



Integrated Device Technology, Inc.  
6024 Silver Creek Valley Road, San Jose, CA - 95138

## PRODUCT/PROCESS CHANGE NOTICE (PCN)

<b>PCN #:</b> <b>A1303-05</b> <b>Product Affected:</b> 3.0mm x 3.0mm VFQFPN-20 4.0mm x 4.0mm VFQFPN-24 4.0mm x 4.0mm VFQFPN-28 (Refer to Attachment 2)	<b>DATE:</b> <b>June 10, 2013</b>	<b>MEANS OF DISTINGUISHING CHANGED DEVICES:</b> <input type="checkbox"/> Product Mark <input type="checkbox"/> Back Mark <input type="checkbox"/> Date Code <input checked="" type="checkbox"/> Other <div style="margin-left: 20px;">           Assembly lot marked on the device provides traceability to the material used         </div>
<b>Date Effective:</b> <b>September 10, 2013</b>		

<b>Contact:</b> Bimla Paul <b>Title:</b> Product Quality Assurance <b>Phone #:</b> (408) 574-6419 <b>E-mail:</b> <a href="mailto:Bimla.Paul@idt.com">Bimla.Paul@idt.com</a>	<b>Attachment:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  <b>Samples:</b> Please contact your local sales representative for sample request & availability.
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**DESCRIPTION AND PURPOSE OF CHANGE:**

<input type="checkbox"/> Die Technology <input type="checkbox"/> Wafer Fabrication Process <input checked="" type="checkbox"/> Assembly Process <input type="checkbox"/> Equipment <input checked="" type="checkbox"/> Material <input type="checkbox"/> Testing <input type="checkbox"/> Manufacturing Site <input type="checkbox"/> Data Sheet <input type="checkbox"/> Other	<p>This notification is to advise our customers that IDT has successfully completed the qualification of stack die assembly with interposer. An interposer will be added in between the top die and the bottom die to improve assembly yield.</p> <p>There is no change in the moisture sensitivity level and product performance.</p> <p>Shipments to customers may contain the existing products prior to the change and after the change during the transition period until the existing inventories have been depleted.</p> <p style="text-align: center;">Attachment 1 - Details of change and qualification data. Attachment 2 - List of the affected parts.</p>
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**RELIABILITY/QUALIFICATION SUMMARY:**

There is no expected change to the product quality or reliability performance.

**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: _____	<input type="checkbox"/> <i>Approval for shipments prior to effective date.</i>
Name/Date: _____	E-Mail Address: _____
Title: _____	Phone# /Fax# : _____
<b>CUSTOMER COMMENTS:</b> _____	

**IDT ACKNOWLEDGMENT OF RECEIPT:**

RECD. BY: \_\_\_\_\_ DATE: \_\_\_\_\_



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### ATTACHMENT 1 - PCN # : A1303-05

**PCN Type:** Assembly Process and Material Change

**Data Sheet Change:** No

**Detail Of Change:**

This notification is to advise our customers that IDT has successfully completed the qualification of stack die assembly with interposer. An interposer will be added in between the top die and the bottom die to improve assembly yield.

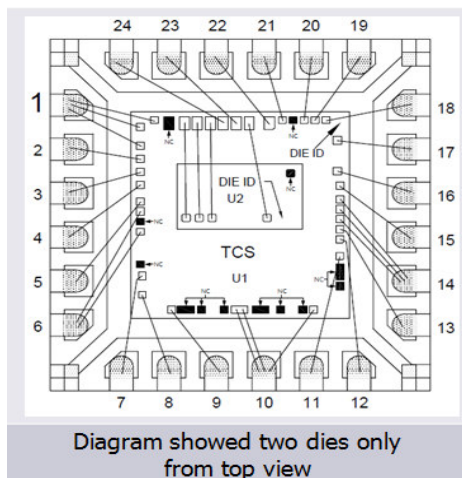
The die attach material for the top die will change to NEX-130SB-25 and for the bottom die to 8200T.

There is no change in the moisture sensitivity level and product performance.

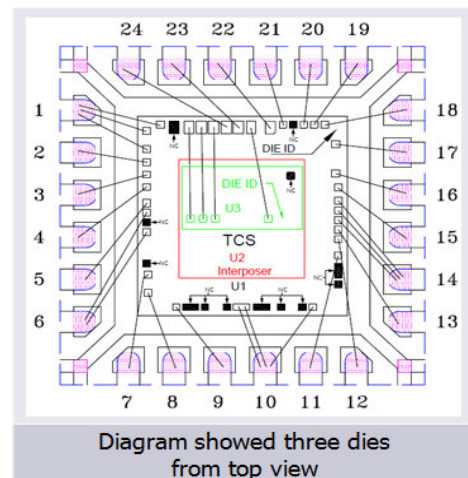
Table 1: Summary of PCN Changes

Description	Changes	
	From	To
Package Technology	Without Interposer	With Interposer (inserted between top and bottom die)
Die Attach (Top Die)	NEX130CT	NEX-130SB-25
Die Attach (Bottom Die)	8600	8200T

Figure 1: Illustration of Interposer Inserted between top die and bottom die (Top View)



