

# PROCESS CHANGE NOTIFICATION

## PCN0808

### WIRE-BOND DIAMETER REDUCTION FOR SELECTED TQFP PACKAGES

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#### Change Description

Altera is implementing bond wire diameter reduction from 1.0 mil to 0.8 mil on product lines assembled in the TQFP package. This change will be implemented on selected MAX<sup>®</sup> CPLD and MAX II CPLD product lines.

#### Recommended Action

No action is required as a result of this change.

#### Reason for Change

Altera is implementing this change in order to be consistent with current assembly manufacturing practices. The 0.8 mil bond wire is defined as standard technology and is used in high-volume production by our assembly vendors. This change improves the availability of supply and the overall product life.

#### Products Affected

The product lines affected by this change are listed in Table 1. A list of ordering part numbers is included in Appendix 1. The products will transition to the 0.8 mil bond-wires as the current inventory is consumed.

**Table 1: Affected Product Lines**

Product Family	Package Type	Pin Count	Product Line	Sample Availability (1)	Product Transition
MAX CPLD	TQFP	T44	EPM7032AE	Now	Dec 2008
			EPM7064AE	Now	Dec 2008
			EPM3032A	Now	Dec 2008
			EPM3064A	Now	Dec 2008
		T100	EPM7064AE	Now	Dec 2008
			EPM7128AE	Now	Dec 2008
			EPM3064A	Now	Dec 2008
			EPM3128A	Now	Dec 2008
		T144	EPM7128AE	Now	Dec 2008
			EPM7256AE	Now	Dec 2008
			EPM3128A	Now	Dec 2008
			EPM3256A	Now	Dec 2008
MAX II CPLD	TQFP	T100	EPM570	Now	Dec 2008
			EPM240	Now	Dec 2008
			EPM570G	Now	Dec 2008
			EPM240G	Now	Dec 2008

For device samples please visit <http://www.samplecomponents.com/scripts/SampleCenter.dll?Altera>

## Product Traceability and Transition Dates

This change will be implemented in December 2008. Customers may receive products with this change beginning with a date-code marking of 0843 or later on the top of the package. See Figure 1. The 0843 date-code marking indicates the earliest date that the new material may be used for any of the affected devices. However, initial samples may have an earlier date-code marking.

**Figure 1. Date-Code Marking**

Altera Date-Code Marking Format
A XβZαα <b>0843</b> T

## Qualification Data

Qualification data meets Altera's quality and reliability requirements. Qualification data is summarized in Table 2.

**Table 2. Summary of Qualification Data**

Product Family	Product Line	Representative Packages	Qualification Test	Readout	Results
MAX <sup>®</sup> CPLD	EPM7256AE	T144	PCL 3 + Temp Cycle "B" (-55°C to 125°C)	1000 cyc	0 /80
			High Temp Bake @ 150° C	1000 hrs	0 /79
			PCL 3 + HAST (130°C/85%RH)	96 hrs	0 /80
			PCL 3 + Autoclave	96 hrs	0 /80
			Life Test	1000 hrs	0 /25
MAX <sup>®</sup> II CPLD	EPM570	T100	PCL 3 + Temp Cycle "B" (-55°C to 125°C)	700 cyc	0 /55
			High Temp Bake @ 150° C	500 hrs	0 /55
			PCL 3 + HAST (130°C/85%RH)	96 hrs	0 /54
			PCL 3 +Autoclave	96 hrs	0 /55

## Contact

For more information, please contact Altera Customer Quality Engineering at [customer-quality@altera.com](mailto:customer-quality@altera.com).

