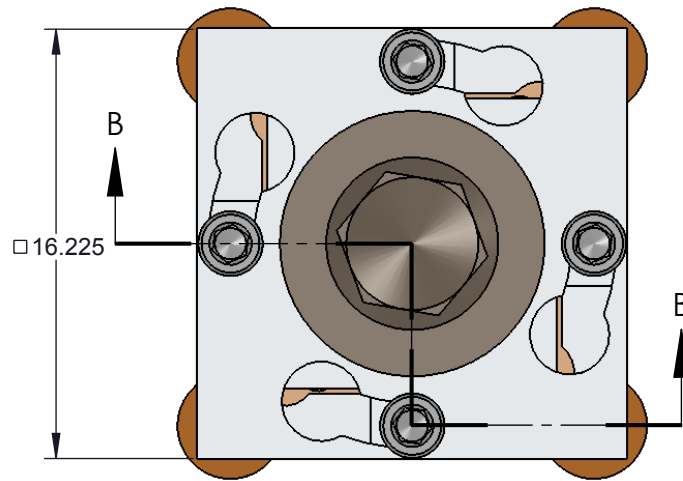


# SM BGA SOCKET - direct mount, solderless

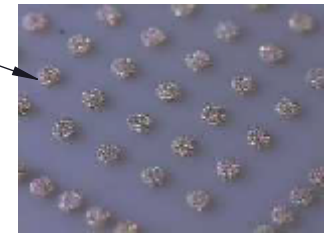
## Features

- Directly mounts to target PCB (needs tooling holes) with hardware.
- Wide temperature range (-55C to +155C).
- High current capability (up to 4 A).
- Excellent signal integrity at high frequencies.
- Low and stable contact resistance for reliable production yield.
- Highly compliant to accommodate wide co-planarity variations.
- Automated probe manufacturing enables low cost and short lead time.

