

Altera Device Package Information

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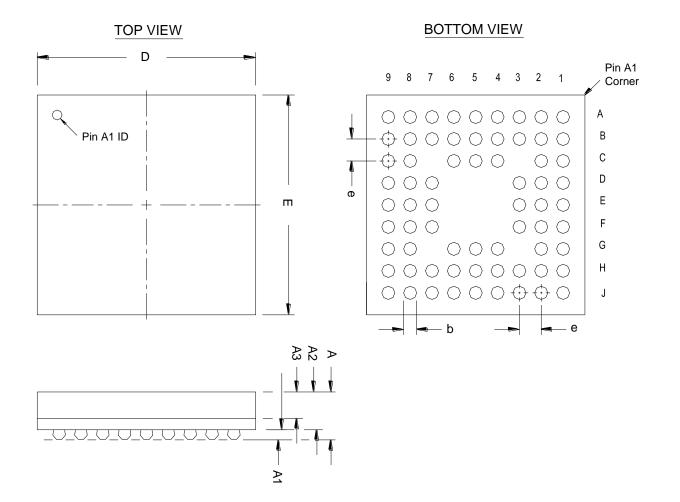
68-Pin Micro FineLine Ball-Grid Array (MBGA) - Wire Bond - A:1.20

- 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	Pb-free: Sn:3Ag:0.5Cu (Typ.)	
JEDEC Outline Reference	MO-195 Variation: AB	
Lead Coplanarity	0.003 inch (0.08 mm)	
Weight	0.07 g (Typ.)	
Moisture Sensitivity Level	Printed on moisture barrier bag	

Package Outline Dimension Table				
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	5.00 BSC			
E	5.00 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
July 2011	1.0	Initial release



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