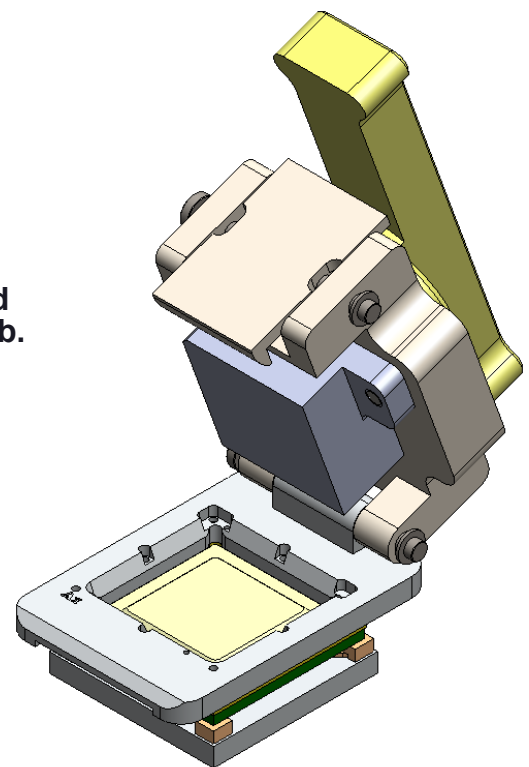
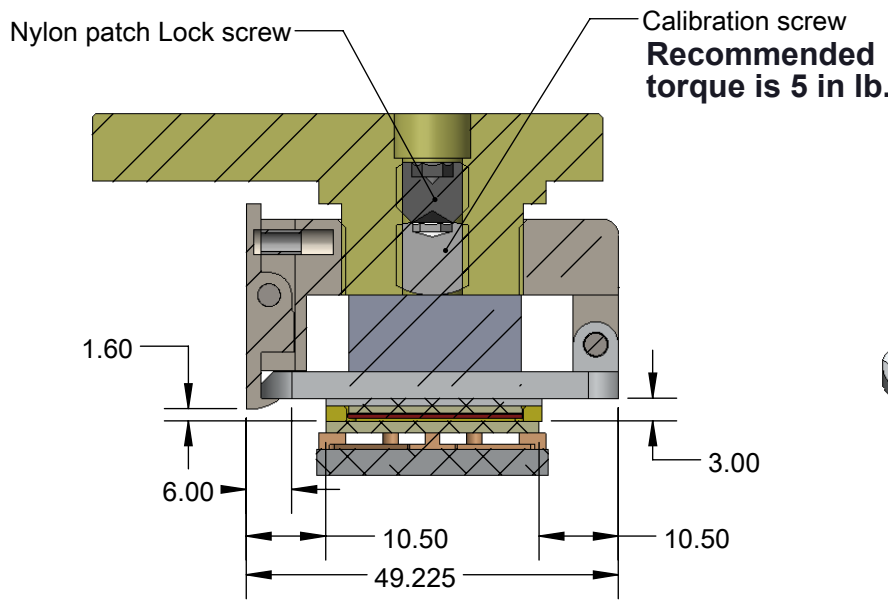
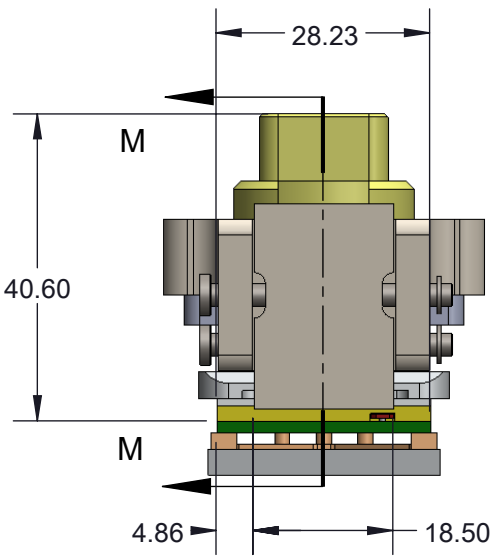
