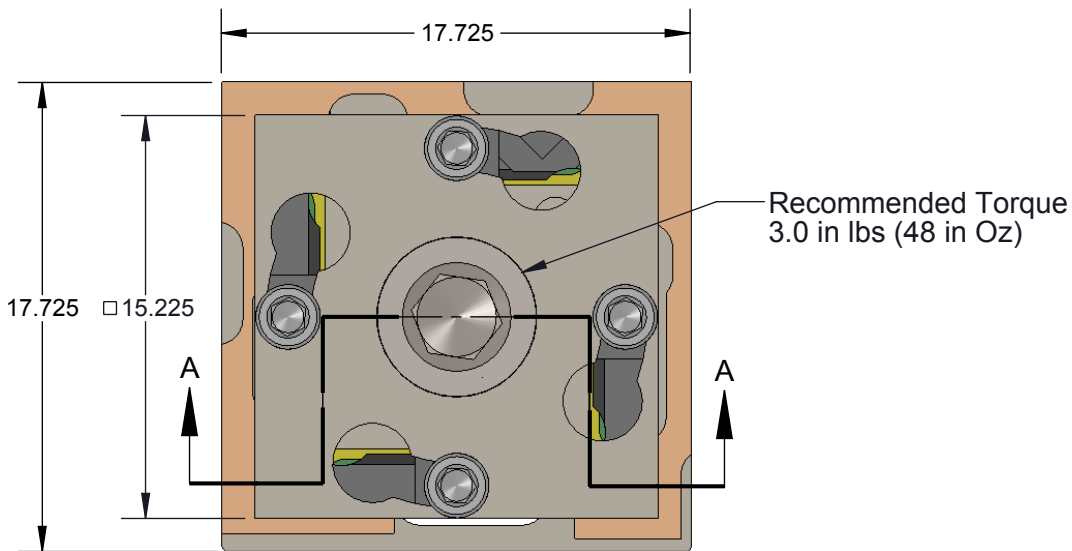


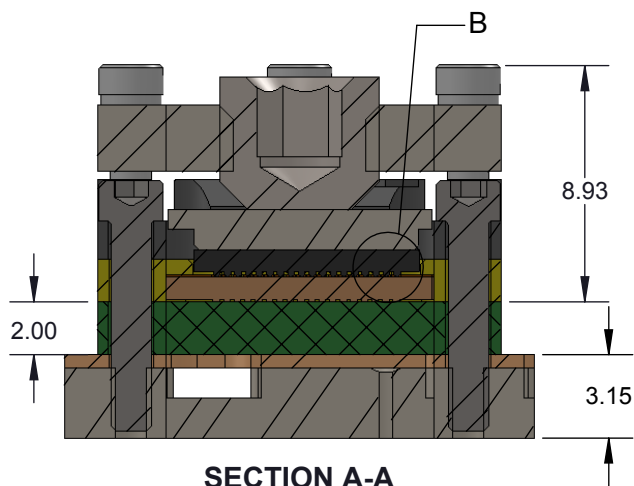
# Silver Ball Matrix BGA Socket

## Features

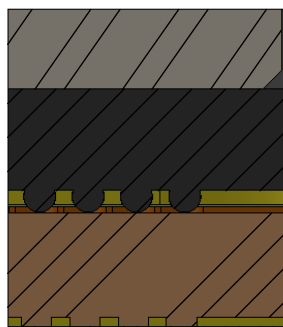
- Wide temperature range (-55C to +150C).
- Current capability is 4A per pin.
- Over 40GHz bandwidth @-1dB for edge pins.
- Low and stable contact resistance for reliable production yield.
- Highly compliant to accommodate wide co-planarity variations.
- Capacitance under 0.15pF



