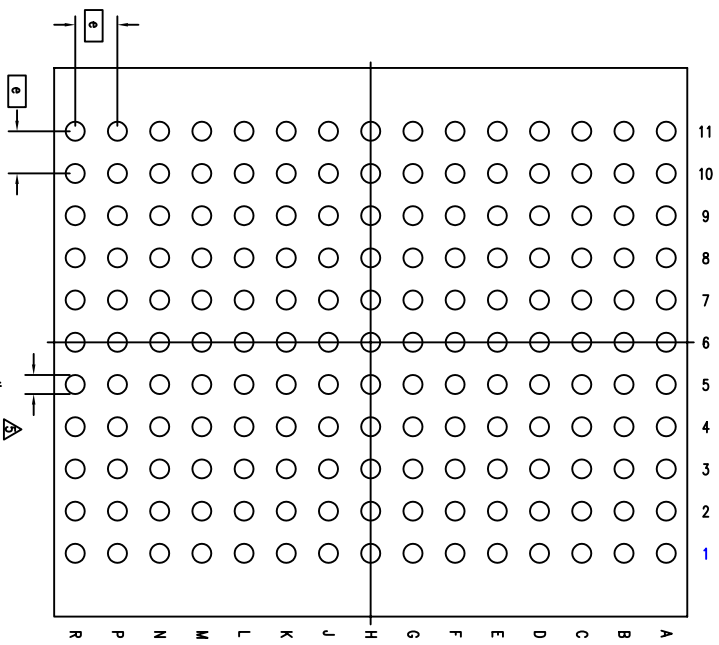
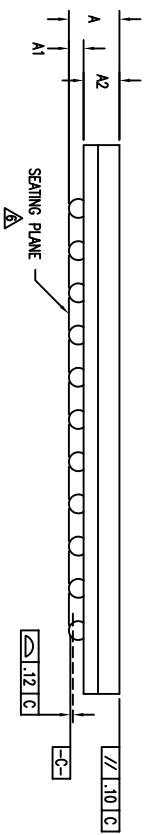
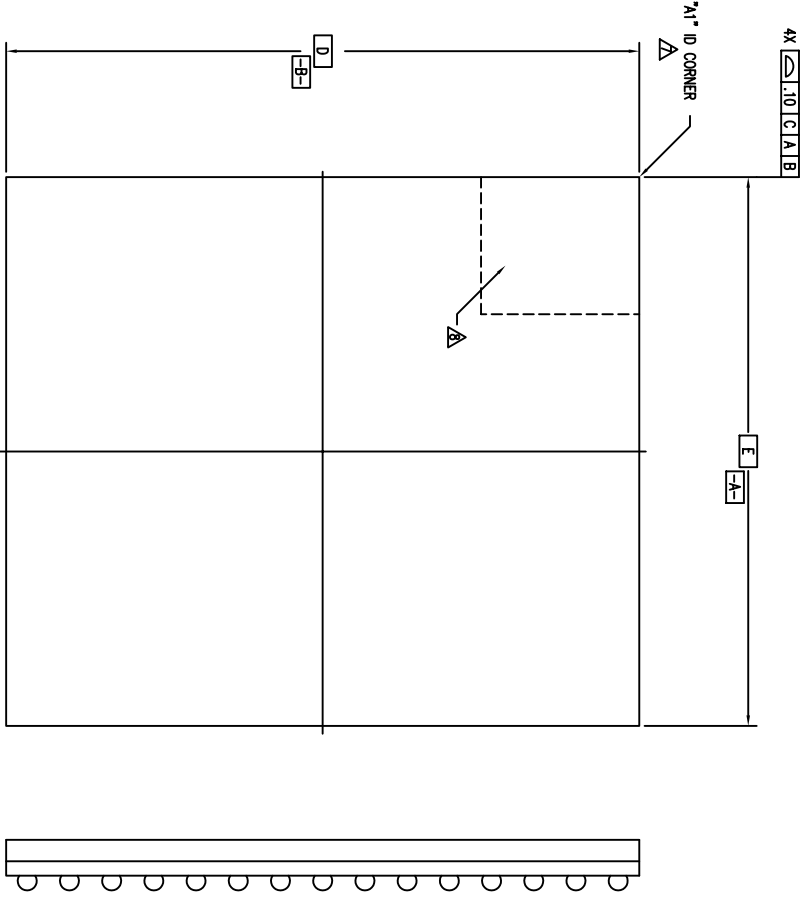
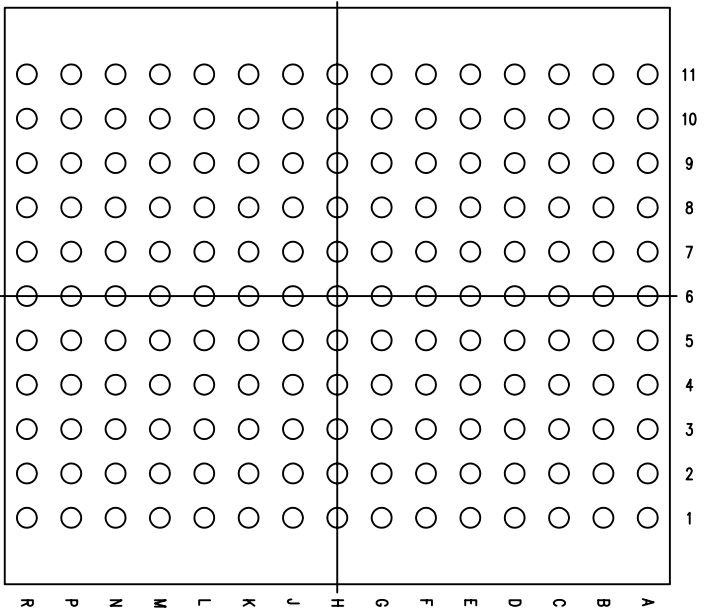


