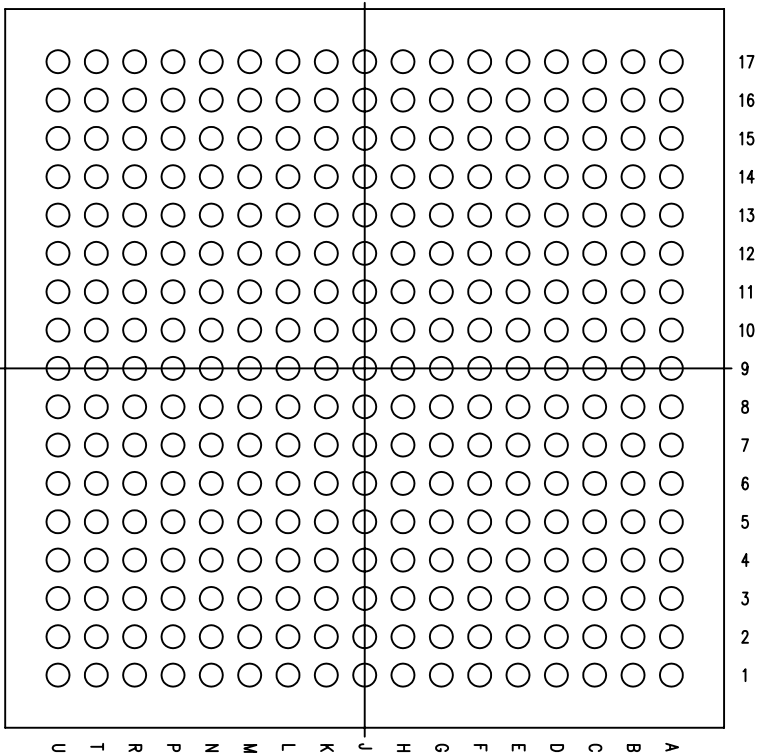


(289 BALL SHOWN)

|                             |             |                                 |  |
|-----------------------------|-------------|---------------------------------|--|
| TOLERANCES UNLESS SPECIFIED |             | 6024 SILVER CREEK               |  |
| DECIMAL                     | ANGULAR     | VALLEY ROAD, SAN JOSE, CA 95138 |  |
| XXX                         | F           | PHONE: (408) 284-8200           |  |
| XXXX                        |             | FAX: (408) 284-3572             |  |
| XXXXX                       |             | WWW.IDT.COM                     |  |
| APPROVALS                   | DATE        | TITLE                           |  |
| DRAWN                       | 09/20/07    | BFC289 FPBGA PACKAGE OUTLINE    |  |
| CHECKED                     |             | 15.0 X 15.0 mm, 0.8mm PITCH     |  |
| SIZE                        | DRAWING No. | REV                             |  |
| C                           | PSC-4219    | 03                              |  |
| DO NOT SCALE DRAWING        |             | SHEET 1 OF 4                    |  |




(289 BALL)

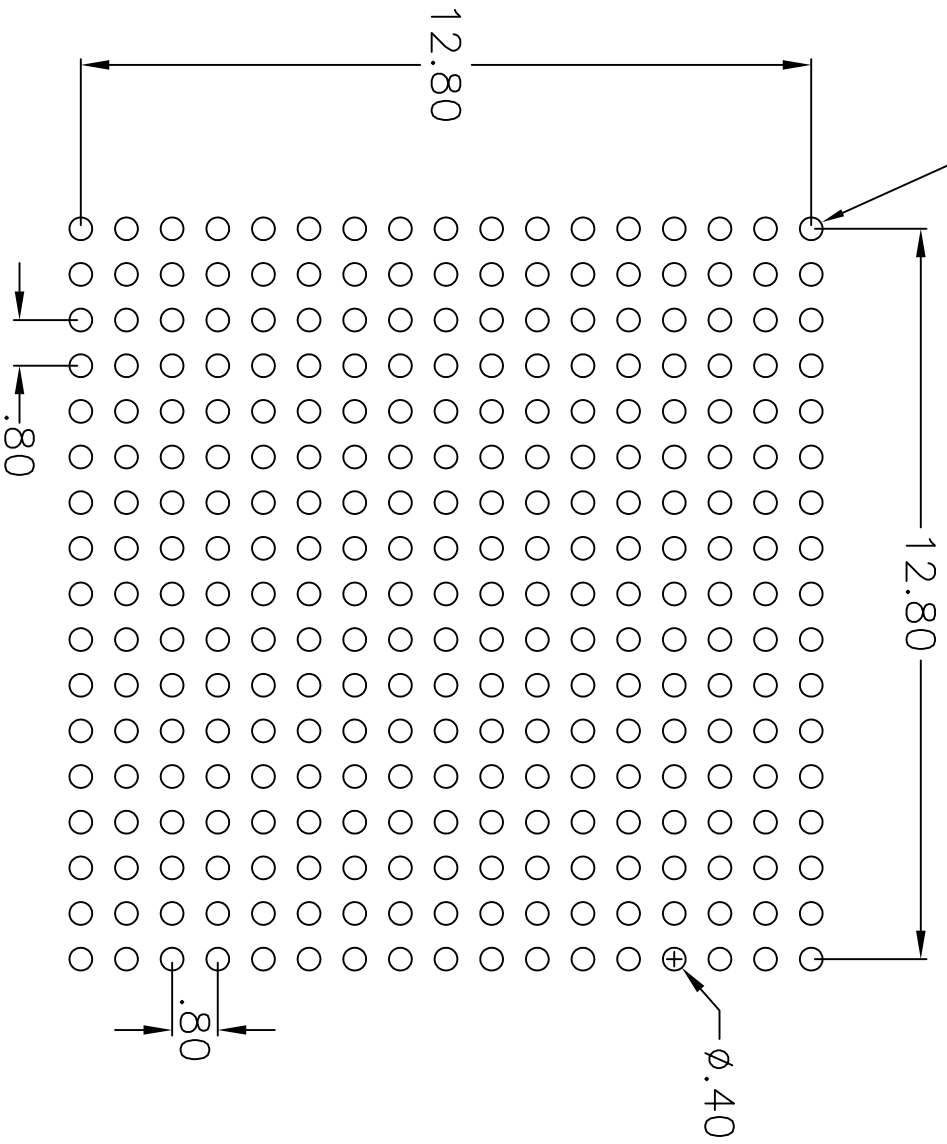
| SYMBOL             | JEDEC VARIATION |      |      | NOTE |
|--------------------|-----------------|------|------|------|
|                    | MO-205e-AG      | MIN  | NOM  |      |
| A                  | 1.30            | 1.40 | 1.70 |      |
| A1                 | .25             | .40  | .45  |      |
| D                  | 15.00 BSC       |      |      |      |
| E                  | 15.00 BSC       |      |      |      |
| M                  | 17 X 17         |      |      | 3    |
| N                  | 289             |      |      | 4    |
| e                  | .80 BSC         |      |      |      |
| b                  | .40             | .45  | .50  | 5    |
| CENTER BALL MATRIX | N/A             |      |      |      |

