

Altera Device Package Information

04R-00471-1.0

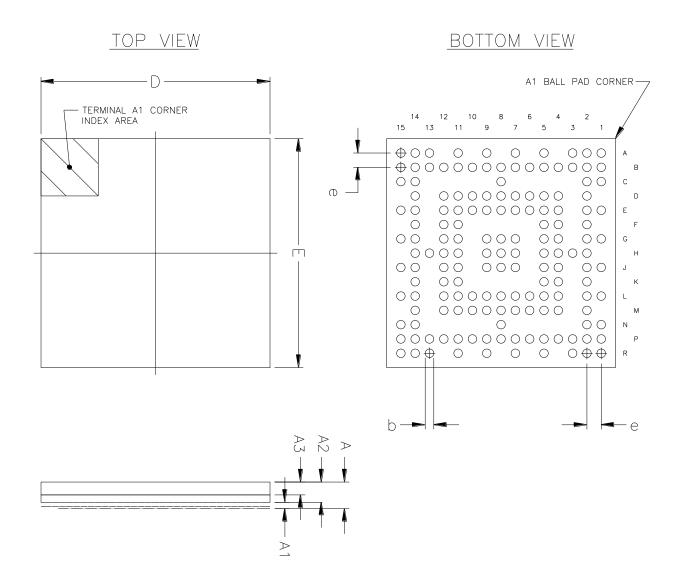
153-Pin Micro FineLine Ball-Grid Array (MBGA) – Wire Bond - A:1.00

- 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	M	
Package Acronym	MBGA	
Substrate Material	ВТ	
Solder ball composition	Pb-free: Sn:3Ag:0.5Cu (Typ.)	
JEDEC Outline Reference	MO-195 Variation: AE	
Lead Coplanarity	0.003 inch (0.08 mm)	
Weight	0.18 g (Typ.)	
Moisture Sensitivity Level	Printed on moisture barrier bag	

Package Outline Dimension Table				
Compleal	Millimeters			
Symbol	Min.	Nom.	Max.	
Α	0.80	0.90	1.00	
A1	0.17	0.22	0.27	
A2	0.53	0.68	0.83	
А3	0.40	0.45	0.50	
D	8.00 BSC			
E	8.00 BSC			
b	0.25	0.30	0.35	
е	0.50 BSC			

Package Outline



Document Revision History

Table 1 shows the revision history for this document.

Table 1. Document Revision History

Date	Version	Changes
May 2014	1.0	Initial release



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