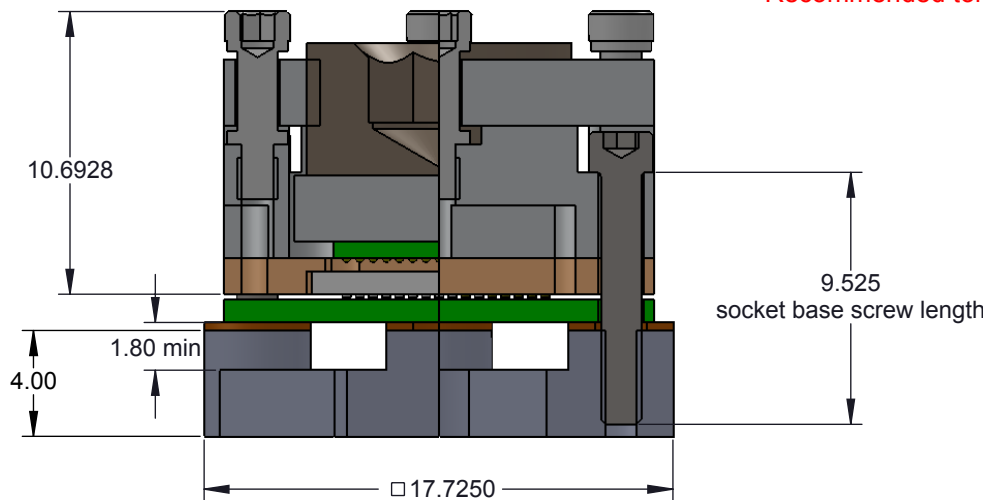


TOP VIEW

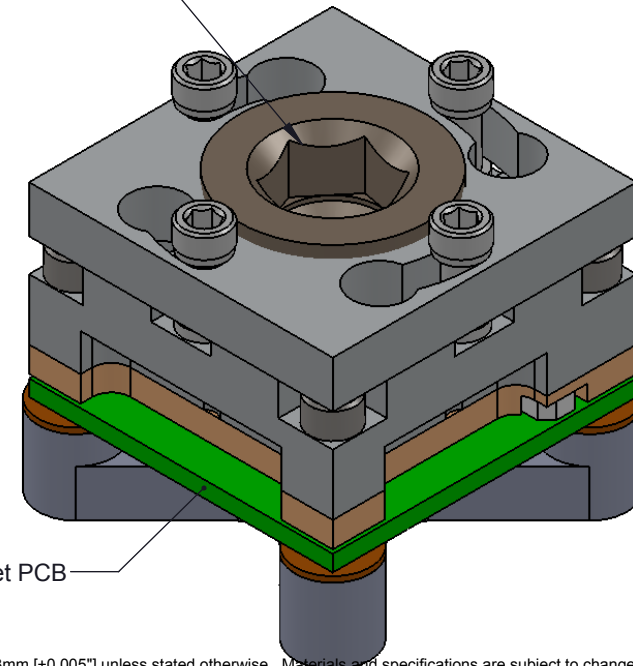
Silver ball matrix elastomer



Recommended torque = 4-5 in-lbs




SECTION B-B



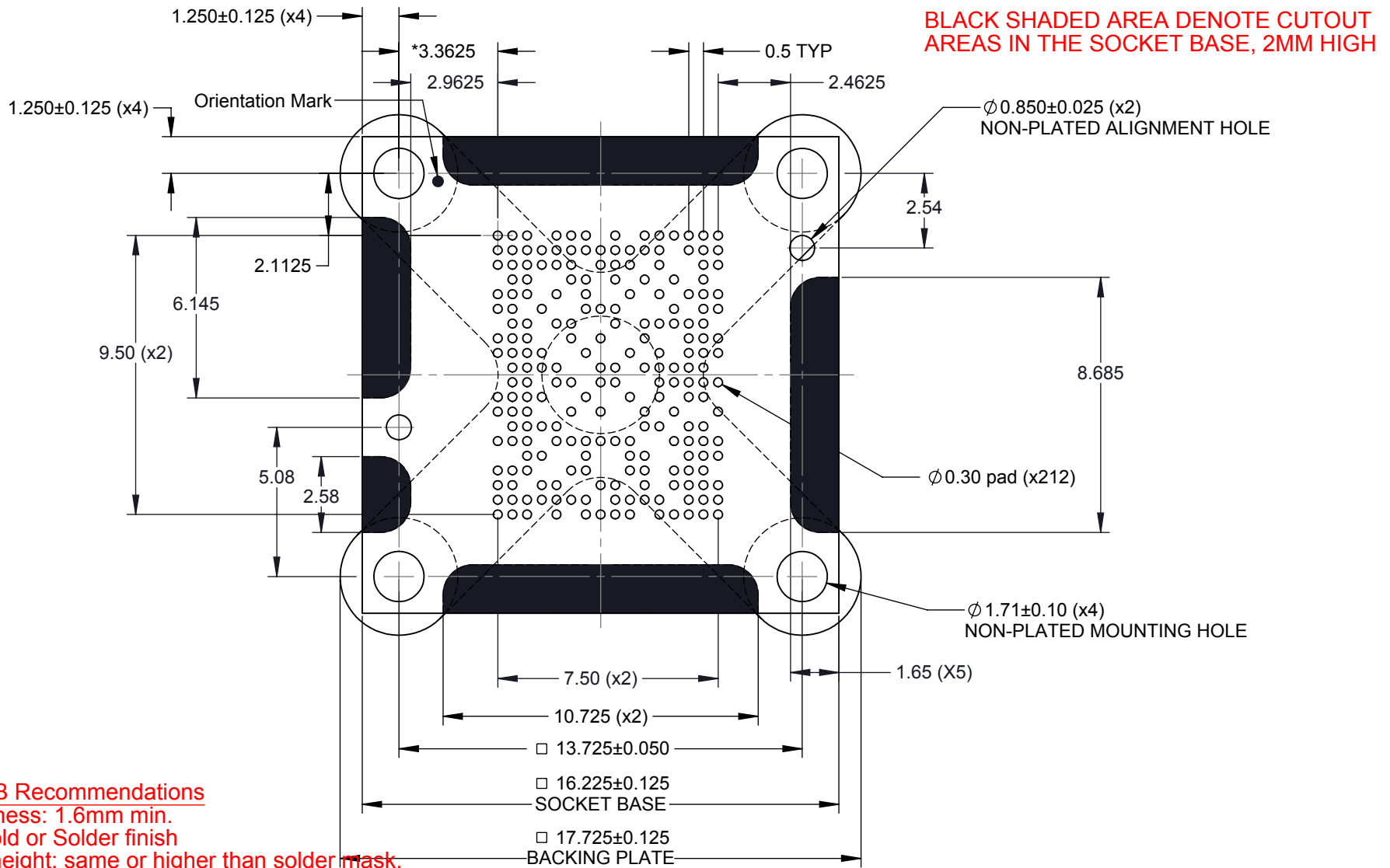
## Description: Socket

Primary dimension units are millimeters, Secondary dimension units are [inches], Weight is in grams.

