

Altera Device Package Information

04R-00227-1.0

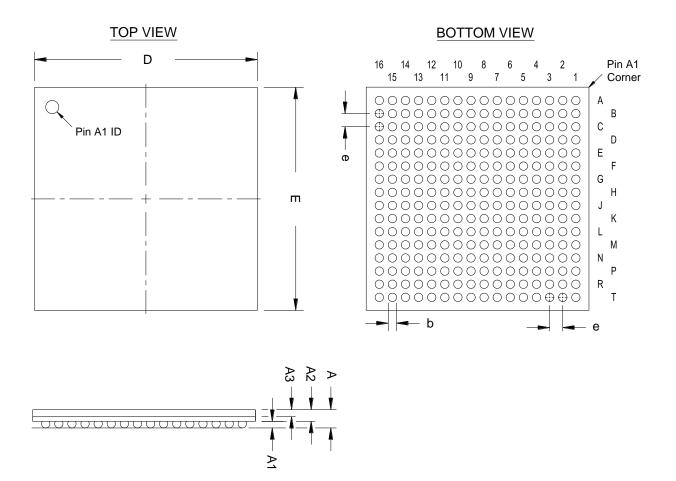
256 Pin Fineline Ball-Grid Array (FBGA) - Wire Bond - A:1.90

- 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 | MS-034 Variation: AAF-1 | | |
| Lead Coplanarity | 0.008 inch (0.20 mm) | | |
| Weight | 1.1 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 | 17.00 BSC | | | |
| E | 17.00 BSC | | | |
| b | 0.50 | 0.60 | 0.70 | |
| е | | 1.00 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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