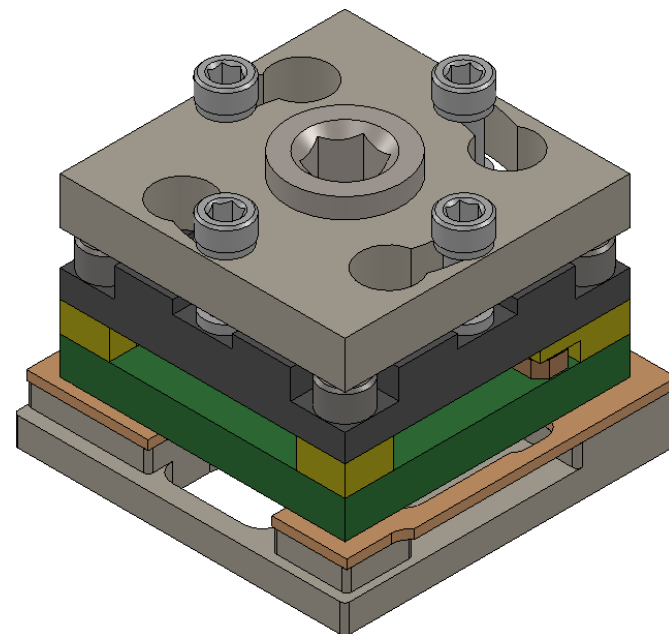
TOP VIEW



SECTION A-A




DETAIL B  
SCALE 16 : 1



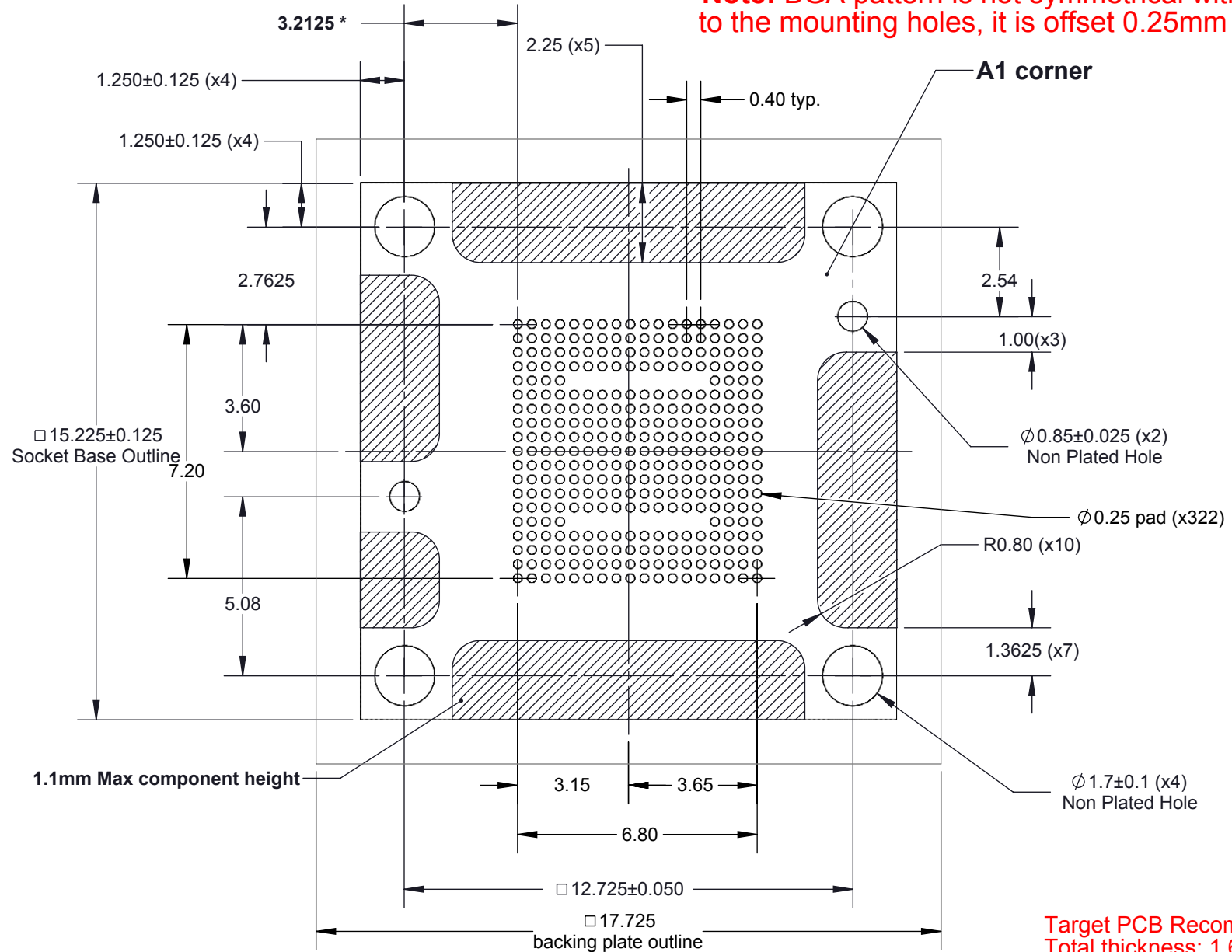
## Description: SM-BGA 8.5x8.5mm 0.4mm pitch 19x18 array

