



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

PRODUCT/PROCESS CHANGE NOTICE (PCN)

PCN #: **A1809-04** Date: October 24, 2018
Product Affected: VFQFPN packages
(Refer to Attachment II for the affected part numbers)

Date Effective: January 24, 2019

MEANS OF DISTINGUISHING CHANGED DEVICES:

- | | |
|--|-----------------------------------|
| <input checked="" type="checkbox"/> Product Mark | Lot # will have following prefix: |
| <input type="checkbox"/> Back Mark | "RC" prefix for ASECL, Taiwan |
| <input type="checkbox"/> Date Code | "R" denote ASEK, Taiwan |
| <input type="checkbox"/> Other | "MS" denote Carsem S, Malaysia |

Contact: IDT PCN DESK

Attachment: Yes No

E-mail: pcndesk@idt.com

Samples: Please contact your local sales representative for sample request.

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 ASECL, Taiwan; ASEK, Taiwan and Carsem (S site), Malaysia as alternate assembly facilities for parts that are currently assembled at UTL, Thailand.

There is no change to the moisture performance.

Attachment 1 details the qualification results.

RELIABILITY/QUALIFICATION SUMMARY:

Qualifications have passed. There is no change in MSL rating.

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 # : A1809-04

PCN Type: Manufacturing Site - Alternate Assembly Location & Change in Assembly Materials

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 ASECL, Taiwan; ASEK, Taiwan and Carssem (S site), Malaysia as alternate assembly facilities for parts that are currently assembled at UTL, Thailand.

The material set details of the current and alternate assembly location is as shown in Table 1.

There is no change to the moisture performance.

| | Existing | Alternate | |
|---|---|-----------------------------|--------------------------|
| VFQFPN-10, 24, 48 | | | |
| Assembly Location | UTL, Thailand | ASECL, Taiwan | |
| Die Attach | 8200T / 8600 | EN4900G | |
| Bond Wire | Gold Wire, Copper Wire | Copper Wire | |
| Mold Compound | G700 / G770HCD | G700LA | |
| VFQFPN-20, 24, 28 (stack dies product) | | | |
| Assembly Location | UTL, Thailand | ASEK, Taiwan | |
| Die Attach | 8200T / HR-5104-25 | EN4900F / NEX-130SX | |
| Bond Wire | Gold Wire | Copper Wire | |
| Mold Compound | G770HCD | G631H | |
| VFQFPN-32, 40, 48, 64 | | | |
| Assembly Location | UTL, Thailand | ASEK, Taiwan | |
| Die Attach | 8600 | EN4900F | |
| Bond Wire | Gold Wire | Copper Wire | |
| Mold Compound | G770HCD | G631H | |
| VFQFPN-16 | | | |
| Assembly Location | UTL, Thailand | ASEK, Taiwan | CRSS, Malaysia |
| Die Attach | 8600 / 8008HT ¹ / 8200T ² | EN4900F | QMI519 ² |
| Bond Wire | Gold Wire, Copper Wire ^{1/2} | Copper Wire | Copper Wire ² |
| Mold Compound | G770HCD | G631H / G700LA ¹ | G770HCD ² |

¹ For device F225x

² For device 8T73S1802 / 8P34S2102



PRODUCT/PROCESS CHANGE NOTICE (PCN)

ATTACHMENT 1 - PCN # : A1809-04

Qualification Information and Qualification Data:

Assembly Material: Shown on page 2 of this attachment.
Qual Plan & Results: Tests are in accordance with JEDEC47 recommended tests.

Affected Packages: VFQFPN-48
Qualification Vehicle: VFQFPN-72
Assembly Location: ASECL, Taiwan

| Test Description | Test Method | Test Results (Rej / SS) | | |
|---|-----------------------------|-------------------------|-------|-------|
| | | Lot 1 | Lot 2 | Lot 3 |
| * Temperature Cycling (-55°C to 125°C, 700 cycles) | JESD22-A104 | 0/25 | 0/25 | 0/25 |
| * HAST - biased (110 °C/85% RH, 96 Hrs) | JESD22-A110 | 0/25 | 0/25 | 0/25 |
| High Temperature Storage Bake (150°C, 1000 Hrs) | JESD22-A103 | 0/25 | 0/25 | 0/25 |
| Ball Shear Test | JESD22-B116 | 0/5 | 0/5 | 0/5 |
| Bond Pull Test | IDT Spec MAC-3010 | 0/5 | 0/5 | 0/5 |
| X Ray | IDT Spec. MAC-3012 | 0/45 | 0/45 | 0/45 |
| Moisture Sensitivity Level, MSL | J-STD-20 / MSL 3, 260 °C | 0/25 | 0/25 | 0/25 |

