



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

## PRODUCT/PROCESS CHANGE NOTICE (PCN)

|                                                           |                            |                                                                                                                                                                                                                                   |
|-----------------------------------------------------------|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PCN #: <b>L1301-01</b>                                    | DATE: <b>April 3, 2013</b> | MEANS OF DISTINGUISHING CHANGED DEVICES:                                                                                                                                                                                          |
| Product Affected: 74LVCHR162245APAG<br>74LVCHR162245APAG8 |                            | <input checked="" type="checkbox"/> Product Mark      Device Step (prefix prior Date Code)<br>changed from A4 to A5<br><input type="checkbox"/> Back Mark<br><input type="checkbox"/> Date Code<br><input type="checkbox"/> Other |
| Date Effective: <b>July 3, 2013</b>                       |                            |                                                                                                                                                                                                                                   |

|                                                              |                                                                                 |
|--------------------------------------------------------------|---------------------------------------------------------------------------------|
| Contact: IDT PCN DESK                                        | Attachment: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| E-mail: <a href="mailto:pcndesk@idt.com">pcndesk@idt.com</a> | Samples: Please contact your local IDT sales representative for sample request  |

### DESCRIPTION AND PURPOSE OF CHANGE:

- |                                                        |                                                                                                                                                                                                                                       |
|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Die Technology                |                                                                                                                                                                                                                                       |
| <input type="checkbox"/> Wafer Fabrication Process     | This notification is to advise our customers that IDT has successfully completed the transfer of 74LVCHR162245APAG/8 wafer Fab production from IDT Hillsboro, Oregon (Fab4) to Taiwan Semiconductor Manufacturing Corporation (TSMC). |
| <input type="checkbox"/> Assembly Process              |                                                                                                                                                                                                                                       |
| <input type="checkbox"/> Equipment                     |                                                                                                                                                                                                                                       |
| <input type="checkbox"/> Material                      | Fab 4 is now closed and all new wafer fab production will be from TSMC.                                                                                                                                                               |
| <input type="checkbox"/> Testing                       |                                                                                                                                                                                                                                       |
| <input checked="" type="checkbox"/> Manufacturing Site | There is no change to ordering part number and device top mark .                                                                                                                                                                      |
| <input type="checkbox"/> Data Sheet                    | Refer to Attachment 1 & 2 for details.                                                                                                                                                                                                |
| <input type="checkbox"/> Other                         |                                                                                                                                                                                                                                       |

### RELIABILITY/QUALIFICATION SUMMARY:

Please refer Attachment 2.

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

### **ATTACHMENT 1 - PCN # : L1301-01**

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

**Data Sheet Change:** None

**Detail Of Change:**

This notification is to advise our customers that IDT has successfully completed the transfer of 74LVCHR162245APAG/8 wafer Fab production from IDT Hillsboro, Oregon (Fab4) to Taiwan Semiconductor Manufacturing Corporation (TSMC).

Fab 4 is now closed and all new wafer fab production will be from TSMC.

There is no change to ordering part number and device top mark .

Characterization data of material manufactured at TSMC is comparable to material manufactured at IDT Fab 4, Hillsboro.

Please contact your local IDT sales representative to request samples or additional information.



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## PRODUCT/PROCESS CHANGE NOTICE (PCN)

### ATTACHMENT 2 - PCN # : L1301-01

#### TSMC Transfer Qualification Test Result Summary

Technology Information: 0.5  $\mu$ m

Fab Location: TSMC Fab 3

#### Technology Qualification Vehicle Test Summary – JESD47 Recommended Tests

| Test / Conditions                                                                            | Lead Vehicle: LVC16244A<br>(40056X) |
|----------------------------------------------------------------------------------------------|-------------------------------------|
|                                                                                              | Sample Size / Rejects/ each lot     |
| High Temperature Operating Life (Dynamic)<br>JESD22-A108B, +125°C @ 1000 hours or equivalent | 79 / 0                              |
| Temperature Cycle<br>JESD22-A104B, -55°C / 125°C, 1000 cycles                                | 45 / 0                              |
| High Temperature Storage Bake<br>JESD22-A-103-B, 150°C, 1000 hrs                             | 77 / 0                              |
| ESD: Human Body Model<br>JESD22-A114F, >2000V                                                | 5 / 0                               |
| ESD: Charged Device Model<br>JEDEC 22-101C, >500V                                            | 5 / 0                               |
| ESD: Machine Model<br>JESD22-A115B, >200V                                                    | 5 / 0                               |
| Latch-up JESD78B                                                                             | 6 / 0                               |
| Electrical Characterization per Datasheet conditions                                         | 5 / 0                               |

#### Technology Qualification Vehicle Test Summary – Supplemental Tests

| Test / Conditions                                                                                  | Lead Vehicle: : LVC16244A<br>(40056X) |
|----------------------------------------------------------------------------------------------------|---------------------------------------|
|                                                                                                    | Sample Size / Rejects/ each lot       |
| Ball Shear Test<br>JESD22-B116-A, Ball Shear Strength > 5.7g                                       | 5 / 0                                 |
| Highly Accelerated Stress Test (HAST)<br>EIA/JESD22-A110B, 130°C/85%R.H.<br>Vcc max for 100 hours. | 45 / 0                                |
| Autoclave<br>EIA/JESD22-A102C, 168hrs @ 2 ATM, Saturated Steam @ 121°C                             | 45 / 0                                |

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