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.

 <b>SM-BGA-9036 Drawing</b> Ironwood Electronics, Inc. Tele: (800) 404-0204 www.ironwoodelectronics.com	Material: Material <not specified> Finish: Weight: 6.56	STATUS: Released ENG: S. Faiz FILE: SM-BGA-9036 Dwg	SHEET: 1 OF 5 DRAWN BY: M. Raske DATE: 8-14-13	REV. B SCALE: 3.5:1


**\*Note:** BGA pattern is not symmetrical with respect to the mounting holes, it is offset 0.25mm

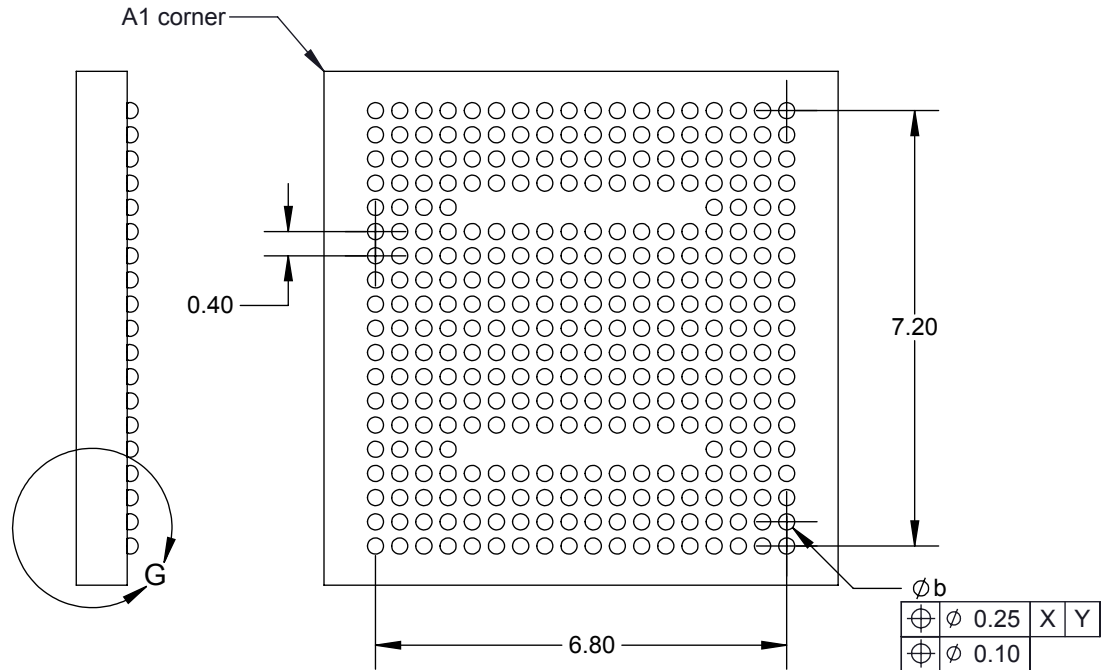
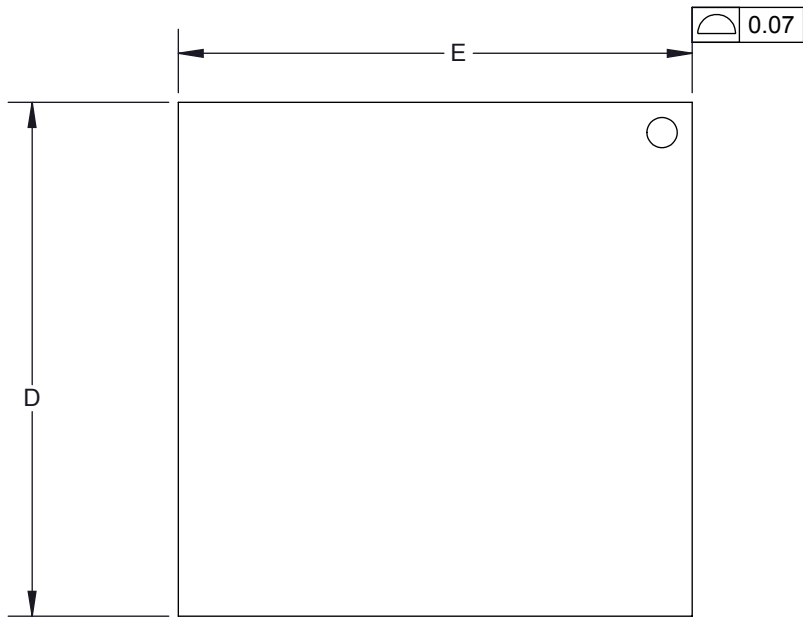


