



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

## PRODUCT/PROCESS CHANGE NOTICE (PCN)

<b>PCN #:</b> <b>DC1308-01</b> <b>DATE:</b> <b>26-Sep-2013</b> <b>Product Affected:</b> VFQFPN-56 Refer to Attachment I for the affected part numbers  <b>Date Effective:</b> <b>26-Sep-2013</b>	<b>MEANS OF DISTINGUISHING CHANGED DEVICES:</b> <input checked="" type="checkbox"/> <b>Product Mark</b> Change in Ordering part# <input type="checkbox"/> <b>Back Mark</b> <input type="checkbox"/> <b>Date Code</b> <input type="checkbox"/> <b>Other</b>
--	--

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

**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 type="checkbox"/> Material <input type="checkbox"/> Testing <input type="checkbox"/> Manufacturing Site <input type="checkbox"/> Data Sheet <input checked="" type="checkbox"/> Other	<p>This notification is to inform our customers that the product name of DAC1653 and DAC1658 families have been converted to the IDT standard format. IDT has changed product name ending "HN-C1" or "NLG-1" to "NLGA".</p> <p>The new product name will be reflected on the top mark.</p> <p>"NLGA" version will contain a new silicon version.</p> <p>Attachment I shows the affected list of part numbers. Attachment II shows the qualification data.</p>
--	---

**RELIABILITY/QUALIFICATION SUMMARY:**

There is no expected change to the product quality and reliability.

**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: \_\_\_\_\_



## PRODUCT/PROCESS CHANGE NOTICE (PCN)

### ATTACHMENT I - PCN # : DC1308-01

**PCN Type:** Change of die revision  
**Data Sheet Change:** None  
No change in moisture sensitivity level (MSL)

#### Detail Of Change:

This notification is to inform our customers that the product name of DAC1653 and DAC1658 families have been converted to the IDT standard format. IDT has changed product name ending "HN-C1" or "NLG-1" to "NLGA". Refer to Table 1.

The new product name will be reflected on the top mark.

"NLGA" version will contain a new silicon version. Refer to qualification data in attachment II.

Table 1: Ordering Part# Changes

Old Ordering Part Number	New Ordering Part Number
DAC1653D1G0NLG-C1	DAC1653D1G0NLGA
DAC1653D1G0NLG-C18	DAC1653D1G0NLGA8
DAC1653D1G25NLG-C1	DAC1653D1G25NLGA
DAC1653D1G25NLG-C18	DAC1653D1G25NLGA8
DAC1653D1G5NLG-C1	DAC1653D1G5NLGA
DAC1653D1G5NLG-C18	DAC1653D1G5NLGA8
DAC1653D1G8NLG-C1	DAC1653D1G8NLGA
DAC1653D1G8NLG-C18	DAC1653D1G8NLGA8
DAC1658D1G0NLG-C1	DAC1658D1G0NLGA
DAC1658D1G0NLG-C18	DAC1658D1G0NLGA8
DAC1658D1G25NLG-C1	DAC1658D1G25NLGA
DAC1658D1G25NLG-C18	DAC1658D1G25NLGA8
DAC1658D1G5HN-C1	DAC1658D1G5NLGA
DAC1658D1G5HN-C18	DAC1658D1G5NLGA8
DAC1658D1G8NLG-C1	DAC1658D1G8NLGA
DAC1658D1G8NLG-C18	DAC1658D1G8NLGA8



## Qualification Test Plan and Timeline

Date: 02/09/2013

<b>Product Type: DAC1653D/1658D High-speed high-performance 16-bit dual channel DAC</b>			
Product Options:	DAC1653D & DAC1658D	Process Technology:	CLN65LP, 1P7M
Package Type:	NLG56 (VFQFP-N 56L)	Fab Location:	TSMC (Taiwan)
Qual Plan:	QDC-12-01	Assembly Location:	ASE-K (Taiwan)

### Test Descriptions

Test Description	Conditions	Sample Size	Results (rej/ss) or Estimated Completion	Comments
ESD: Human Body Model	JESD22-A114 (JS-001) Classification	3	At least 2.5KV	Complete and pass
ESD: Charged Device Model	JESD22-C101 Classification	3	At least 1.5KV	Complete and pass
Latch-Up	JESD78	6	Class II, Level A 3 pulses	Complete and pass
Electrical Characterization	JESD86	10	October 31, 2013	<i>In-progress</i>
High Temperature Operating Life	JESD22-A108, $V_{cc_{max}}$ , $T_j +150^{\circ}\text{C}$ , 1000 hrs	77 77 77	Done (0/77) Done (0/77) Done (0/77)	Complete and pass
Early Life Failure Rate	JESD22-A108, $V_{cc_{max}}$ , $T_j +150^{\circ}\text{C}$ , 48 hrs	840	October 31, 2013	<i>In-progress</i>
Temperature Cycling <sup>§</sup>	JESD22-A104, $-55^{\circ}\text{C}$ to $+125^{\circ}\text{C}$ , 700 cycles	25 25 25	Done (0/25) Done (0/25) Done (0/25)	Complete and pass
Highly Accelerated Temperature and Humidity stress (Biased) <sup>§</sup>	JESD22-A110, $+130^{\circ}\text{C}$ , 85% R.H., $V_{cc_{max}}$ , 96 hrs	25 25 25	Done (0/25) Done (0/25) Done (0/25)	Complete and pass
High Temperature Storage Life	JESD22-A103, $+150^{\circ}\text{C}$ , 1000 hrs	25 25 25	Done (0/25) Done (0/25) Done (0/25)	Complete and pass

<sup>§</sup> With MSL preconditioning per JESD22-A113, MSL 3 ( $260^{\circ}\text{C}$ )