* Tests were subjected to Preconditioning per JESD22-A113 prior to stress test

Affected Packages: VFQFPN-10, 24
Qualification Vehicle: VFQFPN-36
Assembly Location: ASECL, Taiwan

| Test Description | Test Method | Test Results (Rej / SS) | | |
|---|-----------------------------|-------------------------|-------|-------|
| | | Lot 1 | Lot 2 | Lot 3 |
| * Temperature Cycling (-55°C to 125°C, 700 cycles) | JESD22-A104 | 0/25 | 0/25 | 0/25 |
| * HAST - biased (110 °C/85% RH, 96 Hrs) | JESD22-A110 | 0/25 | 0/25 | 0/25 |
| High Temperature Storage Bake (150°C, 1000 Hrs) | JESD22-A103 | 0/25 | 0/25 | 0/25 |
| Ball Shear Test | JESD22-B116 | 0/5 | 0/5 | 0/5 |
| Bond Pull Test | IDT Spec MAC-3010 | 0/5 | 0/5 | 0/5 |
| X Ray | IDT Spec. MAC-3012 | 0/45 | 0/45 | 0/45 |
| Moisture Sensitivity Level, MSL | J-STD-20 / MSL 1, 260 °C | 0/25 | 0/25 | 0/25 |

* Tests were subjected to Preconditioning per JESD22-A113 prior to stress test



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ATTACHMENT 1 - PCN # : A1809-04

Affected Packages: VFQFPN-20, 24, 28 (stack dies products)
Qualification Vehicle: VFQFPN-28
Assembly Location: ASEK, Taiwan

| Test Description | Test Method | Test Results (Rej / SS) | | |
|---|-----------------------------|-------------------------|-------|-------|
| | | Lot 1 | Lot 2 | Lot 3 |
| * Temperature Cycling (-55°C to 125°C, 700 cycles) | JESD22-A104 | 0/25 | 0/25 | 0/25 |
| * HAST - biased (130 °C/85% RH, 96 Hrs) | JESD22-A110 | 0/25 | 0/25 | 0/25 |
| High Temperature Storage Bake (150°C, 1000 Hrs) | JESD22-A103 | 0/25 | 0/25 | 0/25 |
| Ball Shear Test | JESD22-B116 | 0/5 | 0/5 | 0/5 |
| Bond Pull Test | IDT Spec MAC-3010 | 0/5 | 0/5 | 0/5 |
| X Ray | IDT Spec. MAC-3012 | 0/45 | 0/45 | 0/45 |
| Moisture Sensitivity Level, MSL | J-STD-20 / MSL 1, 260 °C | 0/25 | 0/25 | 0/25 |

* Tests were subjected to Preconditioning per JESD22-A113 prior to stress test

Affected Packages: VFQFPN-32, 40, 48, 64
Qualification Vehicle: VFQFPN-72
Assembly Location: ASEK, Taiwan

| Test Description | Test Method | Test Results (Rej / SS) | | |
|---|-----------------------------|-------------------------|-------|-------|
| | | Lot 1 | Lot 2 | Lot 3 |
| * Temperature Cycling (-55°C to 125°C, 700 cycles) | JESD22-A104 | 0/25 | 0/25 | 0/25 |
| * HAST - biased (130 °C/85% RH, 96 Hrs) | JESD22-A110 | 0/25 | 0/25 | 0/25 |
| High Temperature Storage Bake (150°C, 1000 Hrs) | JESD22-A103 | 0/25 | 0/25 | 0/25 |
| Ball Shear Test | JESD22-B116 | 0/5 | 0/5 | 0/5 |
| Bond Pull Test | IDT Spec MAC-3010 | 0/5 | 0/5 | 0/5 |
| X Ray | IDT Spec. MAC-3012 | 0/45 | 0/45 | 0/45 |
| Moisture Sensitivity Level, MSL | J-STD-20 / MSL 3, 260 °C | 0/25 | 0/25 | 0/25 |

* Tests were subjected to Preconditioning per JESD22-A113 prior to stress test



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ATTACHMENT 1 - PCN # : A1809-04

Affected Packages: VFQFPN-16
Qualification Vehicle: VFQFPN-24
Assembly Location: ASEK, Taiwan

| Test Description | Test Method | Test Results (Rej / SS) | | |
|---|-----------------------------|-------------------------|-------|-------|
| | | Lot 1 | Lot 2 | Lot 3 |
| * Temperature Cycling (-55°C to 125°C, 700 cycles) | JESD22-A104 | 0/25 | 0/25 | 0/25 |
| * HAST - biased (130 °C/85% RH, 96 Hrs) | JESD22-A110 | 0/25 | 0/25 | 0/25 |
| High Temperature Storage Bake (150°C, 1000 Hrs) | JESD22-A103 | 0/25 | 0/25 | 0/25 |
| Ball Shear Test | JESD22-B116 | 0/5 | 0/5 | 0/5 |
| Bond Pull Test | IDT Spec MAC-3010 | 0/5 | 0/5 | 0/5 |
| X Ray | IDT Spec. MAC-3012 | 0/45 | 0/45 | 0/45 |
| Moisture Sensitivity Level, MSL | J-STD-20 / MSL 1, 260 °C | 0/25 | 0/25 | 0/25 |

