

PROCESS CHANGE NOTIFICATION

PCN0513

ADDITIONAL TSMC WAFER FABRICATION SITE

Change Description:

This is an update to PCN0513; please see the revision history table for information specific to this update.

Beginning January 1, 2006, Altera started shipping 90-nm products from TSMC's Fab 14 fabrication site, in addition to TSMC Fab 12. Devices fabricated in TSMC Fab 14 are ensured to be equivalent to devices fabricated in TSMC Fab 12 through Altera's FabMatch[®] process replication methodology.

Reason for Change:

TSMC Fab 14 was added as a 90-nm wafer source to ensure product availability.

Products Affected:

Initially, Altera's 90-nm based product families, including Cyclone[®] II and Stratix[®] II products, were affected. The first Altera product fabricated in TSMC Fab 14 was the Stratix II EP2S130 device. Products that have been transferred through previous PCN notifications are listed in Table 1.

Additional products scheduled to ship from Fab 14 are shown in Table 2. Notification of these additional products to be fabricated in TSMC Fab 14 is being provided through updates to this document, PCN0513.

Altera's 90-nm based products or product families that currently have no schedule for shipping from TSMC Fab 14 are listed in Table 3. In the event any of these products or product families become scheduled to ship from TSMC Fab 14, standard notification will be provided through a revision to this document, PCN0513.

Table 1. 90-nm Products Currently Shipping from TSMC Fab 14

Product Family	Products Affected	Effective Date
EP2S90	All Ordering Part Numbers	January 2007
EP2C8	All Ordering Part Numbers	October 2006
EP2C20	All Ordering Part Numbers	October 2006
EP2C35	All Ordering Part Numbers	October 2006
EP2C50	All Ordering Part Numbers	October 2006
EP2S130	All Ordering Part Numbers	January 2006
EP2C5	All Ordering Part Numbers	August 2007
EP2C70	All Ordering Part Numbers	August 2007
EP2C8A	All Ordering Part Numbers	August 2007
EP2C15A	All Ordering Part Numbers	August 2007
EP2S60	All Ordering Part Numbers	August 2007

Table 2. 90-nm Products Scheduled to Ship from TSMC Fab 14

Product Family	Products Affected	Effective Date
EP2S15	All Ordering Part Numbers	February 2009
EP2S30	All Ordering Part Numbers	March 2009
EP2S180	All Ordering Part Numbers	March 2009

Table 3. 90-nm Products Not Scheduled to Ship from TSMC Fab 14

Product Family	Products Affected	Effective Date
HardCopy [®] II	All Ordering Part Numbers	NA
Stratix II GX	All Ordering Part Numbers	NA

Identification and Traceability

Stratix II devices manufactured at TSMC Fab 14 are marked with **9V** on the lot number. See Figure 1. Cyclone II devices manufactured at TSMC FAB 14 are marked with **9Y** on the lot number. See Figure 2.

