



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

PRODUCT/PROCESS CHANGE NOTICE (PCN)

PCN #: **A1205-02** Date: July 27, 2012
Product Affected: 3.2mm x 5.0mm VFQFPN-4
2.5mm x 2.0mm VFQFPN-4
(Refer to Attachment 2 for affected part#)
Date Effective: October 27, 2012

MEANS OF DISTINGUISHING CHANGED DEVICES:

- ☒ Product Mark Lot # will have "R" prefix
☐ Back Mark
☐ Date Code
☐ Other

Contact: Mary Vesey
Title: Director, Product Assurance Attachment: ☒ Yes ☐ No
Phone #: (408) 284-4565
Fax #: (408) 284-1450 Samples: Samples are available now.
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DESCRIPTION AND PURPOSE OF CHANGE:

- ☐ Die Technology
☐ Wafer Fabrication Process
☐ Assembly Process
☐ Equipment
☐ Material
☐ Testing
☒ Manufacturing Site
☐ Data Sheet
☐ Other
- This change is to provide for additional capacity for Assembly and Test at ASE Taiwan (ASEK) on the selective products of VFQFPN-4 packages. Presently, ASEK is a qualified IDT Subcontractor.
- MSL rating will change from MSL 3 to MSL 1.
- Refer to Attachment 1 for the qualification summary and material set details. Attachment 2 is the list of affected products.

RELIABILITY/QUALIFICATION SUMMARY:

Qualification has passed. Pls note that the MSL rating will change from MSL3 to MSL1.

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: _____



PRODUCT/PROCESS CHANGE NOTICE (PCN)

ATTACHMENT 1 - PCN # : A1205-02

PCN Type: Alternate Assembly & Test Location

Data Sheet Change: N/A. MSL Rating will change from MSL 3 to MSL 1.

Detail Of Change:

This change is to provide for additional capacity for Assembly and Test at ASE Taiwan (ASEK) on the selective products of VFQFPN-4 packages that are currently assembled and tested in Unisem. Presently, ASEK is a qualified IDT Subcontractor.

This change will allow IDT the flexibility to ship from either facility and will provide the increased capacity, flexibility and shorter lead time to meet market demand.

The material set details of the current Assembly location of these packages is shown in the tables below. The die attach and mold compound used at ASEK are qualified IDT materials. There is no change from the existing qualified lead frame material, lead finish, and wire for this alternate assembly site as shown in Table 1.

Table 1: Qualified Material Sets, by Assembly Subcontractor

Description	Existing	Add
Assembly Location	Unisem, USA	ASEK - ASE, Taiwan
Assembly Material Set	Die Attach: 8006 series	FH900 series
	Wire: Au wire 0.8 mil	Au wire 0.8 mil
	Mold Compound: G770 series	G631 series
	Lead Frame: Copper Alloy	Copper Alloy
	Plating: Matte 100% Sn (Green)	Matte 100% Sn (Green)

There is also no change in the Test processing flows. Testers, load boards and test programs are compatible at both qualified facilities. IDT has completed the electrical test correlation and based on the test results we do not anticipate any impact on device performance. The testing is fully compatible and transferrable between the test facilities with no change to the test coverage.



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ATTACHMENT 1 - PCN # : A1205-02

Qualification Information and Qualification Data:

Part I - Assembly Qual Results

Affected Packages: 3.2mm x 5.0mm VFQFPN-4 & 2.5mm x 2.0mm VFQFPN-4

Assembly Material: The affected package types are using ASEK standard materials shown on page 1 of this attachment. Qualification testing was completed on the worse case package.

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

Qualification Vehicle: 3.2mm x 5.0mm VFQFPN-4

Test Description	Test Method	Test Results (Rej / SS)		
		Lot 1	Lot 2	Lot 3
¹ HAST - unbiased (130 °C/85% RH, 96 Hrs)	JESD22-A110	0 / 45	0 / 45	0 / 45
¹ Temperature Cycling (-55°C to 125°C, 700 cycles)	JESD22-A104	0 / 45	0 / 45	0 / 45
¹ Temperature Humidity Bias (85 °C/85% RH, 1000 Hrs)	JESD22-A101	0 / 45	0 / 45	0 / 45
High Temperature Storage Test (150°C, 1000 hours)	JESD22-A103	0 / 77	0 / 77	0 / 77
Moisture Sensitivity Classification (MSL 1, 260 °C)	J-STD-020	0 / 25	0 / 25	0 / 25