**Target PCB Recommendations**  
 Total thickness: 1.6mm min.  
 Plating: Gold or Solder finish  
 PCB Pad height: same or higher than solder mask

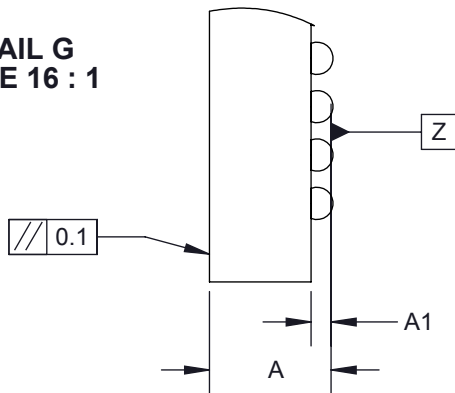
**Description: Recommended PCB Layout**

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.

 <b>SM-BGA-9036 Drawing</b> Ironwood Electronics, Inc. Tele: (800) 404-0204 www.ironwoodelectronics.com	Material: Material <not specified> Finish: Weight: 6.56	STATUS: Released	SHEET: 2 OF 5	REV. B
		ENG: S. Faiz	DRAWN BY: M. Raske	SCALE: 6:1
		FILE: SM-BGA-9036 Dwg	DATE: 8-14-13	



DETAIL G  
SCALE 16 : 1




DIM	Minimum	Maximum
A		1.00
A1	0.13	0.23
b		0.30
D	8.5 BSC	
E	8.5 BSC	
e	0.4 BSC	
ARRAY	18x19	
PIN COUNT	322	

