

Altera Device Package Information

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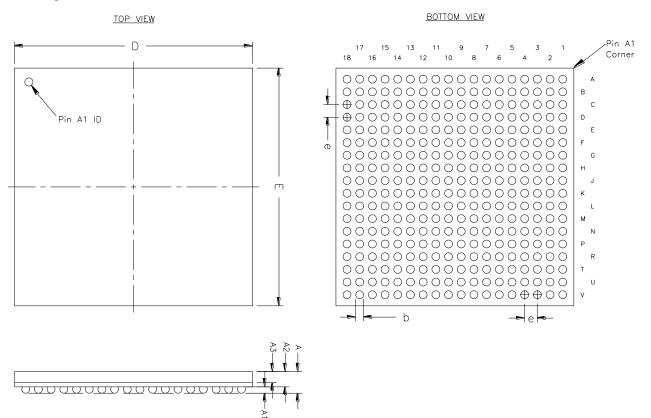
324-Pin Ultra FineLine Ball-Grid Array (UBGA) - Wire Bond - A:1.50

- All dimensions and tolerances conform to ASME Y14.5M 1994.
- Controlling dimension is in millimeters.
- Pin A1 may be indicated by an ID dot, or a special feature, in its proximity on package surface.

Package Information		
Description	Specification	
Ordering Code Reference	U	
Package Acronym	UBGA	
Substrate Material	ВТ	
Solder ball composition	Regular: 63Sn:37Pb (Typ.) Pb-free: Sn:3Ag:0.5Cu (Typ.)	
JEDEC Outline Reference	MO-216 Variation: BAK-1	
Lead Coplanarity	0.005 inch (0.12 mm)	
Weight	0.8 g (Typ.)	
Moisture Sensitivity Level	Printed on moisture barrier bag	

Package Outline Dimension Table				
Symbol	Millimeters			
	Min.	Nom.	Max.	
Α	1.20	1.35	1.50	
A1	0.35	0.40	0.45	
A2	0.75	0.95	1.15	
А3	0.65	0.70	0.75	
D	15.00 BSC			
E	15.00 BSC			
b	0.40	0.50	0.60	
е	0.80 BSC			

Package Outline



Document Revision History

Table 1 shows the revision history for this document.

Table 1. Document Revision History

Date	Version	Changes
October 2011	1.0	Initial release



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