



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

## PRODUCT/PROCESS CHANGE NOTICE (PCN)

<b>PCN #:</b> I-0707-01 <b>DATE:</b> July 30, 2007 <b>Product Affected:</b> 89HPES24N3A, 89HPES12N3A, 89HPES24T6, 89HPES32T8, 89HPES16T4, 89HPES16T7 & 89HPES8T5 - BGA Packages <b>Date Effective:</b> July 30, 2007	<b>MEANS OF DISTINGUISHING CHANGED DEVICES:</b> <input checked="" type="checkbox"/> Product Mark    Change in Ordering Part Number <input type="checkbox"/> Back Mark <input type="checkbox"/> Date Code <input type="checkbox"/> Other
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<b>Contact:</b> Bimla Paul <b>Title:</b> Quality Assurance Manager <b>Phone #:</b> (408) 574-6419 <b>Fax #:</b> (408) 284-8362 <b>E-mail:</b> <a href="mailto:Bimla.Paul@idt.com">Bimla.Paul@idt.com</a>	<b>Attachment::</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  <b>Samples:</b> N/A
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**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 checked="" type="checkbox"/> Data Sheet <input checked="" type="checkbox"/> Other	<p>This notification is to advise our customers that IDT has qualified a new die revision to address the device errata. The details are as follow:          Device die revision from Mark Revision "ZC" to Mark Revision "ZG" for 89HPES24N3A, 89HPES12N3A &amp; 89HPES24T6 and from Mark Revision "ZD" to Mark Revision "ZH" for 89HPES32T8, 89HPES16T4, 89HPES16T7 &amp; 89HPES8T5 to enhance the device performance.</p> <p>There will be a change in ordering part number. Please see attachment for details.</p>
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**RELIABILITY/QUALIFICATION SUMMARY:** See attached data. There is no change to the die technology/process.

**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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### ATTACHMENT - PCN #: I- 0707-01

**PCN Type:** Die revision

**Data Sheet Change** Yes

**Detail of Change** This notification is to advise our customers that IDT has qualified a new die revision to address the device errata. The details are as follow:  
Device die revision from Mark Revision "ZC" to Mark Revision "ZG" for 89HPES24N3A, 89HPES12N3A & 89HPES24T6 and from Mark Revision "ZD" to Mark Revision "ZH" for 89HPES32T8, 89HPES16T4, 89HPES16T7 & 89HPES8T5 to enhance the device performance.

There will be a change in ordering part number. Please see Table 1 for details.

The new die revision will address the known errata items as follow:

**For 89HPES24N3A, 89HPES12N3A & 89HPES24T6 Mark Revision "ZC" Errata & 89HPES32T8, 89HPES16T4, 89HPES16T7 & 89HPES8T5 Mark Revision "ZD" Errata**

1. Eliminate errata item 1 : WRR malfunction on repeated loading of PA table.
2. Eliminate errata item 2 : Device may corrupt a specific JTAG pattern.
3. Eliminate errata item 3 : Missing electrical idle ordered set results in perpetual L1 state.
4. Eliminate errata item 4 : ACK latency is miscalculated on all ports.
5. Eliminate errata item 5 : Device unable to transmit DLLPs in some cases.
6. Eliminate errata item 6 : Writing to the PCIESCTL register resets the PCIESCAP register to default value.
7. Eliminate errata item 7 : I/O Expander hot-plug outputs incorrect in certain specific instances.
8. Eliminate errata item 8 : CC bit in PCIESSTS register set by an EEPROM based initialization write to PCIESCTL register.
9. Modified revision ID

**Table 1**

ZC to ZG Transition Parts		ZD to ZH Transition Parts	
Old Part #	New Part#	Old Part #	New Part#
89HPES12N3AZCBC	89HPES12N3AZGBC	89HPES8T5ZDBC	89HPES8T5ZHBC
89HPES12N3AZCBCG	89HPES12N3AZGBCG	89HPES8T5ZDBCXG	89HPES8T5ZHBCXG
89HPES24N3AZCBX	89HPES24N3AZGBX	89HPES16T4ZDBC	89HPES16T4ZHBC
89HPES24N3AZCBXG	89HPES24N3AZGBXG	89HPES16T4ZDBCXG	89HPES16T4ZHBCXG
89HPES24T6ZCBX	89HPES24T6ZGBX	89HPES16T7ZDBX	89HPES16T7ZHBX
89HPES24T6ZCBXG	89HPES24T6ZGBXG	89HPES16T7ZDBXG	89HPES16T7ZHBXG
		89HPES32T8ZDBX	89HPES32T8ZHBX
		89HPES32T8ZDBXG	89HPES32T8ZHBXG

Note: For T&R, "T" suffix is added to the part#



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#### Qualification Data

**Test Vehicle:** IDT89HPES24N3A

#### Qualification Test Plan and Results:

Test Description	Sample Size/ # Of Fails	Test Results (SS/ # Of Fails)
Dynamic High Temp Operating Life Test	77/0	77/0
* Temperature Cycling (-65 °C to 150 °C, 500 cycle)	45/0	45/0
* Highly Accelerated Stress Test (HAST) (130 °C, 85% RH, 100 Hrs)	45/0	45/0
ESD HBM	3/0	3/0
ESD CDM	3/0	3/0

Notes: \* Test requires Moisture Pre-Conditioning sequence.