Figure 1. Fabrication Site Location Marking for Stratix II Devices

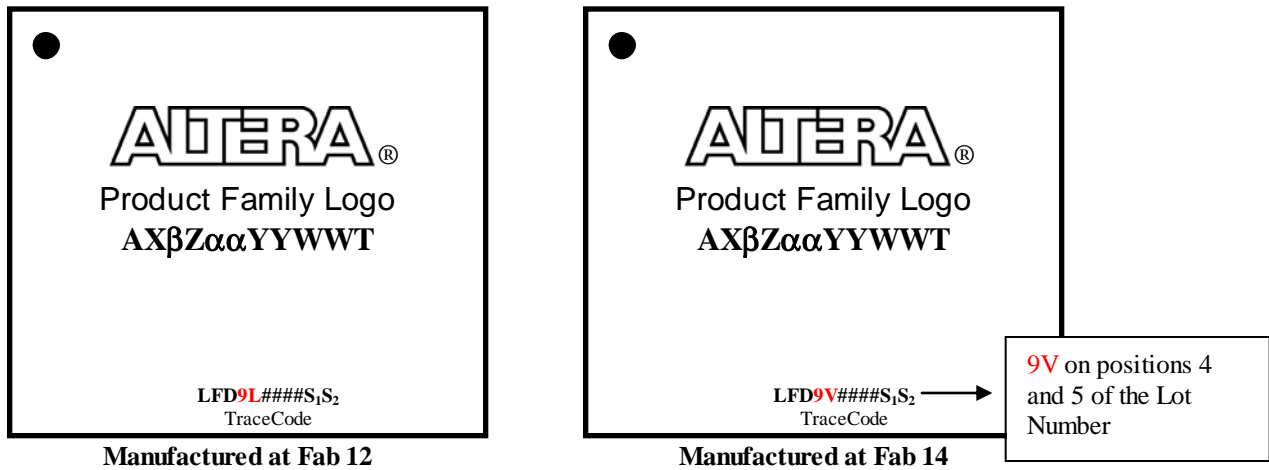
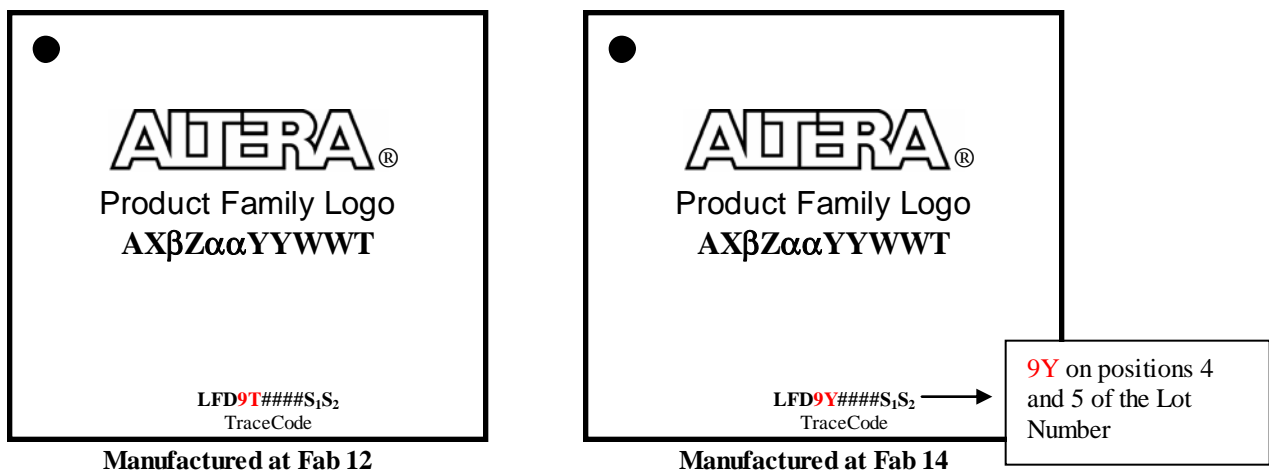


Figure 2. Fabrication Site Location Marking for Cyclone II Devices



Qualification Data:

The TSMC Fab 14 fabrication site has been qualified using the FabMatch methodology developed by Altera and TSMC. Altera and TSMC have developed the FabMatch methodology to ensure a process technology is exactly duplicated when transferred from one fabrication facility to another, resulting in identical devices produced at multiple wafer fabs. The FabMatch approach compares the process, reliability, and device performance data on products from two separate facilities to demonstrate that the process technology is duplicated, arriving at a product which has identical electrical and product performance characteristics.

The FabMatch report is available upon request.

Contact:

For more information, please contact your local Altera sales representative or Altera Customer Quality Engineering at customer-quality@altera.com.

In accordance with JESD46-B, this change is deemed acceptable to the customer if no acknowledgement is received within 30 days from this notification.

Revision History

Date	Rev	Description
09/09/2005	1.0.0	Initial Release
05/10/2007	1.1.0	Update to include additional products and their transition dates.
05/25/2007	1.1.1	Added identification and traceability information for Cyclone II devices.
11/21/2008	1.2.1	Update "Effective Date" for EP2S15, EP2S30 and EP2S180