5/Ag3.0/Cu0.5</td>
</tr>
</tbody>
</table>

Affected Part List

<table>
<thead>
<tr>
<th>Current Part# (RoHS5)</th>
<th>Replacement Part# (Green)</th>
</tr>
</thead>
<tbody>
<tr>
<td>80HCPS1616CHR</td>
<td>80HCPS1616CHLG</td>
</tr>
<tr>
<td>80HCPS1616CHRI</td>
<td>80HCPS1616CHLGI</td>
</tr>
</tbody>
</table>
ATTACHMENT I - PCN #: F1712-01

Qualification Information and Qualification Data:

**Affected Packages:** FCBGA-400

**Assembly Material:** Shown on page 2 of this attachment.

**Qual Plan & Results:** Tests are in accordance with JEDEC47 recommended tests.

**Qualification Vehicle:** FCBGA-784

<table>
<thead>
<tr>
<th>Test Description</th>
<th>Test Method</th>
<th>Test Results (Rej / SS)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Lot 1</td>
</tr>
<tr>
<td>* Temperature Cycling (55°C to 125°C, 700 cycles)</td>
<td>JESD22-A104</td>
<td>0/25</td>
</tr>
<tr>
<td>* HAST - Unbiased (130 °C/85% RH, 96 Hrs)</td>
<td>JESD22-A118</td>
<td>0/25</td>
</tr>
<tr>
<td>High Temperature Storage Bake (150°C, 1000 Hrs)</td>
<td>JESD22-A103</td>
<td>0/25</td>
</tr>
<tr>
<td>Solder Ball Shear Test</td>
<td>JESD22-B117</td>
<td>0/5</td>
</tr>
<tr>
<td>X Ray</td>
<td>IDT Spec. MAC-3012</td>
<td>0/45</td>
</tr>
<tr>
<td>Moisture Sensitivity Level, MSL</td>
<td>J-STD-20 / MSL 4, 245 °C</td>
<td>0/25</td>
</tr>
</tbody>
</table>

*Note: Tests were subjected to Preconditioning per JESD22-A113 prior to stress test*