

Altera Device Package Information

04R-00427-2.0

672-Pin FineLine Ball-Grid Array (FBGA) - Wire Bond - A:2.00

- 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.

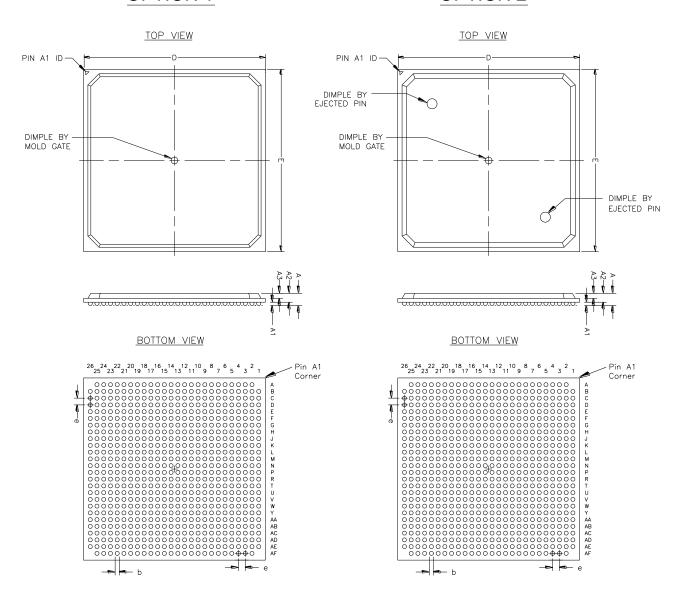
Package Information		
Description	Specification	
Ordering Code Reference	F	
Package Acronym	FBGA	
Substrate Material	BT	
Solder ball composition	Regular: 63Sn:37Pb (Typ.) Pb-free: Sn:3Ag:0.5Cu (Typ.)	
JEDEC Outline Reference	MS-034 Variation: AAL-1	
Lead Coplanarity	0.008 inch (0.20 mm)	
Weight	3.0 g (Typ.)	
Moisture Sensitivity Level	Printed on moisture barrier bag	

Package Outline Dimension Table				
Complete	Millimeters			
Symbol	Min.	Nom.	Max.	
Α	1.70	1.85	2.00	
A1	0.40	0.50	0.60	
A2	1.10	1.35	1.60	
А3	0.71	0.76	0.81	
D	27.00 BSC			
E	27.00 BSC			
b	0.50	0.60	0.70	
е	1.00 BSC			

Package Outline

OPTION 1

OPTION 2



Document Revision History

Table 1 shows the revision history for this document.

Table 1. Document Revision History

Date	Version	Changes	
September 2011	1.0	Initial release	
December 2012	2.0	Add option 2 package outline in page.2.	

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