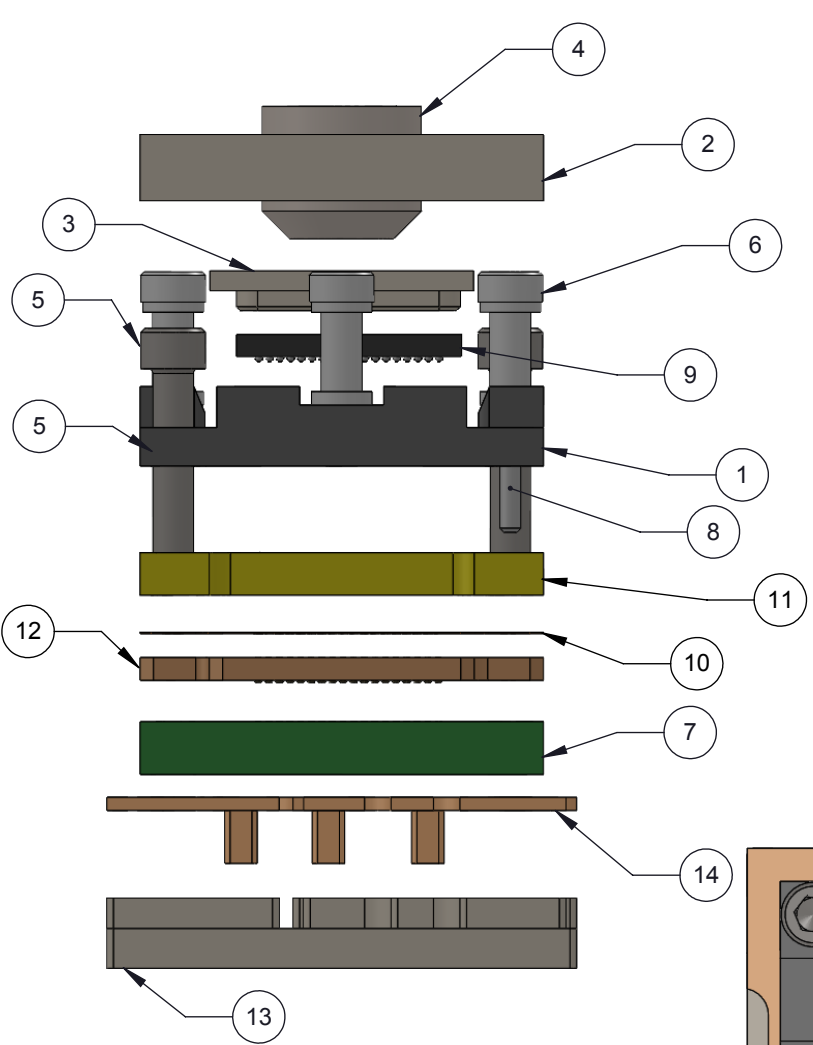
1. Dimensions are in millimeters.
2. Interpret dimensions and tolerances per ASME Y14.5M-1994.
3. Dimension b is measured at the maximum solder ball diameter, parallel to datum plane Z.
4. Datum Z (seating plane) is defined by the spherical crowns of the solder balls.
5. Parallelism measurement shall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

**Description: Compatible BGA**

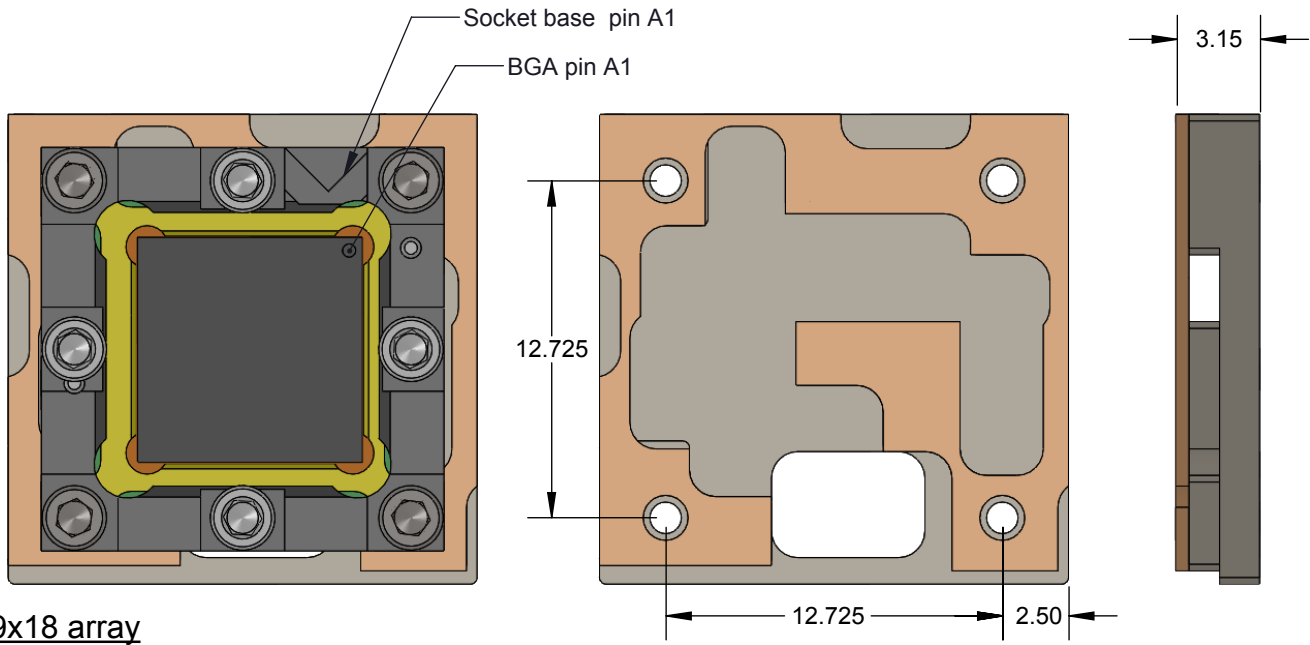
Primary dimension units are millimeters, Secondary dimension units are [inches], Weight is in grams.