* Tests were subjected to Preconditioning per JESD22-A113 prior to stress test

Affected Packages: VFQFPN-16
Qualification Vehicle: VFQFPN-16
Assembly Location: Carsen S, Malaysia

| Test Description | Test Method | Test Results (Rej / SS) | | |
|---|-----------------------------|-------------------------|-------|-------|
| | | Lot 1 | Lot 2 | Lot 3 |
| * Temperature Cycling (-55°C to 125°C, 700 cycles) | JESD22-A104 | 0/25 | 0/25 | 0/25 |
| * HAST - biased (130 °C/85% RH, 96 Hrs) | JESD22-A110 | 0/25 | 0/25 | 0/25 |
| High Temperature Storage Bake (150°C, 1000 Hrs) | JESD22-A103 | 0/25 | 0/25 | 0/25 |
| Ball Shear Test | JESD22-B116 | 0/5 | 0/5 | 0/5 |
| Bond Pull Test | IDT Spec MAC-3010 | 0/5 | 0/5 | 0/5 |
| X Ray | IDT Spec. MAC-3012 | 0/45 | 0/45 | 0/45 |
| Moisture Sensitivity Level, MSL | J-STD-20 / MSL 3, 260 °C | 0/25 | 0/25 | 0/25 |

* Tests were subjected to Preconditioning per JESD22-A113 prior to stress test



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ATTACHMENT 2 - PCN # : A1809-04