Tolerances: Hole diameters  $\pm 0.03\text{mm}$  [ $\pm 0.001''$ ], Pitches (from true position)  $\pm 0.025\text{mm}$  [ $\pm 0.001''$ ], substrate thickness tolerance  $\pm 10\%$ , all other tolerances  $\pm 0.13\text{mm}$  [ $\pm 0.005''$ ] unless stated otherwise. Materials and specifications are subject to change without notice.

|  |   |                    |                |        |
|--|---|--------------------|----------------|--------|
|  <p><b>SM-BGA-9016 Drawing</b><br/>Ironwood Electronics, Inc.<br/>Tele: (800) 404-0204<br/>www.ironwoodelectronics.com</p> | <p>Material: N/A<br/>Finish: N/A<br/>Weight: 7.16</p> | STATUS: Released   | SHEET: 1 OF 4  | REV. A |
|  |   | DRAWN BY: S. Huang | SCALE: 3.5:1   |        |
|  |   | FILE: SM-BGA-9016  | DATE: 8/2/2012 |        |

**\*Note: BGA pattern is shifted by .25 to right with respect to the mounting holes.**



**Target PCB Recommendations**

Total thickness: 1.6mm min.


Plating: Gold or Solder finish

PCB Pad height: same or higher than solder mask.

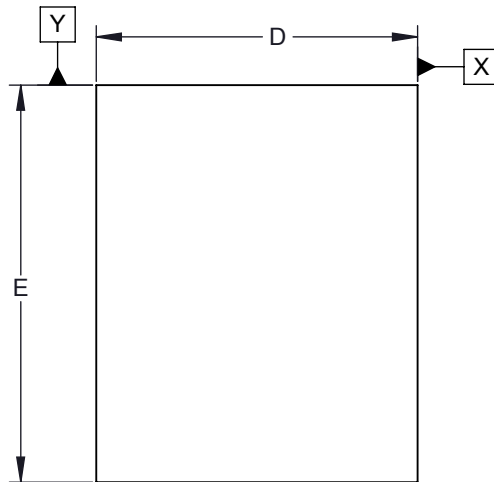
**Description: Recommended PCB layout**

Primary dimension units are millimeters, Secondary dimension units are [inches], Weight is in grams.

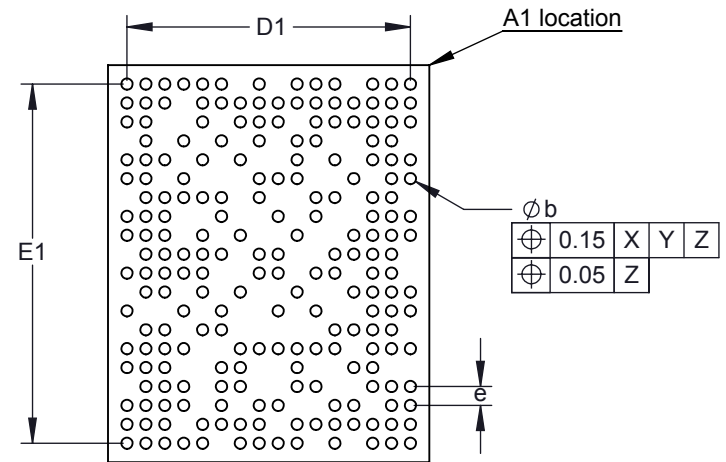
Tolerances: Hole diameters ±0.03mm [±0.001"], Pitches (from true position) ±0.025mm [±0.001"], substrate thickness tolerance ±10%, all other tolerances ±0.13mm [±0.005"] unless stated otherwise. Materials and specifications are subject to change without notice.

|   |   |                    |                |        |
|---|---|--------------------|----------------|--------|
|  <p>Ironwood Electronics, Inc.<br/>Tele: (800) 404-0204<br/>www.ironwoodelectronics.com</p> | <p>Material: N/A<br/>Finish: N/A<br/>Weight: 7.16</p> | STATUS: Released   | SHEET: 2 OF 4  | REV. A |
|   |   | DRAWN BY: S. Huang | SCALE: 5:1     |        |
|   |   | FILE: SM-BGA-9016  | DATE: 8/2/2012 |        |

