



Integrated Device Technology, Inc.  
6024 Silver Creek Valley Road  
San Jose, CA 96138

## PRODUCT/PROCESS CHANGE NOTICE (PCN)

<b>PCN #:</b> <b>A0910-01</b> <b>DATE:</b> <b>November 6, 2009</b> <b>Product Affected:</b> VFQFPN-20, 32, 40, 48, 56 (Standard & Green)  <b>Date Effective:</b> <b>February 6, 2010</b>	<b>MEANS OF DISTINGUISHING CHANGED DEVICES:</b> <input type="checkbox"/> Product Mark <input checked="" type="checkbox"/> Back Mark      Lot # will have a "Y" suffix <input type="checkbox"/> Date Code <input type="checkbox"/> Other
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<b>Contact:</b> Bimla Paul <b>Title:</b> Product Quality Assurance <b>Phone #:</b> (408) 574-6419 <b>Fax #:</b> (408) 284-8362 <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> Contact your local IDT sales representative for sample requests.
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**DESCRIPTION AND PURPOSE OF CHANGE:**

<input type="checkbox"/> Die Technology <input type="checkbox"/> Wafer Fabrication Process <input type="checkbox"/> Assembly Process <input type="checkbox"/> Equipment <input checked="" type="checkbox"/> Material <input type="checkbox"/> Testing <input checked="" type="checkbox"/> Manufacturing Site <input type="checkbox"/> Data Sheet <input type="checkbox"/> Other	<p>This notification is to advise our customers that IDT is adding Carsem, Malaysia and UTL, Thailand as the alternate assembly facilities for Copper Bond Wire process on VFQFPN-20, VFQFPN-32, VFQFPN-40, VFQFPN-48 and VFQFPN-56, both Standard and Green parts.</p> <p>There is no change in the moisture sensitivity performance.</p> <p>Please refer to following attachments for additional information. Attachment 1 outlines the qualification plans and results. Attachment 2 shows the affected part numbers.</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# : _____

**CUSTOMER COMMENTS:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**IDT ACKNOWLEDGMENT OF RECEIPT:**

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



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### ATTACHMENT 1 - PCN # : A0910-01

**PCN Type:** Manufacturing Site & Material - Alternate Assembly Location & Copper Bond Wire

**Data Sheet Change:** None

**Detail Of Change:**

This notification is to advise our customers that IDT is adding Carsem, Malaysia and UTL, Thailand as the alternate assembly facilities for Copper Bond Wire process on VFQFPN-20, VFQFPN-32, VFQFPN-40, VFQFPN-48 and VFQFPN-56, both Standard and Green parts.

IDT has already successfully qualified Copper wire bond process and has been shipping products assembled at PT Unisem, Indonesia and Carsem, Malaysia on VFQFPN-64 and VFQFPN-72 package types.

Copper bond wire process is presently used by selective semiconductor suppliers due to the following key advantages:

- A. Better electrical performance- higher current handling capability - 18% improvement in resistance for 1 mil bond wire.
- B. Better high temperature bake performance. Minimal intermettalic compound build up.
- C. Higher Ball shear and wire pull test result- smaller bond pad real estate is now possible.
- D. Stiffer Wire- minimize wire swaying , longer wires than gold is now possible.

Customers may expect to receive shipments with Cu wire process no sooner than 90 days from the date of this notification, November 6, 2009. Product assembled with Au and Cu wire will be shipped during the transition period or until the Au wire inventory has been depleted. Please note that product assembled with Au and Cu wire will not be mixed in one tray stack, or tape and reel.

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 evaluations, 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 # : A0910-01**

**Assembly Material :** There is no change in the mold compound and die attach materials. The material sets used in assembly is in compliance with RoHS 5 (standard products) and RoHS 6 (green products) requirement. There is no change in the moisture sensitivity performance.

**Sample Availability :** Samples are not built ahead of the change for all device types and may not be available for all affected device types.

Please contact your local IDT sales representative for your sample request and availability.

**Qualification Test Plans and Results :**

**1. Copper Bond Wire Qual Results**

Qual Vehicle: i) Carsem, Malaysia, VFQFPN-72 (3 lots)

Test Description	Test Method	Test Results (SS / Rej)		
		VFQFPN-72 (Lot 1)	VFQFPN-72 (Lot 2)	VFQFPN-72 (Lot 3)
* High Accelerated Stress Test (Biased, 130 °C/85% RH, 100 Hrs)	JESD22-A110	44/0	44/0	45/0
* Temperature Cycle / Condition B (-55 °C to +125 °C, 1000 Cyc)	JESD22-A104	45/0	45/0	43/0
High Temp. Storage (150 °C, 1000 Hrs)	JESD22-A103	77/0	77/0	77/0
Ball Shear Test	JESD22-B116	5/0	5/0	5/0
Bond Pull Test	IDT Spec, MAC-3010	5/0	5/0	5/0
X-ray Examination	IDT Spec, MAC-3012	45/0	45/0	45/0

Note:

\* Test requires moisture pre-conditioning sequence per JESD22-A113 and will use the existing moisture sensitivity level that has been qualified for this material set.



