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

PRODUCT/PROCESS CHANGE NOTICE (PCN)

PCN #: **W1101-02R3** DATE **April 8, 2014**
Product Affected: Refer Attachment II

Date Effective: **September 13, 2012**

MEANS OF DISTINGUISHING CHANGED DEVICES:
- ■ Product Mark Assembly lot# and Date Code
- ☐ Back Mark
- ☐ Date Code
- ☐ Other

Contact: IDT PCN DESK
E-mail: pcndesk@idt.com

Attachment: ■ Yes ☐ No
Samples: Available upon request

DESCRIPTION AND PURPOSE OF CHANGE:

- ☐ Die Technology
- ☐ Wafer Fabrication Process
- ☐ Assembly Process
- ☐ Equipment
- ☐ Material
- ☐ Testing
- ■ Manufacturing Site
- ☐ Data Sheet
- ☐ Other

Revision 3: This revised notification is to change the new orderable part numbers for selective devices and to add notes on datasheet change. Refer to Table 1 for the specific changes and Table 2 for the complete updated list of old part number versus new part number and the added notes.

This is to notify our customers that IDT has successfully transferred the wafer fabrication from IDT Hillsboro, Oregon (Fab 4) to Taiwan Semiconductor Manufacturing Corporation (TSMC).

There is no expected change to the data sheet, package or backend manufacturing process.

IDT Hillsboro, Oregon (Fab 4) is no longer in production and all future wafer fabrication will be at TSMC Fab.

Attachment I details the qualification data for this change
Attachment II details the updated affected part number list.

RELIABILITY/QUALIFICATION SUMMARY:

Based on wafer and component level qualification and characterization tests, there is no change to the performance or reliability of the product.

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: _____

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ATTACHMENT I - PCN # : W1101-02R3

PCN Type: Wafer Fab Manufacturing Site Change - IDT Fab 4 to TSMC

Data Sheet Change: Yes

Detail Of Change:

Revision 3: This revised notification is to change the new orderable part numbers for selective devices and to add notes on datasheet change. Refer to Table 1 for the specific changes and Table 2 for the complete updated list of old part number versus new part number and the added notes.

This is to notify our customers that IDT has successfully transferred the wafer fabrication from IDT Hillsboro, Oregon (Fab 4) to Taiwan Semiconductor Manufacturing Corporation (TSMC).

There is no expected change to the data sheet, package or backend manufacturing process.

IDT Hillsboro, Oregon (Fab 4) is no longer in production and all future wafer fabrication will be at TSMC Fab.

Table 1: Changes of New Part Number in Revision 3

Old Part Number (IDT Fab 4)	From	To
	New Part Number in Rev 2 (TSMC Fab)	New Part Number in Rev 3 (TSMC Fab)
1338C-18SRI	1338C-18SRGI	1338AC-18SRGI
1338C-31SRI	1338C-31SRGI	1338AC-31SRGI
1338C-18SRI8	1338C-18SRGI8	1338AC-18SRGI8
1338C-31SRI8	1338C-31SRGI8	1338AC-31SRGI8
1339C-2SRI	1339C-2SRGI	1339AC-2SRGI
1339C-31SRI	1339C-31SRGI	1339AC-31SRGI
1339C-2SRI8	1339C-2SRGI8	1339AC-2SRGI8
1339C-31SRI8	1339C-31SRGI8	1339AC-31SRGI8

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Table 2: Updated Affected Part Number with Replacement Part Number

