



## **CUSTOMER ADVISORY ADV0601 Rev01 ADDITION OF ASSEMBLY PLANT FOR FBGA PACKAGES**

### **Change Description:**

Amkor, Philippines, will be added as an additional assembly source for Altera® FineLine BGA® (FBGA) and Ultra FineLine BGA (UBGA) packages using BT-based substrates. This will not affect the current moisture rating for these packages. The current package-dimension specifications will not change.

### **Reason for Change:**

Amkor, Philippines, is a fully qualified assembly subcontractor for FBGA packages using tape-based substrate. The addition of Amkor, Philippines, as an assembly source for FBGA and UBGA packages using BT-based substrates will enable Altera to better support increased demand for the affected products.

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

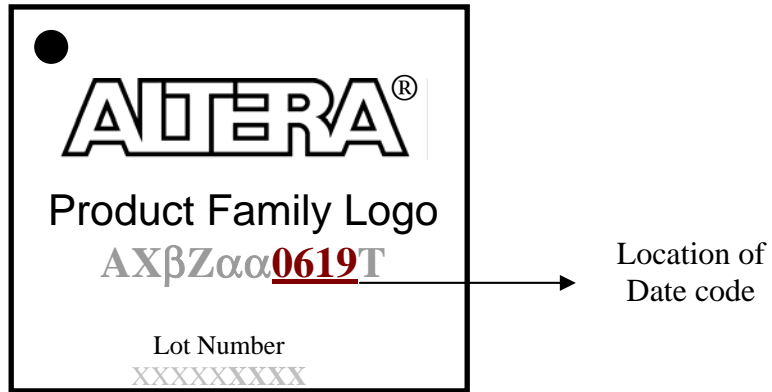
### **Affected Products:**

The product lines affected by this change are listed in Table 1.

### **Product Traceability and Transition Dates:**

This change will be implemented in May 2006. Beginning with top mark date code of 0619, products assembled by Amkor, Philippines, will begin shipping to customers (see Figure 1).

Figure 1: Product Date Code Marking



**Contact:**

For more information on this change, contact your local Altera sales representative or Altera Customer Quality Engineering at [customer-quality@altera.com](mailto:customer-quality@altera.com).

**Table 1 – Affected Products**

Package	Pin Count	Product Line
FBGA	144	EP20K30E
		EP20K60E
	256	EP1C12
		EP1C6
		EP1K10
		EP1K100
		EPF10K100E
		EPF10K10A
		EPF10K30A
		EP1K30
		EPF10K30E
		EP1K50
		EPF10K50E
		EPF10K50S
	324	EP1C12
		EP1C4
		EP20K100
		EP20K60E
	400	EP1C4
UBGA	49	EPM7032B
		EPM7064B

## Appendix 1 – Qualification Data

Representative Package	Qualification Test	Read Out	Results
FBGA 256	<u><b>Biased HAST</b></u> PCL 3 and 130° C/85% RH	96 hrs	0/75
	<u><b>Temperature Cycle</b></u> PCL 3 and Temperature Cycle Condition B	1000 cycles	0/50
FBGA 324	<u><b>Biased HAST</b></u> PCL 3 and 130° C/85% RH	96 hrs	0/25
	<u><b>Temperature Cycle</b></u> PCL 3 and Temperature Cycle Condition B	1000 cycles	0/25