

## 1517-Pin FineLine Ball-Grid Array (FBGA) - Flip Chip - Thermal Composite - A:2.70 - D2:26.0

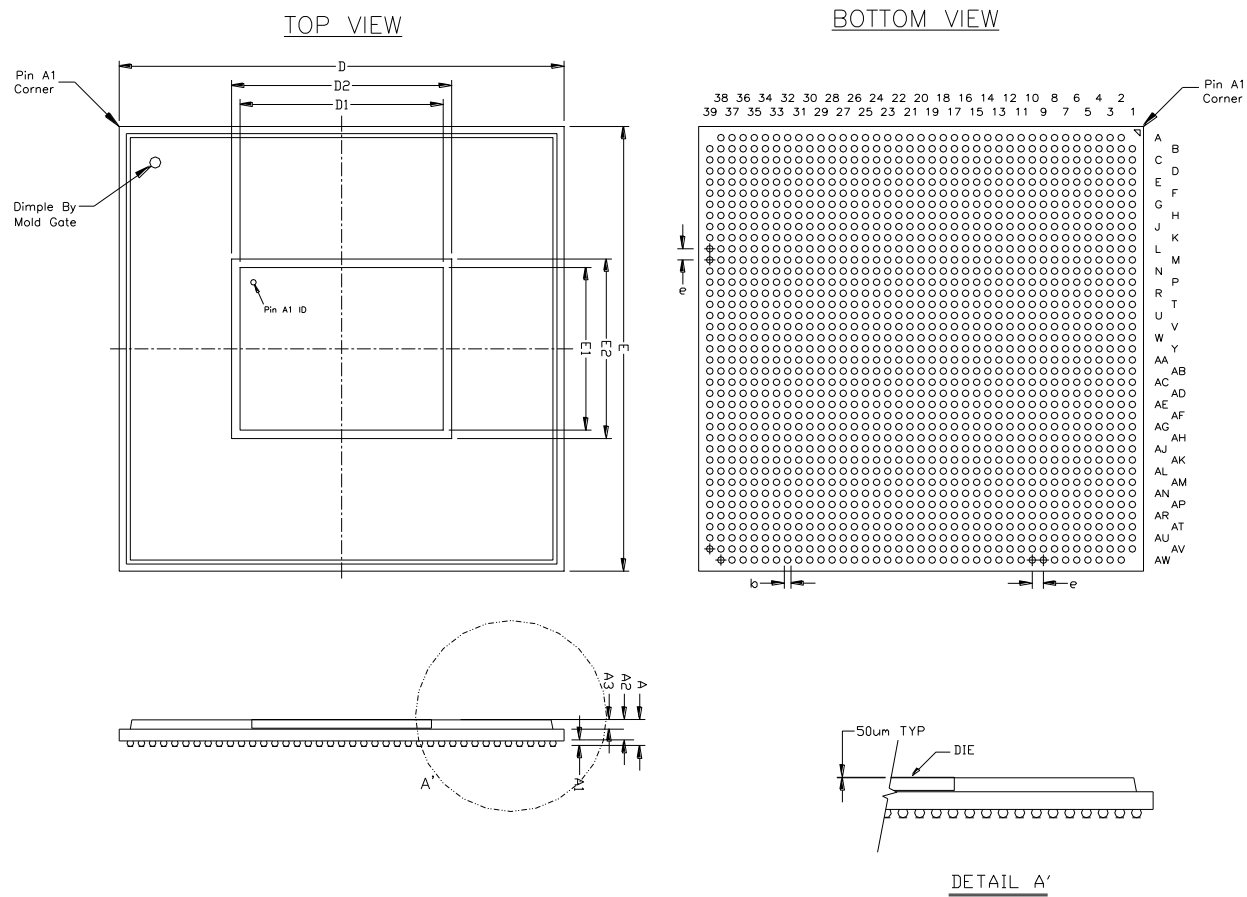
- All dimensions and tolerances conform to ASME Y14.5M – 1994.
- Controlling dimension is in millimeters.
- Pin A1 may be indicated by an ID dot, or a special feature, in its proximity on package surface.

| Package Information        |   |
|----------------------------|---|
| Description                | Specification   |
| Ordering Code Reference    | F   |
| Package Acronym            | FBGA  |
| Substrate Material         | BT  |
| Solder ball composition    | Regular: 63Sn:37Pb (Typ.)<br>Pb-free: Sn:3Ag:0.5Cu (Typ.) |
| JEDEC Outline Reference    | MS-034 Variation: AAU-1                                   |
| Lead Coplanarity           | 0.010 inch (0.25 mm)                                      |
| Weight                     | 8.5 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                               | 40.00 BSC                                   |      |      |
| D1                              | Device Specific Dimension (see table below) |      |      |
| D2                              | 26.0  |      |      |
| E                               | 40.00 BSC                                   |      |      |
| E1                              | Device Specific Dimension (see table below) |      |      |
| E2                              | 22.0  |      |      |
| 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 |
| 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.<br>2. Change dimension "A3" from "0.75/0.85/0.95"mm to "0.75/0.80/0.85"mm |
| March 2012    | 3.0     | Change Lead Coplanarity from 0.008 inch (0.20 mm) to 0.010 inch (0.25 mm)  |
| May 2012      | 4.0     | 1. Update Package Outline to include detail A'.<br>2. Include die size for device 5AGXB1, 5AGXB5 and 5AGXB7.                                     |
| August 2012   | 5.0     | To include the dimension of "D2" and "E2" at the TOP VIEW at Page 2.   |
| February 2013 | 6.0     | Add die size info for device 5AGTD3 and 5AGTD7 in Device Specific Dimension Table.   |
| April 2013    | 7.0     | Add die size info for device 5ASTD3, 5ASTD5, 5ASTB3 and 5ASTB5 in Device Specific Dimension Table.   |



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