Tolerances: Hole diameters  $\pm 0.03\text{mm}$  [ $\pm 0.001"$ ], 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-9036 Drawing</b> Ironwood Electronics, Inc. Tele: (800) 404-0204 www.ironwoodelectronics.com</p>	<p>Material: Material &lt;not specified&gt; Finish: Weight: 6.56</p>	STATUS: Released	SHEET: 3 OF 5	REV. B
		ENG: S. Faiz	DRAWN BY: M. Raske	SCALE: 8:1
		FILE: SM-BGA-9036 Dwg	DATE: 8-14-13	




ITEM NO.	Description	Material
1	GHz Socket Base 10mm IC 3mm Thk	7075-T6 Aluminum Alloy
2	Socket Lid	7075-T6 Aluminum Alloy
3	Compression Plate 9.95mm sq (8.45mm sq. protrusion) x 1.5mm	7075-T6 Aluminum Alloy
4	Compression Screw M6x1	Stainless Steel (18-8)
5	#0-80 X .313 LG, SOC HD CAP SCREW, ALLOY STL, BLK OXIDE	Alloy Steel
6	#0-80 Shoulder Screw, 0.062" thread length	Stainless Steel (303)
7	PCB 8.5x8.5mm 0.4mm pitch 18x19 array	FR4
8	Dowel Pin, 1/32" x 3/16", SS	Chrome Stainless Steel
9	BGA CHIP 8.5x8.5mm 0.4mm pitch 18x19 array	Material <not specified>
10	BGA ball guide 8.5x8.5mm 0.4mm pitch 18x19 array	Kapton Polyimide/Cirlex
11	IC guide for 8.5mmx8.5mm IC	Torlon 4203
12	SM interposer	SM elastomer
13	Custom backing plate	7075-T6 Aluminum Alloy
14	Custom insulation plate	Ultem 1000