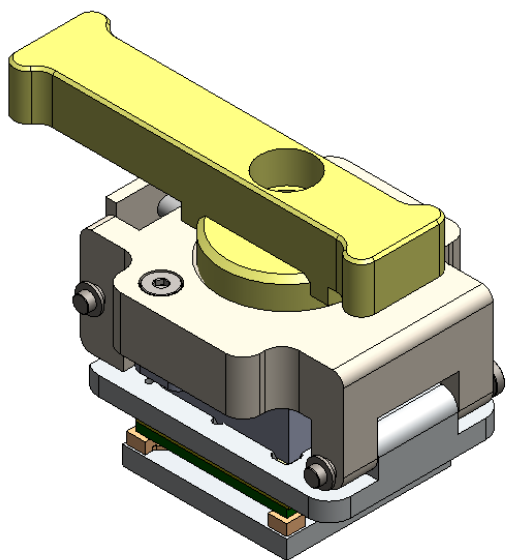
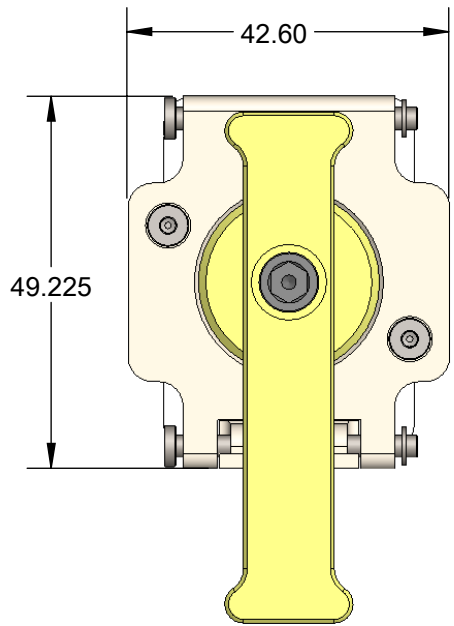


