Altera Device Package Information

04R-00541-1.0

1932-Pin FineLine Ball-Grid Array (FBGA) - Flip Chip - Single-Piece Lid - A:3.30 - D1:38.9

- 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

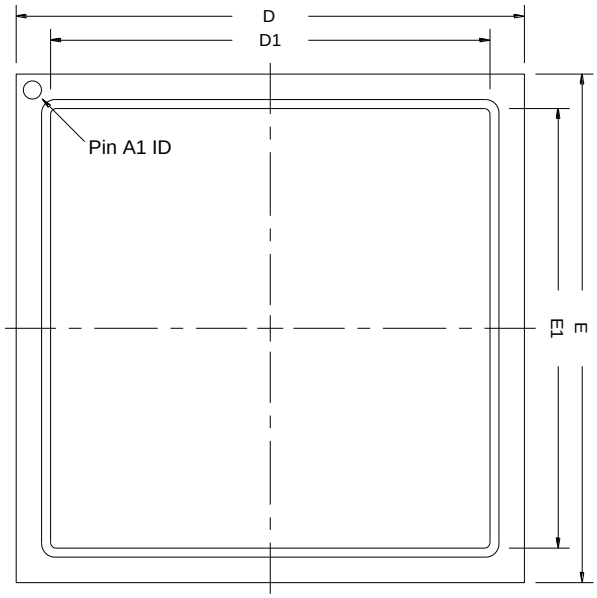
Description	Specification
Ordering Code Reference	F
Package Acronym	FBGA
Substrate Material	BT
Solder ball composition	Regular: 63Sn:37Pb (Typ.) Pb-free: Sn:3Ag:0.5Cu (Typ.)
JEDEC Outline Reference	MS-034 Variation: AAW-1
Lead Coplanarity	0.010 inch (0.25 mm)
Weight	19.6 g (Typ.)
Moisture Sensitivity Level	Printed on moisture barrier bag

Package Outline Dimension Table

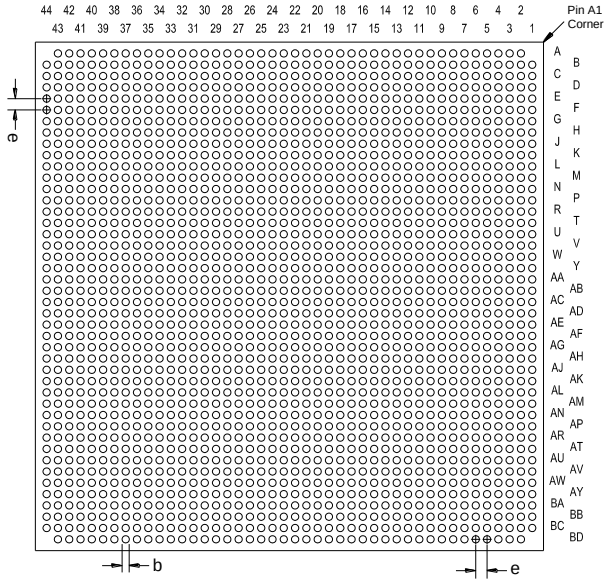
Symbol	Millimeters		
	Min.	Nom.	Max.
A	2.80	3.05	3.30
A1	0.37	0.47	0.57
A2	2.23	2.58	2.93
A3	1.30	1.40	1.50
D	45.00 BSC		
D1	38.90 BSC		
E	45.00 BSC		
E1	38.90 BSC		
b	0.50	0.60	0.70
e	1.00 BSC		

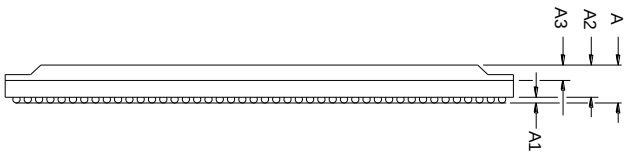
Package Outline

TOP VIEW



BOTTOM VIEW





Document Revision History

Table 1 shows the revision history for this document.

Table 1. Document Revision History

Date	Version	Changes
February 2021	1.0	Initial release

now part of Intel

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