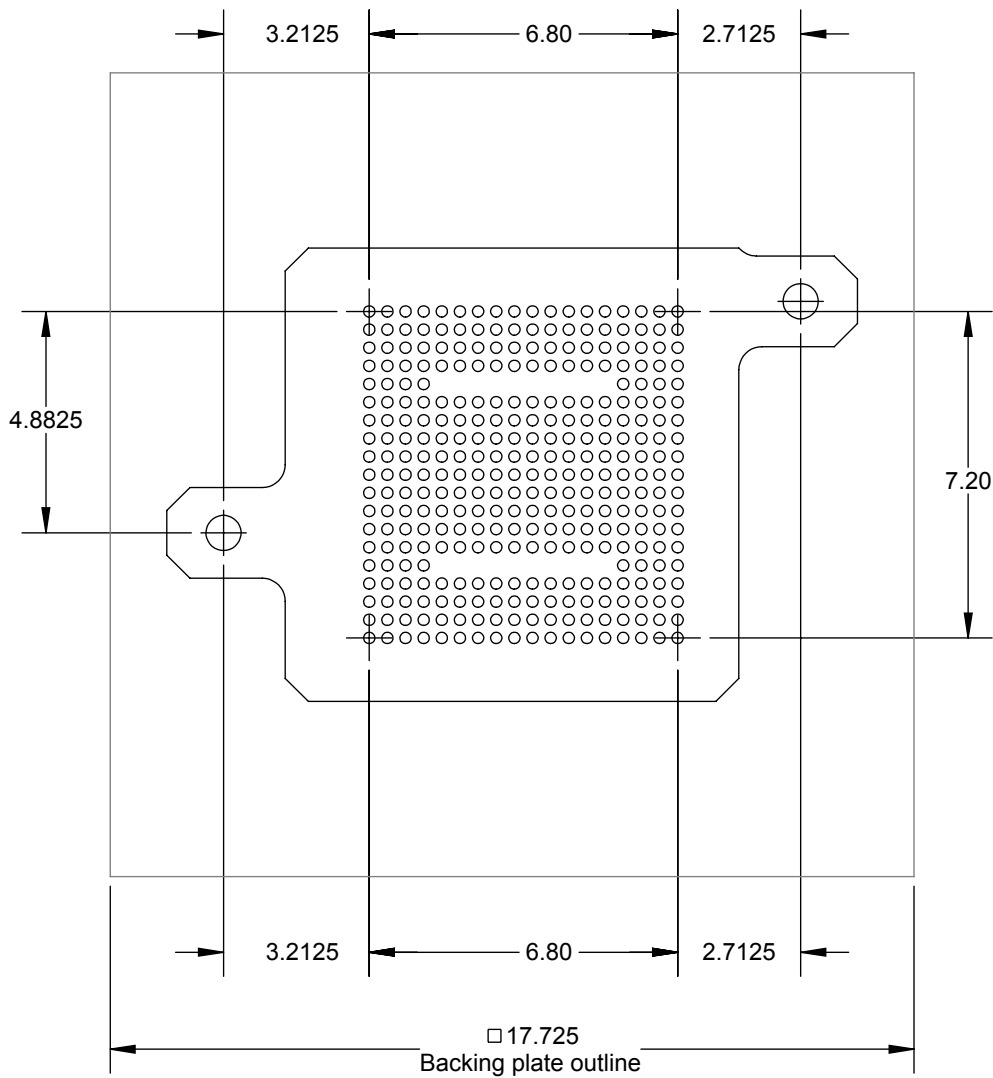


**Description: SM-BGA 8.5x8.5mm 0.4mm pitch 19x18 array**

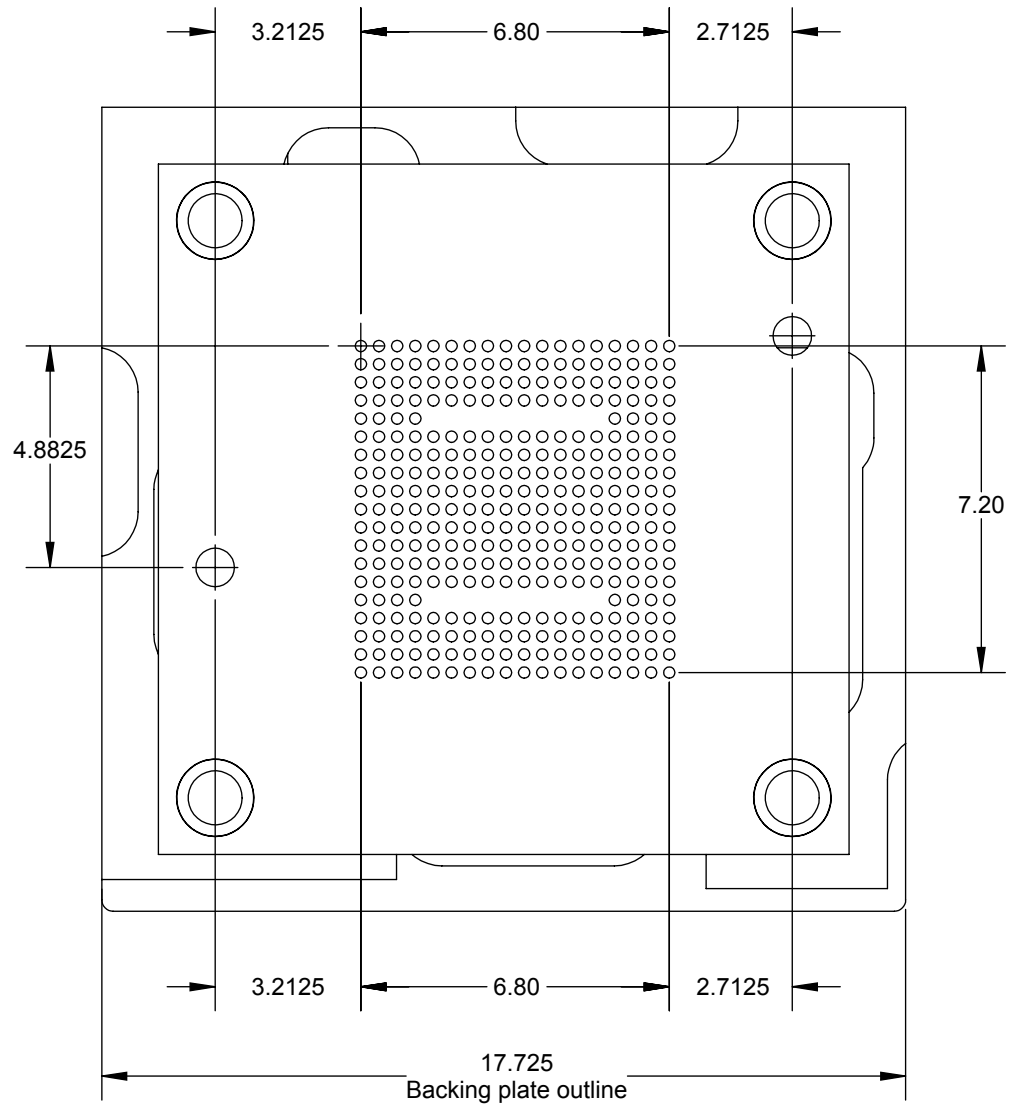
Primary dimension units are millimeters, Secondary dimension units are [inches], Weight is in grams.  
 Tolerances: Hole diameters ±0.03mm [±0.001"], Pitches (from true position) ±0.025mm [±0.001"], substrate thickness tolerance ±10%, all other tolerances ±0.13mm [±0.005"] unless stated otherwise. Materials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

**Insulation plate - Backing plate stack-up**

 <b>SM-BGA-9036 Drawing</b> Ironwood Electronics, Inc. Tele: (800) 404-0204 www.ironwoodelectronics.com	Material: Material <not specified> Finish: Weight: 6.56	STATUS: Released ENG: S. Faiz FILE: SM-BGA-9036 Dwg	SHEET: 4 OF 5 DRAWN BY: M. Raske DATE: 8-14-13	REV. B SCALE: 3.5:1
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SM elastomer layout (Top View)




Target PCB layout (Top View)

**Description: SM-BGA 8.5x8.5mm 0.4mm pitch 19x18 array**

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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.

Rev	Date	Initials	Description
A	08/14/13	MR	Original
B	01/15/15	DH	Chngaed IC Guide material from Ultem to Torlon

 <b>SM-BGA-9036 Drawing</b> Ironwood Electronics, Inc. Tele: (800) 404-0204 www.ironwoodelectronics.com	Material: Material <not specified> Finish: Weight: 6.56	STATUS: Released	SHEET: 5 OF 5	REV. B
		ENG: S. Faiz	DRAWN BY: M. Raske	SCALE: 6:1
		FILE: SM-BGA-9036 Dwg	DATE: 8-14-13	