



CUSTOMER ADVISORY ADV0907

ADDITIONAL ASSEMBLY PLANT FOR MBGA PACKAGES

Change Description

Altera will be introducing Amkor, Philippines as an additional assembly source for Altera® Micro FineLine BGA (MBGA) packages. This change does not affect the form, fit, or function of the device. The current package-dimension specifications and bill of materials will not change.

Recommended Action

No customer action is recommended. Supporting qualification data are included in this notification.

Reason for Change

Amkor, Philippines, is a fully qualified assembly subcontractor for Altera FineLine BGA (FBGA) packages. The addition of Amkor, Philippines, as an assembly source for MBGA packages will enable Altera to ensure product availability and to be in a better position to meet long-term customer demand.

Amkor, Philippines, is already an Altera strategic manufacturing partner. They have demonstrated manufacturing excellence, good assembly performance, and the ability to accommodate Altera's high-volume capacity requirements.

Products Affected

The product lines affected by this change are listed in Table 1. A list of the affected ordering part numbers are listed in Appendix 1.

Table 1: Affected Product Lines

Product Family	Product Line	Package	Pin Count	Product Transition
Cyclone III	EP3C5	MBGA	164	Sept 2009
	EP3C10			Sept 2009
	EP3C16			Sept 2009
MAX II	EPM240		100	Sept 2009
	EPM570		100	Sept 2009
	EPM1270		256	Sept 2009
MAX IIZ	EPM240Z		256	Sept 2009
			68	Sept 2009
	EPM570Z		100	Sept 2009
			100	Sept 2009
			144	Sept 2009
			256	Sept 2009

Product Traceability and Transition Dates

This change will be implemented in September, 2009. Customers may receive products with this change beginning with date-code marking of 0937 or later (see Figure 1).

Figure 1: Date-code Marking

Altera Date-code Marking Format
A XβZαα0937T

Qualification Data

The MBGA package is qualified by extension using FBGA256 qualification data. See Table 2 for a summary.

Table 2: Summary of Qualification Data

Product Family	Product Line	Representative Packages	Qualification Test	Readout	Results
Cyclone® II FPGA	EP2C8	FBGA 256	High Temp Bake 150°C	1000hrs	0/25
			PCL 3 + Unbiased HAST	96hrs	0/125
			PCL 3 + Temp Cycle "B" @ 260°C reflow	1000cyc	0/118
			Temperature Humidity Bias (85°C/85%RH)	1000hrs	0/100
			Life Test	1000hrs	0/25
Cyclone® III FPGA	EP3C25	FBGA 256	PCL 3 + Unbiased HAST	96hrs	0/55
			PCL 3 + Unbiased HAST @ 260°C reflow	1000cyc	0/55
			Temperature Humidity Bias (85°C/85%RH)	1000hrs	0/54

Contact

For more information, please contact Altera Customer Quality Engineering at customer-quality@altera.com.

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

Revision History

Date	Rev	Description
08/07/2009	1.0.0	Initial Release

Appendix 1: Affected Ordering Part Numbers

Cyclone III

EP3C5M164C7N	EP3C10M164C7N	EP3C16M164C7N	EP3C16M164INAA
EP3C5M164C8N	EP3C10M164C8N	EP3C16M164C8N	
EP3C5M164I7N	EP3C10M164I7N	EP3C16M164I7N	

MAX II

EPM240GM100C5N	EPM570GM100C5N	EPM570M100C5NAA	EPM1270GM256I5N
EPM240GM100I5N	EPM570GM100I5N	EPM570M100I5N	EPM1270M256C4N
EPM240M100C4N	EPM570GM256C5N	EPM570M256C4N	EPM1270M256C5N
EPM240M100C5N	EPM570GM256I5N	EPM570M256C5N	EPM1270M256C5NAA
EPM240M100C5NAA	EPM570M100C4N	EPM570M256I5N	EPM1270M256I5N
EPM240M100I5N	EPM570M100C5N	EPM1270GM256C5N	

MAX IIZ

EPM240ZM100C6N	EPM240ZM68C6N	EPM570ZM100I8N	EPM570ZM256C7N
EPM240ZM100C7	EPM240ZM68C7N	EPM570ZM144C6N	EPM570ZM256I8N
EPM240ZM100C7N	EPM240ZM68I8N	EPM570ZM144C7N	
EPM240ZM100C7NHT	EPM570ZM100C6N	EPM570ZM144I8N	
EPM240ZM100I8N	EPM570ZM100C7N	EPM570ZM256C6N	

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