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

Test Description	Test Method	Test Results (Rej / SS)		
		Lot 1	Lot 2	Lot 3
Physical Dimensions	JESD22-B100	0 / 30	0 / 30	0 / 30
External Visual Inspection	JESD22-B101	0 / 25	0 / 25	0 / 25
Solderability Test	JESD22-B102	0 / 5	0 / 5	0 / 5
X-ray Examination	MIL-STD-883, M 2015	0 / 45	0 / 45	0 / 45



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Qualification Vehicle: 2.5mm x 2.0mm VFQFPN-4

Test Description	Test Method	Test Results (Rej / SS)		
		Lot 1	Lot 2	Lot 3
¹ HAST - unbiased (130 °C/85% RH, 96 Hrs)	JESD22-A110	0 / 25	0 / 25	0 / 25
¹ Temperature Cycling (-55°C to 125°C, 700 cycles)	JESD22-A104	0 / 45	0 / 45	0 / 45
High Temperature Storage Test (150°C, 1000 hours)	JESD22-A103	0 / 25	0 / 25	0 / 25
Moisture Sensitivity Classification (MSL 1, 260 °C)	J-STD-020	0 / 25	0 / 25	0 / 25

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

Test Description	Test Method	Test Results (Rej / SS)		
		Lot 1	Lot 2	Lot 3
Physical Dimensions	JESD22-B100	0 / 30	0 / 30	0 / 30
External Visual Inspection	JESD22-B101	0 / 25	0 / 25	0 / 25
Solderability Test	JESD22-B102	0 / 5	0 / 5	0 / 5
X-ray Examination	MIL-STD-883, M 2015	0 / 45	0 / 45	0 / 45



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ATTACHMENT 1 - PCN # : A1205-02

Qualification Information and Qualification Data:

Part II - Electrical Test Correlation Results

Vehicle: 3TN11G24.0000NSG4 (300 PPM spec)
Sample size: 500 electrically good units and 20 reject units

Description	Unisem, USA (Existing Facility)	ASEK - ASE, Taiwan (Alternate Facility)
Tester Platform	Teradyne J750	Teradyne J750
Loadboard	PCB608_868_00	J750-M8202-NSG4-U-37-01A
Test Program	IndiumFT16R9.xls	IndiumFT16R9.xls
Test Site	Dual site	8-site
Test Temperature	75°C and 30°C	75°C and ambient
Test Correlation Results	100%	100%
Number of Good Units Correlated @ 75°C and 30°C	500 pcs	500 pcs
500 units Bin 1 handler run (good units)	Passed	Passed
Number of Reject Units Correlated @ 30°C	20 pcs	20 pcs
20 units rejects handler run	Passed	Passed
500 units Bin 1 datalog correlation (good units)	Passed	Passed
20 units rejects datalog correlation	Passed	Passed

Vehicle: 3TN11G24.0000NVG4 (300 PPM spec)
Sample size: 500 electrically good units and 40 reject units

Description	Unisem, USA (Existing Facility)	ASEK - ASE, Taiwan (Alternate Facility)
Tester Platform	Teradyne J750	Teradyne J750
Loadboard	M8202-P24 REV.B	M8202-P24 REV.B
Test Program	IndiumFT16R9.xls	IndiumFT16R9.xls
Test Site	Single site	3 sites
Test Temperature	Ambient	Ambient
Test Correlation Results	100%	100%
Number of Good Units Correlated @ ambient	500 pcs	500 pcs
500 units Bin 1 handler run (good units)	Passed	Passed
Number of Reject Units Correlated @ ambient	40 pcs	40 pcs
40 units rejects handler run	Passed	Passed
500 units Bin 1 datalog correlation (good units)	Passed	Passed
40 units rejects datalog correlation	Passed	Passed



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PRODUCT/PROCESS CHANGE NOTICE (PCN)

ATTACHMENT 2 - PCN # : A1205-02

Affected Part Number

Part Number	Part Number	Part Number	Part Number
8102-22.57VPCNSGT	8102-25VPCNVG	8102-6VPCNSG	8202-8VPCNSG
8102-22.57VPCNVGM	8102-40VPCNSG	8202-12VPCNVG	8203-24VPCNSGIT
8102-22.57VPCNVGMT	8102-48VPCNVGT	8202-13VPCNSG	8203-8VPCNVGIT
8102-24.576VPCNSG	8102-50VPCNSGM	8202-20VPCNSG	
8102-24VPCNVG	8102-50VPCNVG	8202-25VPCNVG	
8102-25VPCNSG	8102-50VPCNVGT	8202-80VPCNSG	