

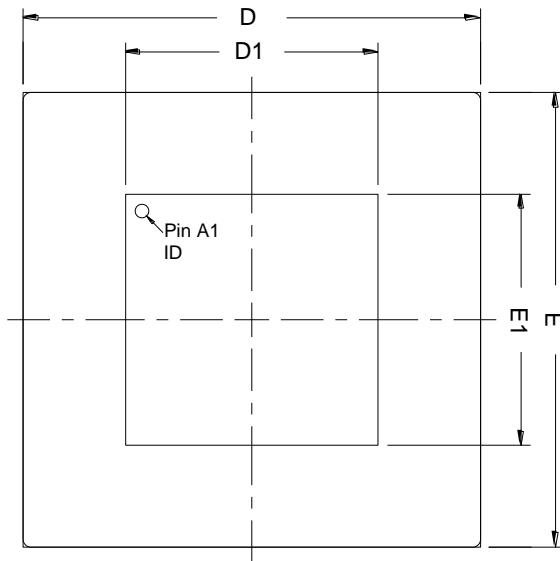
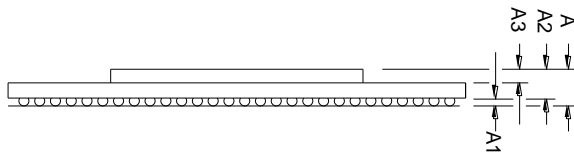
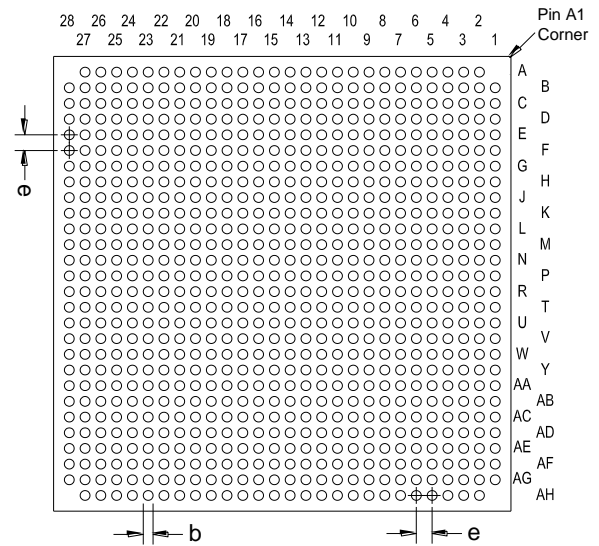
## 780-Pin FineLine Ball-Grid Array (FBGA) - Flip Chip - Lidless - A:2.70

- 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: AAM-1
Lead Coplanarity	0.008 inch (0.20 mm)
Weight	3.0 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	1.70	2.00	2.30
A3	0.75	0.85	0.95
D	29.00 BSC		
D1	Die Size (Device-Dependant)		
E	29.00 BSC		
E1	Die Size (Device-Dependant)		
b	0.50	0.60	0.70
e	1.00 BSC		

Device Specific Dimension Table					
Device	Millimeters		Device	Millimeters	
	D1	E1		D1	E1
EP2AGX45	11.10	10.50	EP2AGX65	11.10	10.50
HC325	11.00	9.60	HC4E25	11.00	9.60
HC4GX15	11.00	9.60	HC4GX25	16.80	9.60

**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
June 2011	1.0	Initial release
November 2011	2.0	Add Device Specific Dimension Table at page 1.



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