Old Part Number (IDT Fab 4)	New Part Number (TSMC Fab)	Notes (Datasheet changes)
1337GDVGI	1337AGDVGI	-
1337GDVGI8	1337AGDVGI8	-
1337GDCGI	1337AGDCGI	-
1337GDCGI8	1337AGDCGI8	-
1337GCSRI	1337AGCSRGI	-
1337GCSRI8	1337AGCSRGI8	-
1338-18DCGI	1338-18DCGI	Vcc Min Fall Time on TSMC part (Vpfmax to Vpfmin) changed to 3ms at typ Vbat and 5ms at min Vbat.
1338-18DVGI	1338-18DVGI	Vcc Min Fall Time on TSMC part (Vpfmax to Vpfmin) changed to 3ms at typ Vbat and 5ms at min Vbat.
1338-31DCGI	1338-31DCGI	Vcc Min Fall Time on TSMC part (Vpfmax to Vpfmin) changed to 3ms at typ Vbat and 5ms at min Vbat.
1338-31DVGI	1338-31DVGI	Vcc Min Fall Time on TSMC part (Vpfmax to Vpfmin) changed to 3ms at typ Vbat and 5ms at min Vbat.
1338-18DCGI8	1338-18DCGI8	Vcc Min Fall Time on TSMC part (Vpfmax to Vpfmin) changed to 3ms at typ Vbat and 5ms at min Vbat.
1338-18DVGI8	1338-18DVGI8	Vcc Min Fall Time on TSMC part (Vpfmax to Vpfmin) changed to 3ms at typ Vbat and 5ms at min Vbat.
1338-31DCGI8	1338-31DCGI8	Vcc Min Fall Time on TSMC part (Vpfmax to Vpfmin) changed to 3ms at typ Vbat and 5ms at min Vbat.
1338-31DVGI8	1338-31DVGI8	Vcc Min Fall Time on TSMC part (Vpfmax to Vpfmin) changed to 3ms at typ Vbat and 5ms at min Vbat.
1338C-18SRI	1338AC-18SRGI	Vcc Min Fall Time on TSMC part (Vpfmax to Vpfmin) changed to 3ms at typ Vbat and 5ms at min Vbat.
1338C-31SRI	1338AC-31SRGI	Vcc Min Fall Time on TSMC part (Vpfmax to Vpfmin) changed to 3ms at typ Vbat and 5ms at min Vbat.
1338C-18SRI8	1338AC-18SRGI8	Vcc Min Fall Time on TSMC part (Vpfmax to Vpfmin) changed to 3ms at typ Vbat and 5ms at min Vbat.
1338C-31SRI8	1338AC-31SRGI8	Vcc Min Fall Time on TSMC part (Vpfmax to Vpfmin) changed to 3ms at typ Vbat and 5ms at min Vbat.
1339-2DCGI	1339-2DCGI	Vcc Min Fall Time on TSMC part (Vpfmax to Vpfmin) changed to 3ms at typ Vbat and 5ms at min Vbat.
1339-2DVGI	1339-2DVGI	Vcc Min Fall Time on TSMC part (Vpfmax to Vpfmin) changed to 3ms at typ Vbat and 5ms at min Vbat.
1339-31DCGI	1339-31DCGI	Vcc Min Fall Time on TSMC part (Vpfmax to Vpfmin) changed to 3ms at typ Vbat and 5ms at min Vbat.
1339-31DVGI	1339-31DVGI	Vcc Min Fall Time on TSMC part (Vpfmax to Vpfmin) changed to 3ms at typ Vbat and 5ms at min Vbat.
1339C-2SRI	1339AC-2SRGI	Vcc Min Fall Time on TSMC part (Vpfmax to Vpfmin) changed to 3ms at typ Vbat and 5ms at min Vbat.
1339C-31SRI	1339AC-31SRGI	Vcc Min Fall Time on TSMC part (Vpfmax to Vpfmin) changed to 3ms at typ Vbat and 5ms at min Vbat.

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Table 2: Updated Affected Part Number with Replacement Part Number

Old Part Number (IDT Fab 4)	New Part Number (TSMC Fab)	Notes (Datasheet changes)
1339-2DCGI8	1339-2DCGI8	Vcc Min Fall Time on TSMC part (Vpfmax to Vpfmin) changed to 3ms at typ Vbat and 5ms at min Vbat.
1339-2DVGI8	1339-2DVGI8	Vcc Min Fall Time on TSMC part (Vpfmax to Vpfmin) changed to 3ms at typ Vbat and 5ms at min Vbat.
1339-31DCGI8	1339-31DCGI8	Vcc Min Fall Time on TSMC part (Vpfmax to Vpfmin) changed to 3ms at typ Vbat and 5ms at min Vbat.
1339-31DVGI8	1339-31DVGI8	Vcc Min Fall Time on TSMC part (Vpfmax to Vpfmin) changed to 3ms at typ Vbat and 5ms at min Vbat.
1339C-2SRI8	1339AC-2SRGI8	Vcc Min Fall Time on TSMC part (Vpfmax to Vpfmin) changed to 3ms at typ Vbat and 5ms at min Vbat.
1339C-31SRI8	1339AC-31SRGI8	Vcc Min Fall Time on TSMC part (Vpfmax to Vpfmin) changed to 3ms at typ Vbat and 5ms at min Vbat.
5P90005CDCGI	5P90005CDCGI	-
5P90005CDCGI8	5P90005CDCGI8	-

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Qual Plan & Results:

