

Altera Device Package Information

04R-00233-1.0

324-Pin FineLine Ball-Grid Array (FBGA) - Wire Bond - A:1.90

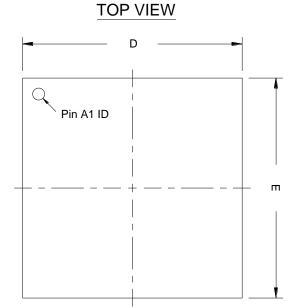
- All dimensions and tolerances conform to ASME Y14.5M 1994.
- Controlling dimension is in millimeters.
- Pin A1 may be indicated by an ID dot, or a special feature, in its proximity on package surface.

Package Information		
Description	Specification	
Ordering Code Reference	F	
Package Acronym	FBGA	
Substrate Material	ВТ	
Solder ball composition	Regular: 63Sn:37Pb (Typ.) Pb-free: Sn:3Ag:0.5Cu (Typ.)	
JEDEC Outline Reference	MO-034 Variation: AAG-1	
Lead Coplanarity	0.008 inch (0.20 mm)	
Weight	1.4 g (Typ.)	
Moisture Sensitivity Level	Printed on moisture barrier bag	

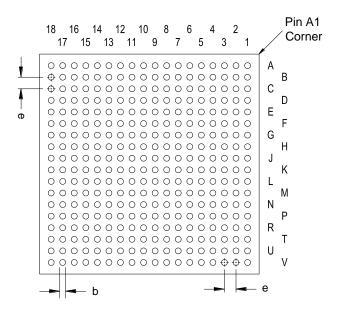
Symbol	Millimeters		
	Min.	Nom.	Max.
Α	1.60	1.75	1.90
A1	0.40	0.50	0.60
A2	1.00	1.25	1.50
A3	0.65	0.70	0.75
D	19.00 BSC		
E	19.00 BSC		
b	0.50	0.60	0.70
е	1.00 BSC		

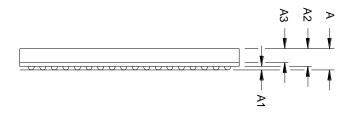
Package Outline

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BOTTOM VIEW





Document Revision History

Table 1 shows the revision history for this document.

Table 1. Document Revision History

Date	Version	Changes
June 2011	1.0	Initial release



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