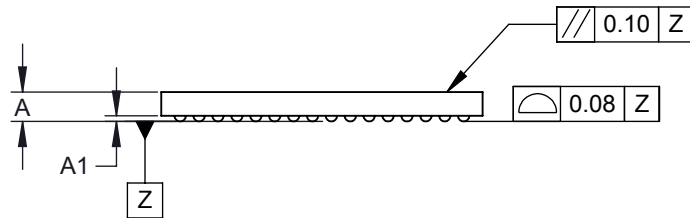
# Ironwood Package Code: BGA212A



**TOP VIEW**



**BOTTOM VIEW**



**SIDE VIEW**

1. Dimensions are in millimeters.
2. Interpret dimensions and tolerances per ASME Y14.5M-1994.
3. Dimension b is measured at the maximum solder ball diameter, parallel to datum plane Z.
4. Datum Z (seating plane) is defined by the spherical crowns of the solder balls.
5. Parallelism measurement shall exclude any effect of mark on top surface of package.


| DIM | MIN       | MAX  |
|-----|-----------|------|
| A   | 0.78      | 0.92 |
| A1  | 0.17      | 0.27 |
| b   | 0.25      | 0.35 |
| D   | 8.50 BSC  |      |
| E   | 10.50 BSC |      |
| D1  | 7.5       |      |
| E1  | 9.5       |      |
| e   | 0.5 BSC   |      |

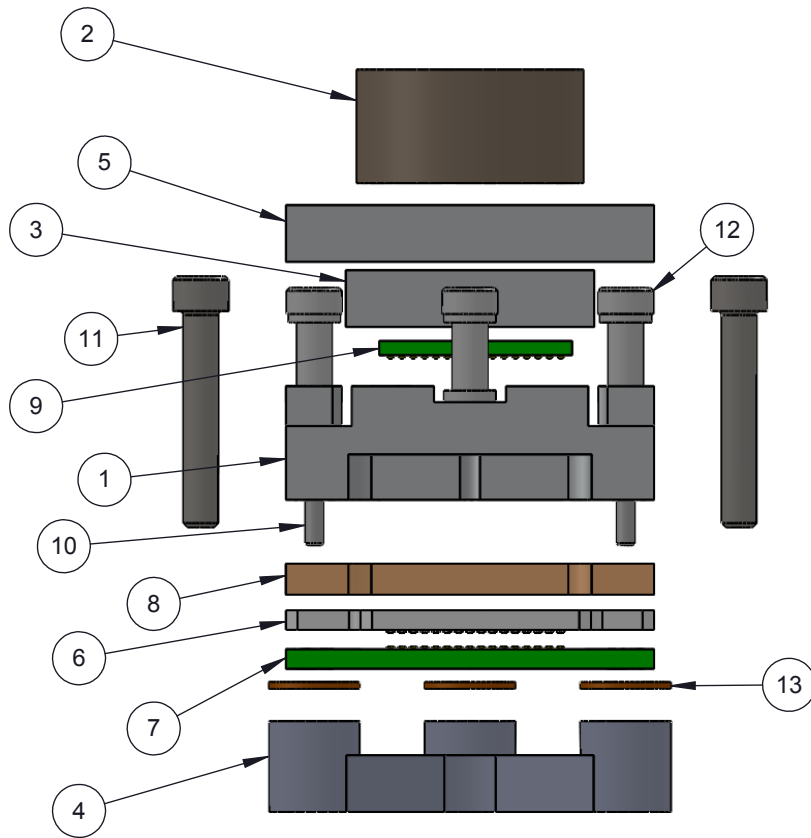
16 x 20 array

## Description: BGA

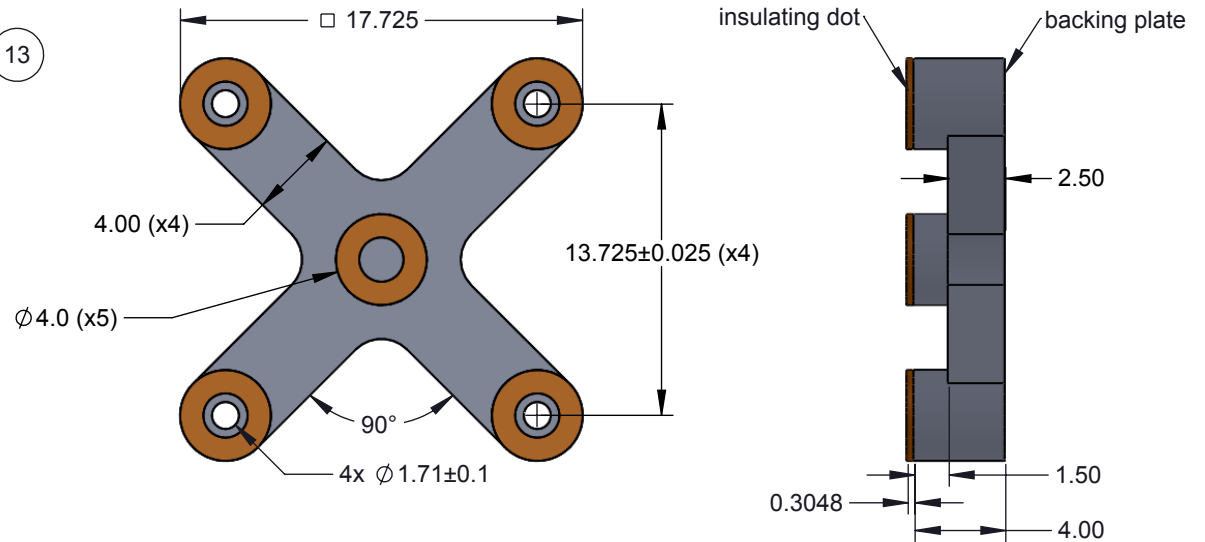
Primary dimension units are millimeters, Secondary dimension units are [inches], Weight is in grams.

