

Altera Device Package Information

04R-00385-1.0

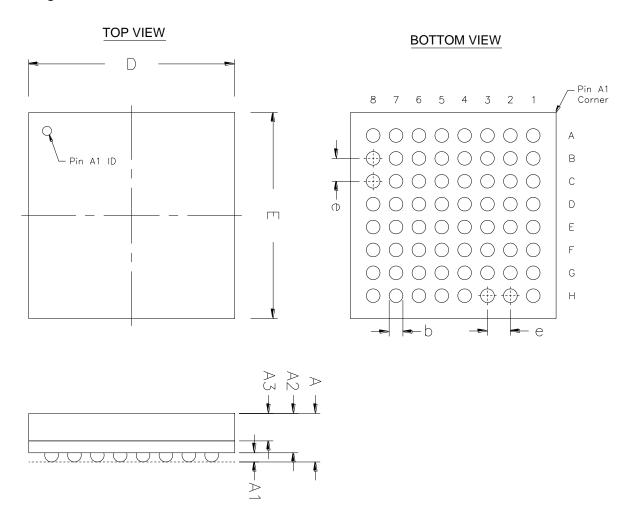
64-Pin Micro FineLine Ball-Grid Array (MBGA) - Wire Bond - A:1.20

- 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	BT		
Solder ball composition	Regular: 63Sn:37Pb (Typ.) Pb-free: Sn:3Ag:0.5Cu (Typ.)		
JEDEC Outline Reference	MO-195 Variation: BX		
Lead Coplanarity	0.003 inch (0.080 mm)		
Weight	0.06 g (Typ.)		
Moisture Sensitivity Level	Printed on moisture barrier bag		

Symbol	Millimeters		
	Min.	Nom.	Max.
Α	0.90	1.05	1.20
A1	0.15	0.20	0.25
A2	0.65	0.85	1.05
А3	0.55	0.60	0.65
D		4.50 BSC	
Е	4.50 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
July 2011	1.0	Initial release



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