## PRODUCT/PROCESS CHANGE NOTICE (PCN)

<table>
<thead>
<tr>
<th>PCN #: A1402-02</th>
<th>DATE: 30-Sep-2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Affected: TQFP-32, TQFP-48, TQFP-64, TQFP-80, TQFP-128, LQFP-48, LQFP-52, LQFP-100, VFQFPN-56</td>
<td>MEANS OF DISTINGUISHING CHANGED DEVICES:</td>
</tr>
<tr>
<td>Date Effective: 30-Dec-2014</td>
<td>- Product Mark</td>
</tr>
<tr>
<td>Contact: IDT PCN DESK</td>
<td>- Lot # will have:</td>
</tr>
<tr>
<td>E-mail: <a href="mailto:pcndesk@idt.com">pcndesk@idt.com</a></td>
<td>&quot;P&quot; prefix for Amkor Philippines</td>
</tr>
<tr>
<td></td>
<td>- Back Mark</td>
</tr>
<tr>
<td></td>
<td>&quot;R&quot; prefix for ASE, Taiwan</td>
</tr>
<tr>
<td></td>
<td>- Date Code</td>
</tr>
<tr>
<td></td>
<td>- Other</td>
</tr>
<tr>
<td></td>
<td>Refer to Attachment II for the affected part numbers</td>
</tr>
<tr>
<td></td>
<td>Attachment: Yes No</td>
</tr>
<tr>
<td></td>
<td>Samples: Please contact your local sales representative for sample request.</td>
</tr>
</tbody>
</table>

### 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 is adding Amkor Philippines (ATP) and ASE Taiwan (ASEK) as alternate assembly facilities. There is no change to the moisture performance. Attachment I details the qualification data for this change and Attachment II shows the affected list of part numbers.

### 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: ____________________________

Name/Date: ____________________________ E-Mail Address: ____________________________

Title: ____________________________ Phone# /Fax#: ____________________________

**Approval for shipments prior to effective date.**

### CUSTOMER COMMENTS:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

### IDT ACKNOWLEDGMENT OF RECEIPT:

RECD. BY: ____________________________ DATE: ____________________________
ATTACHMENT I - PCN # : A1402-02

PCN Type: Manufacturing Site - Alternate Assembly Locations
Data Sheet Change: None
No change in moisture sensitivity level (MSL)

Detail Of Change:

This notification is to advise our customers that IDT is adding Amkor Philippines (ATP) and ASE Taiwan (ASEK) as alternate assembly facilities.

The material set details of the current Assembly locations is shown in the table below. The die attach and mold compound used at the alternate assembly facilities are qualified IDT materials. There is no change from the existing qualified lead frame material, lead finish, and wire for the alternate assembly sites.

IDT has devices being transferred that are currently qualified at the original assembly sites using both Cu and Au for wire bonds. There will be no change in wire type as a result of this PCN. Customers ordering and receiving Au wire will continue to receive Au wire. Customers ordering and receiving Cu wire will continue to receive Cu wire.

There is no change to the moisture performance.

Table 1: Material Sets for The Existing and Alternate Assembly Sites

<table>
<thead>
<tr>
<th>Package</th>
<th>Existing Assembly</th>
<th>Alternate Assembly</th>
</tr>
</thead>
<tbody>
<tr>
<td>TQFP-32</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>TQFP-48</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>TQFP-64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TQFP-80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TQFP-128</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>LQFP-48</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>LQFP-52</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LQFP-100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VFQFPN-56</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Note: X denote qualified assembly site
### ATTACHMENT I - PCN # : A1402-02

#### Table 2: Assembly Material Sets for The Existing and Alternate Assembly Sites

<table>
<thead>
<tr>
<th>Material Set / Assembly</th>
<th>Existing Assembly</th>
<th>Alternate Assembly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Die Attach</td>
<td>Ablestik 3230</td>
<td>Ablestik 3230</td>
</tr>
<tr>
<td>Wire</td>
<td>Au Wire</td>
<td>Au Wire</td>
</tr>
<tr>
<td>Mold Compound</td>
<td>G700L</td>
<td>G700L</td>
</tr>
<tr>
<td>TQFP-32,TQFP-48,TQFP-64,TQFP-80,LQFP-48,LQFP-52,LQFP-100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Die Attach</td>
<td>EN4900F</td>
<td>Ablestik 3230</td>
</tr>
<tr>
<td>Wire</td>
<td>Au Wire</td>
<td>Au Wire</td>
</tr>
<tr>
<td>Mold Compound</td>
<td>CEL9200HF</td>
<td>G700Y</td>
</tr>
<tr>
<td>TQFP-128</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Die Attach</td>
<td>Ablestik 8290</td>
<td></td>
</tr>
<tr>
<td>Wire</td>
<td>Au Wire</td>
<td>Au Wire, Cu Wire</td>
</tr>
<tr>
<td>Mold Compound</td>
<td>G700</td>
<td>G631H</td>
</tr>
<tr>
<td>VFQFPN-56</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Die Attach</td>
<td></td>
<td>EN4900</td>
</tr>
</tbody>
</table>
ATTACHMENT I - PCN # : A1402-02

Qualification Information and Qualification Data:

**Affected Packages:**
TQFP-32, TQFP-48, TQFP-64, TQFP-80, LQFP-48, LQFP-52, LQFP-100, TQFP-128

**Assembly Material:**
The affected package type is using ATP standard materials shown on page 1 of this attachment.

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

**Qualification Vehicle:**
TQFP-128, TQFP-64

<table>
<thead>
<tr>
<th>Test Description</th>
<th>Test Method</th>
<th>Qual# / Wire Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>* HAST - biased (130°C/85% RH, 96 Hrs)</td>
<td>JESD22-A110</td>
<td>P13-07-08, P13-11-05, P14-02-01 / Au wire</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0 / 89†</td>
</tr>
<tr>
<td>* Temperature Cycling (-55°C to 125°C, 700 cycles)</td>
<td>JESD22-A104</td>
<td>0 / 90</td>
</tr>
<tr>
<td>High Temperature Storage Test (150°C, 1000 hours)</td>
<td>JESD22-A103</td>
<td>0 / 89†</td>
</tr>
<tr>
<td>Moisture Sensitivity Classification (Level 3, 260°C)</td>
<td>J-STD-020</td>
<td>0 / 50</td>
</tr>
</tbody>
</table>

**Note:**
* Test requires moisture pre-conditioning sequence per JESD22-A113 prior to stress test
†1 unit mechanical reject
ATTACHMENT I - PCN # : A1402-02

Qualification Information and Qualification Data:

Affected Packages: VFQFPN-56

Assembly Material: The affected package type is using ASEK standard materials shown on page 1 of this attachment.

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

Qualification Vehicle: VFQFPN-56

<table>
<thead>
<tr>
<th>Test Description</th>
<th>Test Method</th>
<th>Qual# / Wire Type</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>P12-11-08 / Au wire</td>
<td>P12-11-08 / Cu wire</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rej / SS</td>
<td>Rej / SS</td>
</tr>
<tr>
<td>* HAST - biased (130 °C/85% RH, 168 Hrs)</td>
<td>JESD22-A110</td>
<td>0 / 90</td>
<td>0 / 90</td>
</tr>
<tr>
<td>* Temperature Cycling (-55°C to 125°C, 1000 cycles)</td>
<td>JESD22-A104</td>
<td>0 / 90</td>
<td>0 / 90</td>
</tr>
<tr>
<td>High Temperature Storage Test (150°C, 1000 hours)</td>
<td>JESD22-A103</td>
<td>0 / 90</td>
<td>0 / 90</td>
</tr>
<tr>
<td>Moisture Sensitivity Classification (Level 3, 260°C)</td>
<td>J-STD-020</td>
<td>0 / 50</td>
<td>0 / 50</td>
</tr>
</tbody>
</table>

Note:
* Test requires moisture pre-conditioning sequence per JESD22-A113 prior to stress test
## ATTACHMENT II - PCN # : A1402-02

**Affected Part Numbers**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Part Number</th>
<th>Part Number</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>5V9885TPFGI</td>
<td>83210AYLFT</td>
<td>8430S803BYILF</td>
<td>853S111BYILFT</td>
</tr>
<tr>
<td>5V9885TPFGI8</td>
<td>8344AY-01LF</td>
<td>8430S803BYILFT</td>
<td>853S111BYILFT</td>
</tr>
<tr>
<td>5V9888TPFGI</td>
<td>8344AY-01LFT</td>
<td>843207BY-350LF</td>
<td>8701CYILF</td>
</tr>
<tr>
<td>5V9888TPFGI8</td>
<td>8344AYI-01LF</td>
<td>843207BY-350LFT</td>
<td>8701CYILFT</td>
</tr>
<tr>
<td>71321LA55PPGI</td>
<td>8344AYI-01LFT</td>
<td>843506FYLF-ECI</td>
<td>8702BYLF</td>
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<td>844008BYI-15LFT</td>
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<td>74SSTVF16859NLG/W</td>
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<td>844008BYI-15LFT</td>
<td>872S06AYLF</td>
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<tr>
<td>82V2082PFG8-ECI</td>
<td>83918AYILF</td>
<td>849S625BYILF</td>
<td>872S06AYLF</td>
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<td>82V3255EDG</td>
<td>83918AYILFT</td>
<td>849S625BYILFT</td>
<td>873996AYLF</td>
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<tr>
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<td>83940DYILF-MER</td>
<td>851010AYILF</td>
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<tr>
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<td>82V3280EQG8</td>
<td>840S05AYILFT</td>
<td>851021AYLFT</td>
<td>874328B5YI-01LFT</td>
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<tr>
<td>82V3285EQG</td>
<td>840S07BYILF</td>
<td>851021AYLFT</td>
<td>876089AYILFT-IB0</td>
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<tr>
<td>82V3285EQG8</td>
<td>840S07BYILFT</td>
<td>8516FYILF</td>
<td>87973DYI-147LF</td>
</tr>
<tr>
<td>82V3358EDG</td>
<td>841N151BY-01LF</td>
<td>8516FYILFT</td>
<td>87973DYI-147LF</td>
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<td>82V3358EDG8</td>
<td>841N151BY-01LFT</td>
<td>8520DYLFT</td>
<td>879893AYILF</td>
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<tr>
<td>82V3380AEQG</td>
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<td>8520DYLFT</td>
<td>879893AYILFT</td>
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<td>82V3391BEQG</td>
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<td>853S024AYLF</td>
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<td>853S024AYLF</td>
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</table>