Silver Ball Matrix Socket

Features


- Wide temperature range (-55C to +150C).
- Current capability is 4A per pin at 14C temperature rise.
- Excellent signal integrity at high frequencies.
- Self inductance under 0.21nH
- Capacitance under 0.15pF
- Over 40GHz bandwidth @-1dB for edge pins



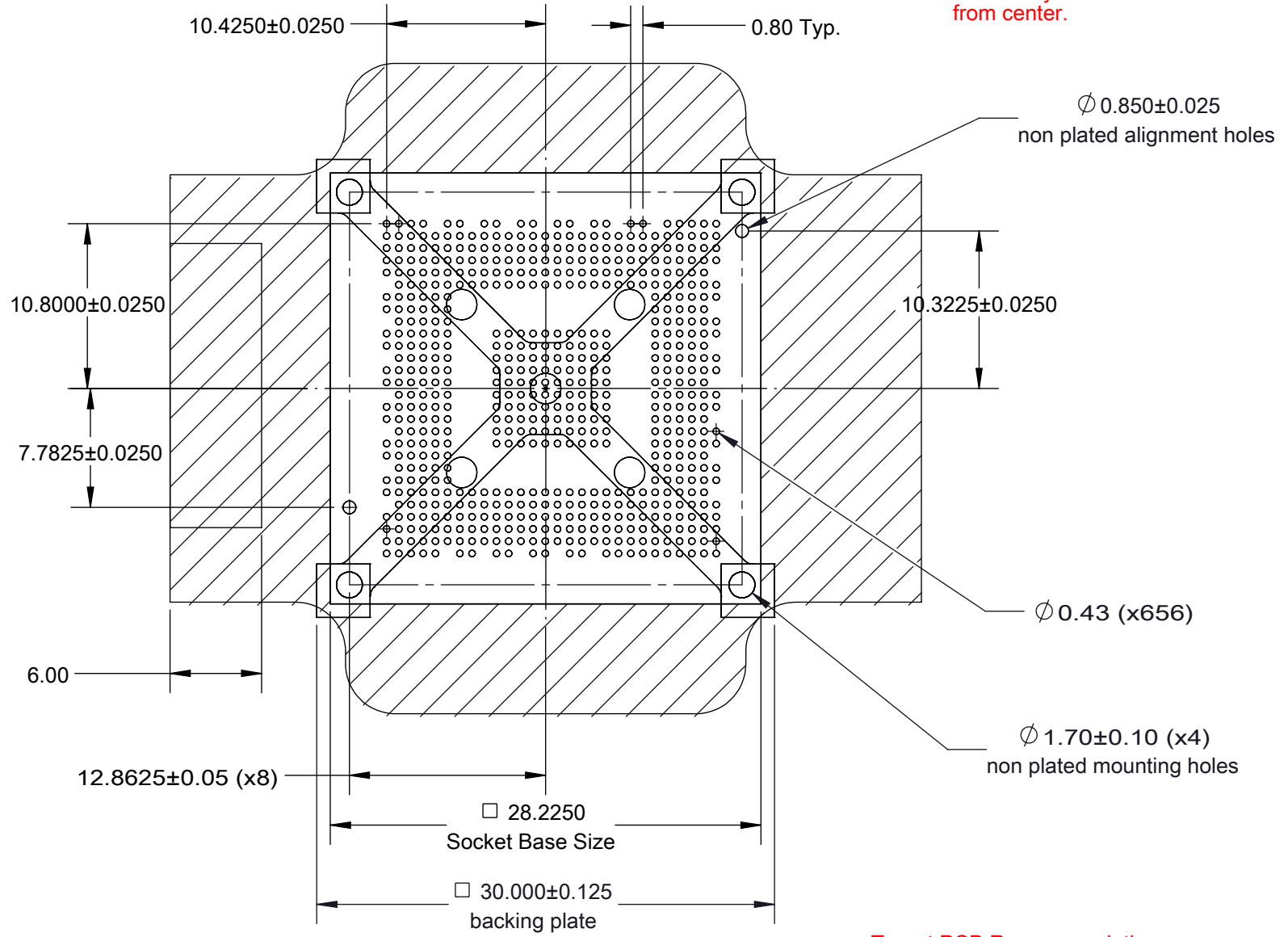
SECTION M-M

Description: SM-BGA602 clamshell 23x23mm 0.8mm 28x28 array

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

 SM-BGA-9040 Drawing Ironwood Electronics, Inc. Tele: (800) 404-0204 www.ironwoodelectronics.com	Material: Material <not specified> Finish: -- Weight: 136.39	STATUS: Released ENG: V. Panavala FILE: SM-BGA-9040 Dwg	SHEET: 1 OF 5 DRAWN BY: M. Raske DATE: 10-16-2013	REV. B SCALE: 1:1

Note: BGA pattern is not symmetrical with respect to the mounting holes. BGA array is shifted 0.375mm down from center.