NOTES:

- 1 ALL DIMENSIONING AND TOLERANCING CONFORM TO ASME Y14.5M-1994
- 2 "e" REPRESENTS THE BASIC SOLDER BALL GRID PITCH
- 3 "M" REPRESENTS THE MAXIMUM SOLDER BALL MATRIX SIZE
- 4 "N" REPRESENTS THE BALLCOUNT NUMBER
- 5 DIMENSION "b" IS MEASURED AT THE MAXIMUM SOLDER BALL DIAMETER, PARALLEL TO PRIMARY DATUM  $\square$ -C-
- 6 SEATING PLANE AND PRIMARY DATUM  $\square$ -C- ARE DEFINED BY THE SPHERICAL CROWNS OF THE SOLDER BALLS
- 7 "A1" ID CORNER MUST BE IDENTIFIED BY CHAMFER, INK MARK, METALLIZED MARKING, INDENTATION OR OTHER FEATURE ON PACKAGE BODY
- 8 IF "A1" ID CORNER IS ON PACKAGE BODY, IT MUST BE LOCATED WITHIN THE ZONE INDICATED
- 9 ALL DIMENSIONS ARE IN MILLIMETERS

|                             |             |   |
|-----------------------------|-------------|---|
| TOLERANCES UNLESS SPECIFIED |             | <br>6024 SILVER CREEK<br>VALLEY ROAD, SAN JOSE,<br>CA 95138<br>PHONE: (408) 294-8200<br>FAX: (408) 284-3572<br>WWW.IDT.COM |
| DECIMAL                     | ±           |   |
| ANGULAR                     | ±           |   |
| XXX±                        |             |   |
| APPROVALS                   | DATE        | TITLE   |
| DRAWN CJK                   | 09/20/07    | BFG289 FPBGA PACKAGE OUTLINE  |
| CHECKED                     |             | 15.0 X 15.0 mm, 0.8mm PITCH   |
| SIZE                        | DRAWING No. | REV   |
| C                           | PSC-4219    | 03  |
| DO NOT SCALE DRAWING        |             | SHEET 2 OF 4  |

"A1" ID CORNER



RECOMMENDED LAND PATTERN DIMENSION

|                             |          |                                      |  |
|-----------------------------|----------|--------------------------------------|--|
| TOLERANCES UNLESS SPECIFIED |          | 6024 SILVER CREEK VALLEY ROAD        |  |
| DECIMAL                     | ANGULAR  | San Jose, CA 95138                   |  |
| XX±.10                      | ±1°      | PHONE: (408) 284-8200                |  |
| XXXX±.050                   |          | FAX: (408) 284-2775                  |  |
| XXXXX±.0500                 |          | www.IDT.com                          |  |
| APPROVALS                   | DATE     | TITLE BFG289 PACKAGE OUTLINE         |  |
| DRAWN /GALG                 | 09/09/12 | 15.0 x 15.0mm,<br>0.8 mm PITCH FPBGA |  |
| CHECKED                     |          | SIZE   DRAWING No.   REV             |  |
|                             |          | C   PSC-4219   03                    |  |
| DO NOT SCALE DRAWING        |          | SHEET 3 OF 4                         |  |