Affected Part Number

| Part Number | Part Number | Part Number | Part Number |
|--------------------|--------------------|--------------------|--------------------|
| 5P49EE502-013NDGI | 5V49EE503-085NLGI8 | 5V49EE703-108NDGI8 | 5V49EE903NLGI |
| 5P49EE502-013NDGI8 | 5V49EE503-099NLG8 | 5V49EE703-109NDGI | 5V49EE903NLGI8 |
| 5P49EE502-015NDGI8 | 5V49EE503-105NLGI | 5V49EE703-109NDGI8 | 5V49EE904-032NLGI |
| 5P49EE502-128NDG8 | 5V49EE503-105NLGI8 | 5V49EE703-132NDGI | 5V49EE904-032NLGI8 |
| 5P49EE502-130NDGI8 | 5V49EE503-123NLGI | 5V49EE703-132NDGI8 | 5V49EE904-074NLGI |
| 5P49EE502-136NDG | 5V49EE503-123NLGI8 | 5V49EE703-134NDGI8 | 5V49EE904-074NLGI8 |
| 5P49EE502-136NDG8 | 5V49EE503-125NLGI8 | 5V49EE703-135NDGI | 5V49EE904-164NLGI |
| 5P49EE502-164NDGI | 5V49EE503-127NLGI | 5V49EE703-135NDGI8 | 5V49EE904-164NLGI8 |
| 5P49EE502-164NDGI8 | 5V49EE503-127NLGI8 | 5V49EE703NDGI | 5V49EE904-168NLGI |
| 5P49EE502NDGI | 5V49EE503-139NLG8 | 5V49EE703NDGI8 | 5V49EE904-168NLGI8 |
| 5P49EE502NDGI8 | 5V49EE503-144NLG | 5V49EE704-131NDGI | 5V49EE904NLGI |
| 5V19EE403-003NLGI | 5V49EE503-144NLG8 | 5V49EE704-131NDGI8 | 5V49EE904NLGI8 |
| 5V19EE403-003NLGI8 | 5V49EE503-162NLG8 | 5V49EE704-170NDGI | 6P40286NBGI8 |
| 5V19EE403NLGI | 5V49EE503-166NLGI8 | 5V49EE704-170NDGI8 | 6V40088DNBGI |
| 5V19EE403NLGI8 | 5V49EE503-187NLGI | 5V49EE704NDGI | 6V40088DNBGI8 |
| 5V19EE902NLGI | 5V49EE503-187NLGI8 | 5V49EE704NDGI8 | 6V40088ENBGI |
| 5V19EE902NLGI8 | 5V49EE503-205NLG | 5V49EE901-001NLGI8 | 6V40088ENBGI8 |
| 5V19EE903NLGI | 5V49EE503-205NLG8 | 5V49EE901-002NLGI | 6V41265NLG8 |
| 5V19EE903NLGI8 | 5V49EE503-206NLG8 | 5V49EE901-002NLGI8 | 6V41337ANLG |
| 5V2305NRGI | 5V49EE503-207NLG | 5V49EE901-035NLG8 | 6V41337ANLG8 |
| 5V2305NRGI8 | 5V49EE503-207NLG8 | 5V49EE901-078NLG8 | 6V49205CNLGI |
| 5V49EE501-063NLGI | 5V49EE503-208NLG | 5V49EE901-088NLGI | 6V49205CNLGI8 |
| 5V49EE501-063NLGI8 | 5V49EE503-208NLG8 | 5V49EE901-088NLGI8 | 849N212CKI-005LF |
| 5V49EE501-094NLGI | 5V49EE503-212NLG8 | 5V49EE901-113NLG | 849N212CKI-005LFT |
| 5V49EE501-094NLGI8 | 5V49EE503-221NLG8 | 5V49EE901-113NLG8 | 849N212CKI-006LF |
| 5V49EE501-095NLGI | 5V49EE503NLGI | 5V49EE901-124NLGI | 849N212CKI-006LFT |
| 5V49EE501-095NLGI8 | 5V49EE503NLGI8 | 5V49EE901-124NLGI8 | 849N212CKI-007LF |
| 5V49EE501-117NLGI | 5V49EE504-171NLGI8 | 5V49EE901-128NLGI8 | 849N212CKI-007LFT |
| 5V49EE501-117NLGI8 | 5V49EE504-175NLGI | 5V49EE901-158NLGI | 849N212CKI-999LF |
| 5V49EE501-118NLGI | 5V49EE504-175NLGI8 | 5V49EE901-158NLGI8 | 849N212CKI-999LFT |
| 5V49EE501-118NLGI8 | 5V49EE504NLGI | 5V49EE901-212NLGI | 8P34S2102NLGI |
| 5V49EE501-127NLGI | 5V49EE504NLGI8 | 5V49EE901-212NLGI8 | 8P34S2102NLGI8 |
| 5V49EE501-127NLGI8 | 5V49EE701NDGI | 5V49EE901NLGI | 8SLVD1212NLGI |
| 5V49EE501NLGI | 5V49EE701NDGI8 | 5V49EE901NLGI8 | 8SLVD1212NLGI/W |
| 5V49EE501NLGI8 | 5V49EE702-097NDGI8 | 5V49EE902-047NLGI | 8SLVD1212NLGI8 |
| 5V49EE502-129NLGI | 5V49EE702NDGI | 5V49EE902-047NLGI8 | 8T73S1802NLGI |
| 5V49EE502-129NLGI8 | 5V49EE702NDGI8 | 5V49EE902-061NLGI | 8T73S1802NLGI/W |
| 5V49EE502NLGI | 5V49EE703-030NDGI | 5V49EE902-061NLGI8 | 8T73S1802NLGI8 |
| 5V49EE502NLGI8 | 5V49EE703-030NDGI8 | 5V49EE902-091NLGI8 | 9277BNLG8 |
| 5V49EE503-023NLGI | 5V49EE703-038NDGI | 5V49EE902-121NLGI | F2250NLGK |
| 5V49EE503-023NLGI8 | 5V49EE703-038NDGI8 | 5V49EE902-121NLGI8 | F2250NLGK8 |
| 5V49EE503-027NLGI8 | 5V49EE703-082NDGI | 5V49EE902-252NLGI | F2255NLGK |
| 5V49EE503-046NLGI | 5V49EE703-082NDGI8 | 5V49EE902-252NLGI8 | F2255NLGK8 |
| 5V49EE503-046NLGI8 | 5V49EE703-083NDGI | 5V49EE902NLGI | F2258NLGK |
| 5V49EE503-055NLGI8 | 5V49EE703-083NDGI8 | 5V49EE902NLGI8 | F2258NLGK8 |
| 5V49EE503-068NLGI | 5V49EE703-084NDGI | 5V49EE903-111NLGI | F2914NBGK |
| 5V49EE503-068NLGI8 | 5V49EE703-084NDGI8 | 5V49EE903-111NLGI8 | F2914NBGK8 |
| 5V49EE503-073NLGI | 5V49EE703-086NDGI | 5V49EE903-116NLGI8 | F2915NBGK |
| 5V49EE503-073NLGI8 | 5V49EE703-086NDGI8 | 5V49EE903-200NLGI | F2915NBGK8 |
| 5V49EE503-085NLGI | 5V49EE703-108NDGI | 5V49EE903-200NLGI8 | |