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## PRODUCT/PROCESS CHANGE NOTICE (PCN)

### ATTACHMENT 1 - PCN # : A0910-01

Qual Vehicle: ii) UTL, Thailand, VFQFPN-32 (2 lots)

Test Description	Test Method	Test Results (SS / Rej)	
		VFQFPN-32 (Lot 1)	VFQFPN-32 (Lot 2)
* High Accelerated Stress Test (Biased, 130 °C/85% RH, 100 Hrs)	JESD22-A110	-	45/0
* Temperature Cycle / Condition B (-55 °C to +125 °C, 1000 Cyc)	JESD22-A104	77/0	-
High Temp. Storage (150 °C, 1000 Hrs)	JESD22-A103	76/0	-
Ball Shear Test	JESD22-B116	5/0	5/0
Bond Pull Test	IDT Spec, MAC-3010	5/0	5/0

Note:

\* Test requires moisture pre-conditioning sequence per JESD22-A113 and will use the existing moisture sensitivity level that has been qualified for this material set.

## 2. Product Electrical Characterization

Product electrical characterization has been successfully completed on representative product families and copper wire performance was comparable to gold wire performance.



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

**ATTACHMENT 2 - PCN # : A0910-01**

**Affected Part Number**

Part Number	Part Number	Part Number	Part Number
952909AKLF	9LRS3130AKLF	9LRS4116AKLF	9LVRS395BKLF
952909AKLFT	9LRS3130AKLFT	9LRS4116AKLFT	9LVRS395BKLFT
952909BKLF	9LRS3180AKLF	9LRS4118AKLF	9LVRS395CKLF
952909BKLFT	9LRS3180AKLFT	9LRS4118AKLFT	9LVRS395CKLFT
952909CKLF	9LRS3187AKLF	9LRS4123AKLF	9LVRS395ENGKLF
952909CKLFT	9LRS3187AKLFT	9LRS4123AKLFT	9LVRS395ENGKLF
954226AKLF	9LRS3187BKILF	9LRS4133AKLF	9LVRS396AKLF
954226AKLFT	9LRS3187BKILFT	9LRS4133AKLFT	9LVRS396AKLFT
9ERS3125BKILF	9LRS3187BKLF	9LRS4153AKLF	9LVRS396BKLF
9ERS3125BKILFT	9LRS3187BKLFT	9LRS4153AKLFT	9LVRS396BKLFT
9ERS3125BKLF	9LRS3191AKLF	9LRS4157BKLF	9LVS3162AKLF
9ERS3125BKLFT	9LRS3191AKLFT	9LRS4157BKLFT	9LVS3162AKLFT
9LP505-2HKLF	9LRS3191BKLF	9LRS4180AKLF	9LVS3185AKLF
9LP505-2HKLFT	9LRS3191BKLFT	9LRS4180AKLFT	9LVS3185AKLFT
9LPR342AKLF	9LRS3197AKLF	9LRS4180BKLF	9LVS3187AKLF
9LPR342AKLFT	9LRS3197AKLFT	9LRS4180BKLFT	9LVS3187AKLFT
9LPR342BKLF	9LRS3197BKLF	9LRS4182AKLF	9LVS3187BKLF
9LPR342BKLFT	9LRS3197BKLFT	9LRS4182AKLFT	9LVS3187BKLFT
9LPR502HKLF	9LRS3199AKLF	9LRS4183AKLF	9LVS3191AKLF
9LPR502HKLFT	9LRS3199AKLFT	9LRS4183AKLFT	9LVS3191AKLFT
9LPRS339AKLF	9LRS4103AKLF	9LRS4188AKLF	9LVS3191BKLF
9LPRS339AKLFT	9LRS4103AKLFT	9LRS4188AKLFT	9LVS3191BKLFT
9LPRS502PKLF	9LRS4103BKLF	9LRS4200AKLF	9LVS3197AKLF
9LPRS502PKLFT	9LRS4103BKLFT	9LRS4200AKLFT	9LVS3197AKLFT
9LRS3102AKLF	9LRS4105BKLF	9LRS4205AKLF	9LVS3197BKLF
9LRS3102AKLFT	9LRS4105BKLFT	9LRS4205AKLFT	9LVS3197BKLFT
9LRS3103AKLF	9LRS4107AKLF	9LVRS392AKLF	9LVS3198AKLF
9LRS3103AKLFT	9LRS4107AKLFT	9LVRS392AKLFT	9LVS3198AKLFT
9LRS3105AKLF	9LRS4110BKLF	9LVRS393AKLF	9LVS3199AKLF
9LRS3105AKLFT	9LRS4110BKLFT	9LVRS393AKLFT	9LVS3199AKLFT
9LRS3106AKLF	9LRS4111BKLF	9LVRS393BKLF	CV180BNLG
9LRS3106AKLFT	9LRS4111BKLFT	9LVRS393BKLFT	CV180BNLG8
9LRS3107AKLF	9LRS4112BKLF	9LVRS393CKLF	
9LRS3107AKLFT	9LRS4112BKLFT	9LVRS393CKLFT	
9LRS3113BKLF	9LRS4113AKLF	9LVRS394AKLF	
9LRS3113BKLFT	9LRS4113AKLFT	9LVRS394AKLFT	
9LRS3120AKLF	9LRS4113BKLF	9LVRS394BKLF	
9LRS3120AKLFT	9LRS4113BKLFT	9LVRS394BKLFT	
9LRS3125BKILF	9LRS4114AKLF	9LVRS394CKLF	
9LRS3125BKILFT	9LRS4114AKLFT	9LVRS394CKLFT	
9LRS3125BKLF	9LRS4115AKLF	9LVRS395AKLF	
9LRS3125BKLFT	9LRS4115AKLFT	9LVRS395AKLFT	