

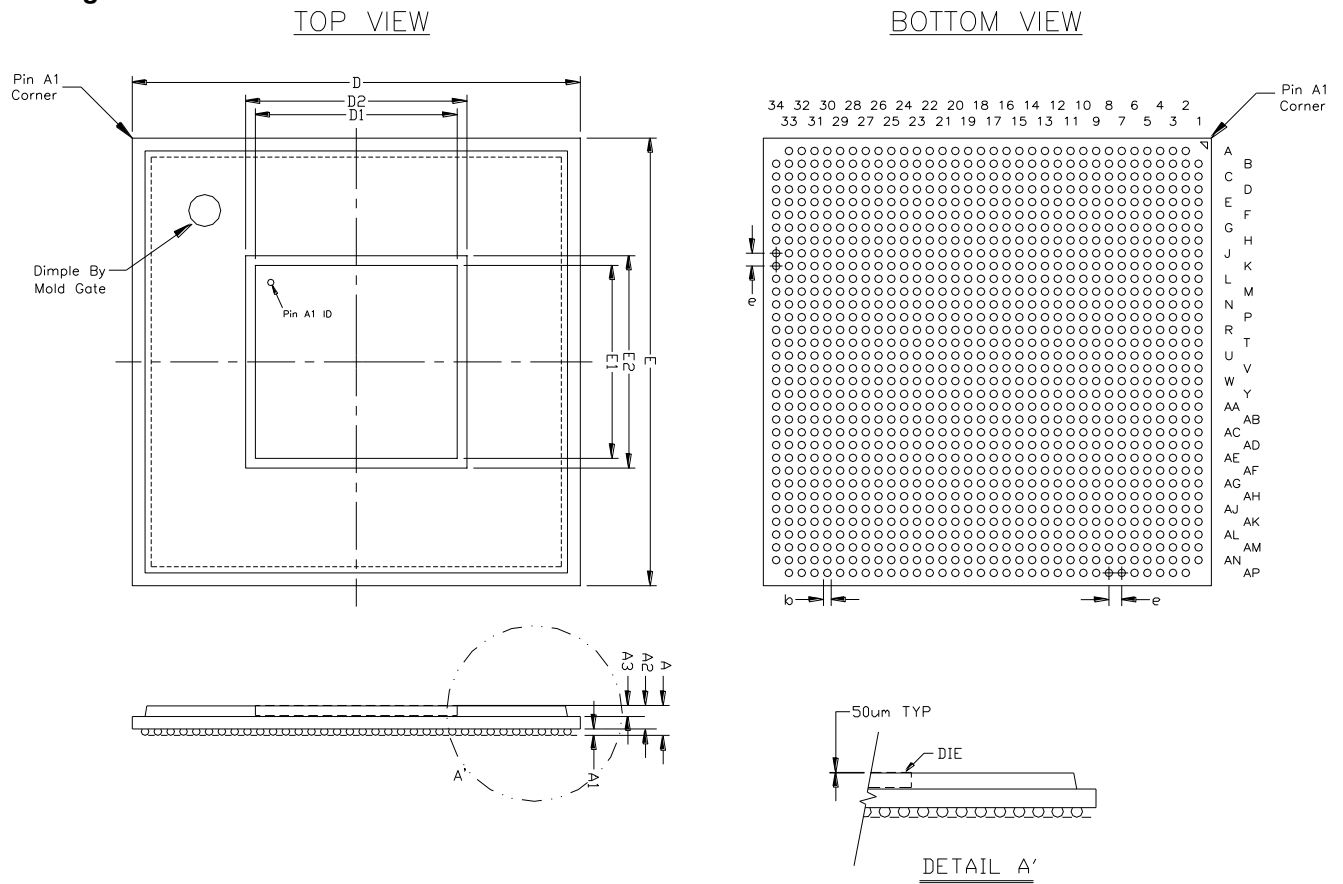
1152-Pin FineLine Ball-Grid Array (FBGA) - Flip Chip - Thermal Composite - A:2.70 - D2:22.1

- 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: AAR-1
Lead Coplanarity	0.008 inch (0.20 mm)
Weight	6.1 g (Typ.)
Moisture Sensitivity Level	Printed on moisture barrier bag

Package Outline Dimension Table			
Symbol	Millimeters		
	Min.	Nom.	Max.
A	2.30	2.50	2.70
A1	0.40	0.50	0.60
A2	1.90	2.00	2.10
A3	0.75	0.80	0.85
D	35.00 BSC		
D1	Device Specific Dimension (see table at page 2)		
D2	22.10		
E	35.00 BSC		
E1	Device Specific Dimension (see table at page 2)		
E2	18.70		
b	0.50	0.60	0.70
e	1.00 BSC		

Device Specific Dimension Table					
Device	Millimeters		Device	Millimeters	
	D1	E1		D1	E1
5AGXB3	19.10	14.40	5AGXB5	20.00	16.70
5AGXB1	19.10	14.40	5AGXB7	20.00	16.70
5AGTD3	19.10	14.40	5AGTD7	20.00	16.70
5AGXA5	16.50	13.30	5AGTC7	16.50	13.30
5AGXA7	16.50	13.30	5ASTD3	20.00	16.71
5ASTB3	20.00	16.71	5ASTD5	20.00	16.71
5ASTB5	20.00	16.71			

Package Outline

Document Revision History

Table 1 shows the revision history for this document.

Table 1. Document Revision History

Date	Version	Changes
December 2011	1.0	Initial release
February 2012	2.0	1. Include Dimension "D2" and "E2" in the dimension table and diagram. 2. Change dimension "A3" from "0.75/0.85/0.95"mm to "0.75/0.80/0.85"mm
May 2012	3.0	1. Update Package Outline to include detail A'. 2. Include die size for device 5AGXB1, 5AGXB5 and 5AGXB7.
February 2013	4.0	1. Include die size for device 5AGTD3, 5AGTD7, 5AGXA5, 5AGXA7 and 5AGTC7.
April 2013	5.0	Add die size info for device 5ASTD3, 5ASTD5, 5ASTB3 and 5ASTB5 in Device Specific Dimension Table.



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