| REVISIONS | | | |
|-----------|---------------------------------|----------|----------|
| REV | DESCRIPTION | DATE | APPROVED |
| 00 | INITIAL RELEASE | 05/07/00 | TU WU |
| 01 | CHANGE A1 MEASUREMENT | 07/27/04 | TU WU |
| 02 | ADD 'GREAT' BOG NOMENCLATURE | 10/15/04 | TU WU |
| 03 | SEATING PLANE UPDATED TO 0.12MM | 08/03/05 | TU WU |
| 04 | COMBINE P0D & LAMP PATTERN | 05/23/13 | KS |



| | | | |
|-----------------------------|----------|-------------------------------|--------------|
| TOLERANCES UNLESS SPECIFIED | | 6024 SILVER CREEK VALLEY ROAD | |
| DECIMAL | ANGULAR | SAN JOSE CA 95138 | |
| XX.X .1 | ±1° | PHONE: (408) 284-8200 | |
| XXX.X .05 | | FAX: (408) 284-8591 | |
| XXXX.X .030 | | | |
| APPROVALS | DATE | TITLE | WWW.IDT.COM |
| DRAWN 292 | 05/07/00 | BQ PACKAGE OUTLINE | |
| CHECKED | | 13.0 X 15.0 mm BODY | |
| | | FPRGA | |
| | | SIZE DRAWING No. | REV |
| | | C | 04 |
| | | PSC-4086 | |
| | | DO NOT SCALE DRAWING | SHEET 1 OF 3 |




(165 BALL)

| SYMBOL | JEDEC VARIATION | | | NOTE |
|--------------------|--------------------|-----|------|------|
| | NOT YET REGISTERED | MIN | NOM | |
| A | - | - | 1.20 | |
| A1 | .25 | .30 | .35 | |
| A2 | .78 | .85 | .92 | |
| D | 15.00 BSC | | | |
| E | 13.00 BSC | | | |
| M | 11 X 15 | | | 3 |
| N | 165 | | | 4 |
| e | 1.00 BSC | | | |
| b | .35 | .45 | .50 | 5 |
| CENTER BALL MATRIX | N/A | | | |