Tolerances: Hole diameters  $\pm 0.03\text{mm}$  [ $\pm 0.001^{\circ}$ ], Pitches (from true position)  $\pm 0.025\text{mm}$  [ $\pm 0.001^{\circ}$ ], substrate thickness tolerance  $\pm 10\%$ , all other tolerances  $\pm 0.13\text{mm}$  [ $\pm 0.005^{\circ}$ ] unless stated otherwise. Materials and specifications are subject to change without notice.

|  |  |                    |                |        |
|--|--|--------------------|----------------|--------|
|  Ironwood Electronics, Inc.<br>Tele: (800) 404-0204<br>www.ironwoodelectronics.com | Material: N/A<br>Finish: N/A<br>Weight: 7.16 | STATUS: Released   | SHEET: 3 OF 4  | REV. A |
|  |  | DRAWN BY: S. Huang | SCALE: 5:1     |        |
|  |  | FILE: SM-BGA-9016  | DATE: 8/2/2012 |        |



| ITEM NO. | DESCRIPTION   | Material                |
|----------|---|-------------------------|
| 1        | Custom cutout Socket Base 11mm                          | 7075-T6 Aluminum Alloy  |
| 2        | Compression Screw M10                                   | 7075-T6 Alumium Alloy   |
| 3        | Compression Plate 11x11mm IC 2.5mm thick                | 7075-T6 Aluminum Alloy  |
| 4        | "X" shaped Backing Plate for 11mm chip                  | 7075-T6 (SN)            |
| 5        | Socket Lid Swivel 11mm IC                               | 7075-T6 Aluminum Alloy  |
| 6        | SM interposer for 16x20 0.5mm pitch array               | Silmat/Cirlex           |
| 7        | Customer's target PCB                                   | FR4 High temp           |
| 8        | SM IC Guide for 8.5x10.5mm IC                           | Ultem 1000              |
| 9        | Customer's IC 8.5x10.5mm, 16x20 0.5mm pitch BGA212      | FR4 High temp           |
| 10       | Dowel Pin, 1/32" x 3/16", SS                            | Chrome Stainless Steel  |
| 11       | #0-80 X .375 LG, SOC HD CAP SCREW, ALLOY STL, BLK OXIDE | Alloy Steel             |
| 12       | #0-80 Shoulder Screw, 0.062" thread length              | Stainless Steel (303)   |
| 13       | Insulating washer, 4mm OD.                              | Kapton Polyimide/Cirlex |




**Description: Skt, Insulation Plate Det**

Primary dimension units are millimeters, Secondary dimension units are [inches], Weight is in grams.

Tolerances: Hole diameters ±0.03mm [±0.001"], Pitches (from true position) ±0.025mm [±0.001"], substrate thickness tolerance ±10%, all other tolerances ±0.13mm [±0.005"] unless stated otherwise. Materials and specifications are subject to change without notice.

**Insulation dot and Backing plate specification**

|  |   |                    |                |        |
|--|---|--------------------|----------------|--------|
|  <p><b>SM-BGA-9016 Drawing</b><br/>Ironwood Electronics, Inc.<br/>Tele: (800) 404-0204<br/>www.ironwoodelectronics.com</p> | <p>Material: N/A<br/>Finish: N/A<br/>Weight: 7.16</p> | STATUS: Released   | SHEET: 4 OF 4  | REV. A |
|  |   | DRAWN BY: S. Huang | SCALE: 3:1     |        |
|  |   | FILE: SM-BGA-9016  | DATE: 8/2/2012 |        |