Old: Without Interposer



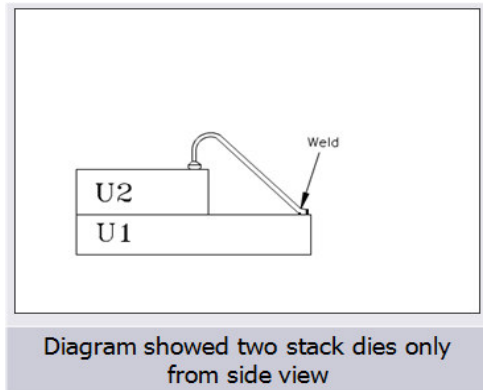
New: With Interposer



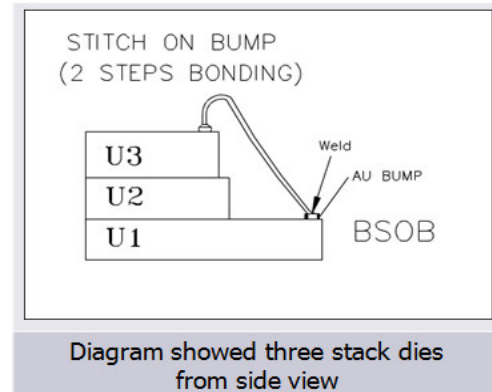
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Figure 2: Illustration of Interposer Inserted between top die and bottom die (Side View)



Old: Without Interposer



New: With Interposer

Customers may expect to receive shipments of changed products no sooner than 90 days from the date of this PCN notification. Shipments to customers may contain the existing products prior to the change and after the change during the transition period until the existing inventories have been depleted.

We request you to acknowledge receipt of this notification within 30 days of the date of this PCN notification. If you require samples to conduct an evaluation, please make your sample request within 30 days as samples are not built ahead of the change for all device options. You may contact your local sales representative to acknowledge this PCN and request samples.



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### ATTACHMENT 1 - PCN # : A1303-05

#### Qualification Test Plan and Results:

**Test Vehicle:** 4.0mm x 4.0mm MLF-28 (3 lots)

Test Description	Test Method	Test Results (Rej / SS)		
<sup>1</sup> HAST - unbiased (130 °C/85% RH, 100 Hrs)	JESD22-A118	0 / 24 <sup>2</sup>	0 / 25	0 / 25
<sup>1</sup> Temperature Cycling (-55°C to 125°C, 700 cycles)	JESD22-A104	0 / 76 <sup>2</sup>	0 / 77	0 / 75 <sup>3</sup>
High Temperature Storage Test (150°C, 1000 hours)	JESD22-A103	0 / 77	0 / 77	0 / 77
External Visual Inspection	MIL-STD-883, M 2009	0 / 25	0 / 25	0 / 25
Internal Visual Inspection	MIL-STD-883, M 2010	0 / 5	0 / 5	0 / 5
X-ray Examination	IDT Spec, MAC- 3012	0 / 45	0 / 45	0 / 45

Notes: 1. Tests were subjected to Preconditioning per JESD22-A113 @ MSL 1, 260 °C

2. One unit missing during qualification

3. Two units untestable due to mechanical rejects, not related to this qualification.



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**PRODUCT/PROCESS CHANGE NOTICE (PCN)**

**ATTACHMENT 2 - PCN # : A1303-05**

**Affected Part Numbers**

Part Number	Part Number	Part Number	Part Number
5P49EE502-004NDGI	5V49EE501NLGI8	5V49EE503NLGI	5V49EE703-038NDGI8
5P49EE502-004NDGI8	5V49EE502NLGI	5V49EE503NLGI8	5V49EE703-051NDGI
5P49EE502-011NDGI	5V49EE502NLGI8	5V49EE504-045NLGI	5V49EE703-051NDGI8
5P49EE502-011NDGI8	5V49EE503-002NLGI	5V49EE504-045NLGI8	5V49EE703-071NDGI
5P49EE502NDGI	5V49EE503-002NLGI8	5V49EE504-072NLGI	5V49EE703-071NDGI8
5P49EE502NDGI8	5V49EE503-023NLGI	5V49EE504-072NLGI8	5V49EE703-082NDGI
5V19EE403-003NLGI	5V49EE503-023NLGI8	5V49EE504NLGI	5V49EE703-082NDGI8
5V19EE403-003NLGI8	5V49EE503-027NLGI	5V49EE504NLGI8	5V49EE703-083NDGI
5V19EE403NLGI	5V49EE503-027NLGI8	5V49EE701-029NDGI	5V49EE703-083NDGI8
5V19EE403NLGI8	5V49EE503-043NLGI	5V49EE701-029NDGI8	5V49EE703-084NDGI
5V19EE404NLGI	5V49EE503-043NLGI8	5V49EE701-066NDGI	5V49EE703-084NDGI8
5V19EE404NLGI8	5V49EE503-046NLGI	5V49EE701-066NDGI8	5V49EE703-086NDGI
5V19EE603NDGI	5V49EE503-046NLGI8	5V49EE701-075NDGI	5V49EE703-086NDGI8
5V19EE603NDGI8	5V49EE503-055NLGI	5V49EE701-075NDGI8	5V49EE703NDGI
5V19EE604NDGI	5V49EE503-055NLGI8	5V49EE701NDGI	5V49EE703NDGI8
5V19EE604NDGI8	5V49EE503-068NLGI	5V49EE701NDGI8	5V49EE704-025NDGI
5V49EE501-063NLGI	5V49EE503-068NLGI8	5V49EE702-037NDGI	5V49EE704-025NDGI8
5V49EE501-063NLGI8	5V49EE503-073NLGI	5V49EE702-037NDGI8	5V49EE704-060NDGI
5V49EE501-089NLG	5V49EE503-073NLGI8	5V49EE702NDGI	5V49EE704-060NDGI8
5V49EE501-089NLG8	5V49EE503-077NLGI	5V49EE702NDGI8	5V49EE704NDGI
5V49EE501-094NLGI	5V49EE503-077NLGI8	5V49EE703-030NDGI	5V49EE704NDGI8
5V49EE501-094NLGI8	5V49EE503-085NLGI	5V49EE703-030NDGI8	
5V49EE501NLGI	5V49EE503-085NLGI8	5V49EE703-038NDGI	