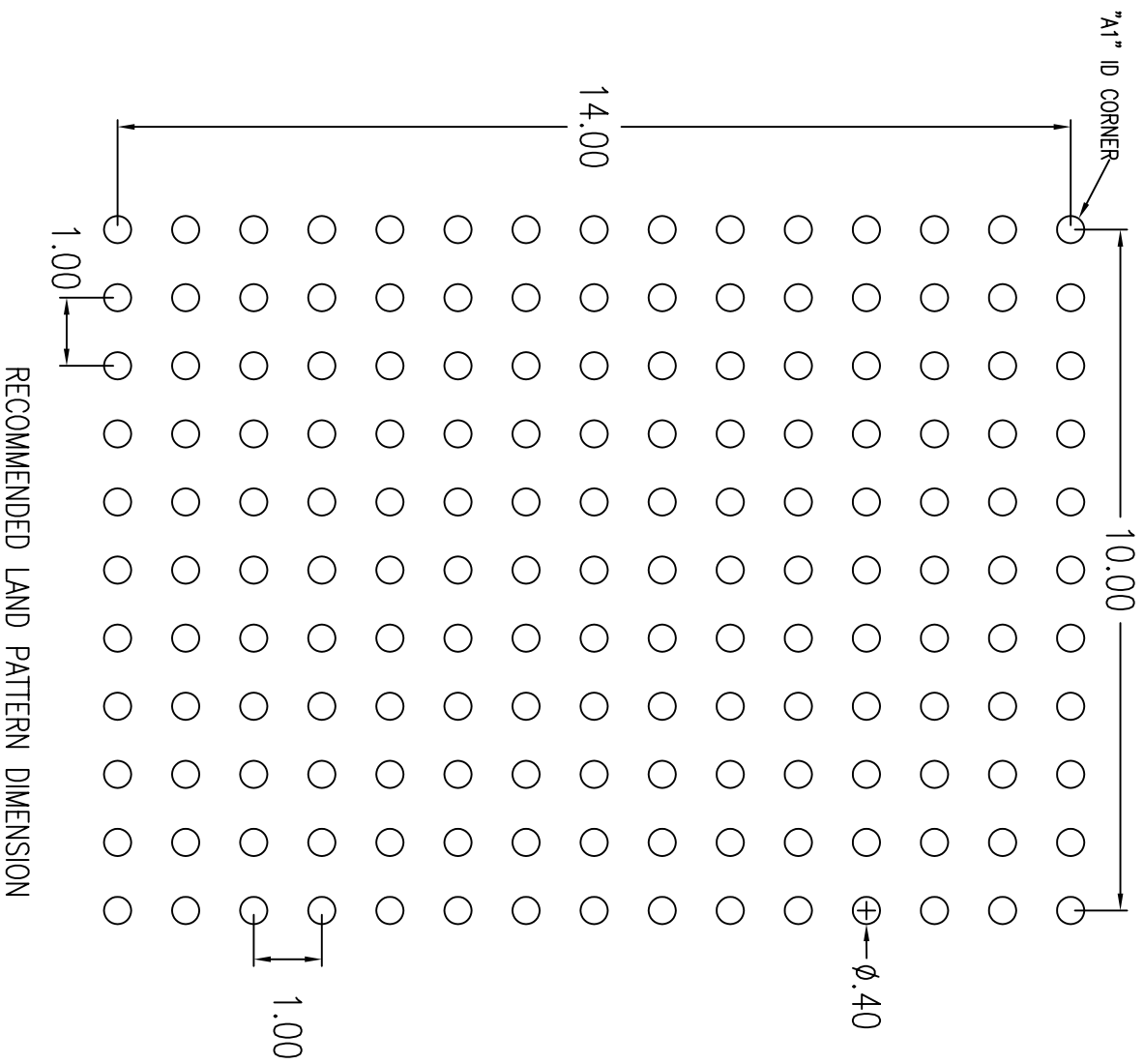
| REVISIONS | | | |
|-----------|---------------------------------|----------|----------|
| REV | DESCRIPTION | DATE | APPROVED |
| 00 | INITIAL RELEASE | 05/01/00 | TU WI |
| 01 | CHANGE A1 MEASUREMENT | 07/27/04 | TU WI |
| 02 | ADD 'GREED' BSC NOMENCLATURE | 10/15/04 | TU WI |
| 03 | SEATING PLANE UPDATED TO 0.12MM | 08/03/05 | TU WI |
| 04 | COMBINE POD & LAND PATTERN | 05/23/13 | KS |


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 BALLOUNT NUMBER
- 5 DIMENSION "b" IS MEASURED AT THE MAXIMUM SOLDER BALL DIAMETER, PARALLEL TO PRIMARY DATUM $\boxed{-C-}$
- 6 SEATING PLANE AND PRIMARY DATUM $\boxed{-C-}$ 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 DECIMAL ANGULAR X \pm .1 \pm 1° XXX \pm .05 XXX \pm .030 | |  www.IDT.com 6024 SILVER CREEK VALLEY ROAD SAN JOSE CA 95138 PHONE: (408) 284-8200 FAX: (408) 284-8591 |
| APPROVALS DRAWN 99* CHECKED | DATE 05/01/00 TITLE BQ PACKAGE OUTLINE 13.0 X 15.0 mm BODY FBPGA | |
| SIZE C DRAWING No. PSC-4086 | DO NOT SCALE DRAWING | REV 04 SHEET 2 OF 3 |

| REVISIONS | | | |
|-----------|---------------------------------|----------|----------|
| REV | DESCRIPTION | DATE | APPROVED |
| 00 | INITIAL RELEASE | 05/01/00 | TU VU |
| 01 | CHANGE A1 MEASUREMENT | 07/27/04 | TU VU |
| 02 | ADD "GREEN" BQG NOMENCLATURE | 10/15/04 | TU VU |
| 03 | SEATING PLANE UPDATED TO 0.12MM | 08/03/05 | TU VU |
| 04 | COMBINE POD & LAND PATTERN | 05/23/13 | KS |



| | | |
|-----------------------------|-------------|---|
| TOLERANCES UNLESS SPECIFIED | |  8024 SILVER CREEK VALLEY ROAD SAN JOSE CA 95138 PHONE: (408) 284-8200 FAX: (408) 284-8591 |
| DECIMAL | ANGULAR | |
| XX.X | .1 | WWW.IDT.COM |
| XXXX | .030 | |
| APPROVALS | DATE | TITLE |
| DRAWN 06/16 | 06/06/12 | BQ PACKAGE OUTLINE |
| CHECKED | | 13.0 X 15.0 mm BODY |
| | | FBPGA |
| SIZE | DRAWING No. | REV |
| C | PSC-4086 | 04 |
| DO NOT SCALE DRAWING | | SHEET 3 OF 3 |