TSMC Transfer Qualification Test Result Summary

Technology Information: 0.18 µm **Fab Location: TSMC Fab 8**

Technology Qualification Vehicle Test Summary – JESD47 Recommended Tests

Test / Conditions	Lead Vehicle: 6V40107 (AT294) Sample Size / Rejects/ each lot
High Temperature Operating Life (Dynamic) JESD22-A108B, +125°C @ 1000 hours or equivalent	77 / 0 77 / 0 77 / 0
Temperature Cycle JESD22-A104B, -55°C -/125°C, 1000 cycles	25 / 0 25 / 0 25 / 0
High Temperature Storage Bake JESD22-A-103-B, 150°C, 1000 hrs	25 / 0 25 / 0 25 / 0
ESD: Human Body Model JESD22-A114F , >2000V	3 / 0
ESD: Charged Device Model JEDEC 22-101C, >500V	3 / 0
Latch-up JESD78B	6 / 0
Electrical Characterization per Datasheet conditions	Pass

Technology Qualification Vehicle Test Summary – Supplemental Tests

Test / Conditions	Lead Vehicle: : 6V40107 (AT294) Sample Size / Rejects/ each lot
Ball Shear Test JESD22-B116-A, Ball Shear Strength > 5.7g	5 / 0 5 / 0 5 / 0
Highly Accelerated Stress Test (HAST) EIA/JESD22-A110B, 130°C/85%R.H. Vcc max for 100 hours.	25 / 0 25 / 0 25 / 0
Autoclave EIA/JESD22-A102C, 168hrs @ 2 ATM, Saturated Steam @ 121°C	25 / 0 25 / 0 25 / 0

Note: For HAST, Autoclave and Temperature Cycle, samples have been subjected to pre-conditioning per JESD22-A113

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Qual Plan & Results:

TSMC Transfer Qualification Test Result Summary

Technology Information: 0.18 µm, 3.3 V **Fab Location: TSMC Fab 8**

Technology Qualification Vehicle Test Summary – JESD47 Recommended Tests

Test / Conditions	Lead Vehicle: 9LPRS387 (AP298) Sample Size / Rejects/ each lot
High Temperature Operating Life (Dynamic) JESD22-A108B, +125°C @ 1000 hours or equivalent	77 / 0 77 / 0 77 / 0
Temperature Cycle JESD22-A104B, -55°C -/125°C, 1000 cycles	45 / 0 45 / 0 45 / 0
High Temperature Storage Bake JESD22-A-103-B, 150°C, 1000 hrs	77 / 0 77 / 0 77 / 0
ESD: Human Body Model JESD22-A114F	5 / 0
ESD: Charged Device Model JEDEC 22-101C	5 / 0
ESD: Machine Model JESD22-A115B	5 / 0
Latch-up JESD78B	6 / 0
Electrical Characterization per Datasheet conditions	10

Technology Qualification Vehicle Test Summary – Supplemental Tests

Test / Conditions	Lead Vehicle: 9LPRS387 (AP298) Sample Size / Rejects/ each lot
Ball Shear Test JESD22-B116-A, Ball Shear Strength > 5.7g	5 / 0 5 / 0 5 / 0
Highly Accelerated Stress Test (HAST) EIA/JESD22-A110B, 130°C/85%R.H. Vcc max for 100 hours.	45 / 0 45 / 0 45 / 0
Autoclave EIA/JESD22-A102C, 168hrs @ 2 ATM, Saturated Steam @ 121°C	45 / 0 45 / 0 45 / 0

Note: For HAST, Autoclave and Temperature Cycle, samples have been subjected to pre-conditioning per JESD22-A113

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ATTACHMENT II - PCN # : W1101-02R3

Updated Affected Part Number

Part Number	Part Number	Part Number	Part Number
1337GDVGI	1338-31DCGI	1338C-18SRI8	1339-2DCGI8
1337GDVGI8	1338-31DVGI	1338C-31SRI8	1339-2DVGI8
1337GDCGI	1338-18DCGI8	1339-2DCGI	1339-31DCGI8
1337GDCGI8	1338-18DVGI8	1339-2DVGI	1339-31DVGI8
1337GCSRI	1338-31DCGI8	1339-31DCGI	1339C-2SRI8
1337GCSRI8	1338-31DVGI8	1339-31DVGI	1339C-31SRI8
1338-18DCGI	1338C-18SRI	1339C-2SRI	5P90005CDCGI
1338-18DVGI	1338C-31SRI	1339C-31SRI	5P90005CDCGI8