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

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## Revision History

Date	Rev	Description
09/04/2008	1.0.0	Initial Release

## Appendix 1. Affected Ordering Part Numbers

EPM7032AETA44-10N	EPM7128AETA100-10N	EPM3128ATC144-10	EPM240GT100C3
EPM7032AETC44-10	EPM7128AETC100-10	EPM3128ATC144-10N	EPM240GT100C3N
EPM7032AETC44-10N	EPM7128AETC100-10N	EPM3128ATC144-5	EPM240GT100C3TT
EPM7032AETC44-4	EPM7128AETC100-5	EPM3128ATC144-5N	EPM240GT100C4
EPM7032AETC44-4N	EPM7128AETC100-5N	EPM3128ATC144-7	EPM240GT100C4N
EPM7032AETC44-7	EPM7128AETC100-7	EPM3128ATC144-7N	EPM240GT100C4TT
EPM7032AETC44-7N	EPM7128AETC100-7N	EPM3128ATI144-10	EPM240GT100C5
EPM7032AETI44-7	EPM7128AETI100-7	EPM3128ATI144-10AA	EPM240GT100C5N
EPM7032AETI44-7N	EPM7128AETI100-7N	EPM3128ATI144-10N	EPM240GT100C5TT
			EPM240GT100I5
EPM7064AETA44-10N	EPM3064ATC100-10	EPM3256ATC144-10	EPM240GT100I5N
EPM7064AETC44-10	EPM3064ATC100-10N	EPM3256ATC144-10AA	EPM240GT100I5NRR
EPM7064AETC44-10N	EPM3064ATC100-4	EPM3256ATC144-10N	EPM240GT100I5RR
EPM7064AETC44-4	EPM3064ATC100-4N	EPM3256ATC144-7	
EPM7064AETC44-4N	EPM3064ATC100-7	EPM3256ATC144-7N	EPM570GT100C3
EPM7064AETC44-7	EPM3064ATC100-7N	EPM3256ATI144-10	EPM570GT100C3N
EPM7064AETC44-7N	EPM3064ATI100-10	EPM3256ATI144-10N	EPM570GT100C4
EPM7064AETI44-7	EPM3064ATI100-10N		EPM570GT100C4N
EPM7064AETI44-7AA		EPM240T100A5N	EPM570GT100C5
EPM7064AETI44-7N	EPM3128ATC100-10	EPM240T100C3	EPM570GT100C5N
	EPM3128ATC100-10N	EPM240T100C3N	EPM570GT100C5RR
EPM3032ATC44-10	EPM3128ATC100-5	EPM240T100C3RR	EPM570GT100I5
EPM3032ATC44-10N	EPM3128ATC100-5N	EPM240T100C3TT	EPM570GT100I5N
EPM3032ATC44-4	EPM3128ATC100-7	EPM240T100C4	EPM570GT100I5NRR
EPM3032ATC44-4N	EPM3128ATC100-7N	EPM240T100C4N	EPM570GT100I5RR
EPM3032ATC44-7	EPM3128ATI100-10	EPM240T100C4TT	
EPM3032ATC44-7N	EPM3128ATI100-10N	EPM240T100C5	
EPM3032ATI44-10		EPM240T100C5AA	
EPM3032ATI44-10N	EPM7128AETA144-10N	EPM240T100C5N	
EPM3032ATC44-10AA	EPM7128AETC144-10	EPM240T100C5NRR	
EPM3032ATC44-10NAA	EPM7128AETC144-10N	EPM240T100C5RR	
EPM3032ATC44-10NAB	EPM7128AETC144-5	EPM240T100C5TT	
	EPM7128AETC144-5N	EPM240T100I5	
EPM3064ATC44-10	EPM7128AETC144-7	EPM240T100I5N	
EPM3064ATC44-10N	EPM7128AETC144-7EM	EPM240T100I5NRR	
EPM3064ATC44-4	EPM7128AETC144-7N	EPM240T100I5RR	
EPM3064ATC44-4N	EPM7128AETI144-7		
EPM3064ATC44-7	EPM7128AETI144-7N	EPM570T100A5N	
EPM3064ATC44-7N		EPM570T100C3	
EPM3064ATI44-10	EPM7256AETC144-10	EPM570T100C3N	
EPM3064ATI44-10N	EPM7256AETC144-10N	EPM570T100C4	
EPM3064ATC44-10AA	EPM7256AETC144-5	EPM570T100C4N	
EPM3064ATC44-10NAA	EPM7256AETC144-5N	EPM570T100C5	
	EPM7256AETC144-7	EPM570T100C5N	
EPM7064AETA100-10N	EPM7256AETC144-7EM	EPM570T100C5NAA	
EPM7064AETC100-10	EPM7256AETC144-7N	EPM570T100C5NRR	
EPM7064AETC100-10N	EPM7256AETI144-7	EPM570T100C5RR	
EPM7064AETC100-4	EPM7256AETI144-7AA	EPM570T100I5	
EPM7064AETC100-4N	EPM7256AETI144-7N	EPM570T100I5N	
EPM7064AETC100-7		EPM570T100I5RR	
EPM7064AETC100-7N			
EPM7064AETI100-7			
EPM7064AETI100-7AA			
EPM7064AETI100-7N			