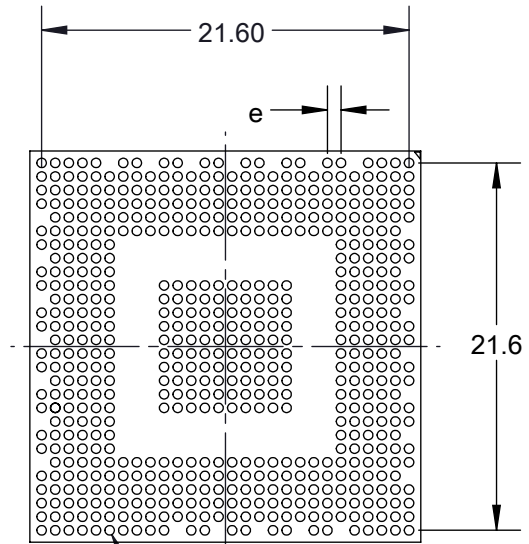
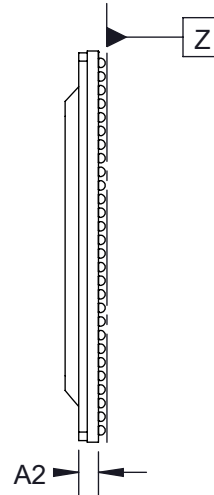
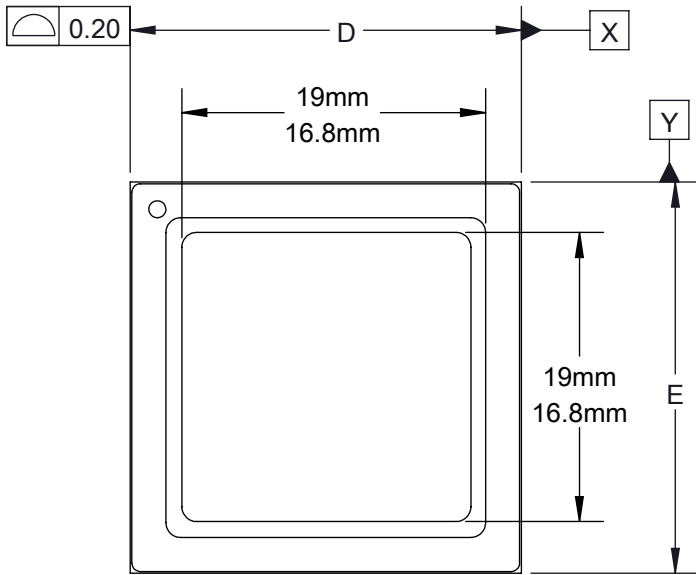


Target PCB Recommendations
 Total thickness: 1.6mm min.
 Plating: Gold or Solder finish
 PCB Pad height: same or higher than solder mask

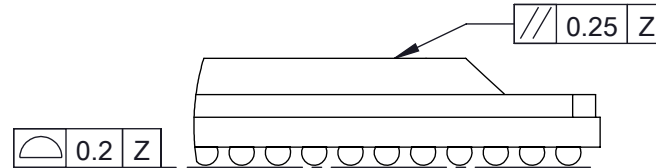
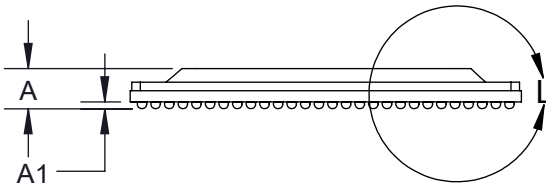
Description: Recommended PCB Layout

Primary dimension units are millimeters, Secondary dimension units are [inches], Weight is in grams.
 Tolerances: Hole diameters $\pm 0.03\text{mm}$ [$\pm 0.001''$], 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.

 SM-BGA-9040 Drawing Ironwood Electronics, Inc. Tele: (800) 404-0204 www.ironwoodelectronics.com	Material: Material <not specified> Finish: -- Weight: 136.39	STATUS: Released	SHEET: 2 OF 5	REV. B
		ENG: V. Panavala	DRAWN BY: M. Raske	SCALE: 2.5:1
		FILE: SM-BGA-9040 Dwg	DATE: 10-16-2013	



ϕ	0.25 (M)	X	Y	Z
ϕ	0.10 (M)	Z		



DETAIL L
SCALE 6 : 1


DIM	Minimum	Maximum
A	2.266	2.766
A1	0.3	0.5
b	0.4	0.60
D	23.00 BSC	
E	23.00 BSC	
e	0.8 BSC	
ARRAY	28 X 28	
PIN COUNT	602	

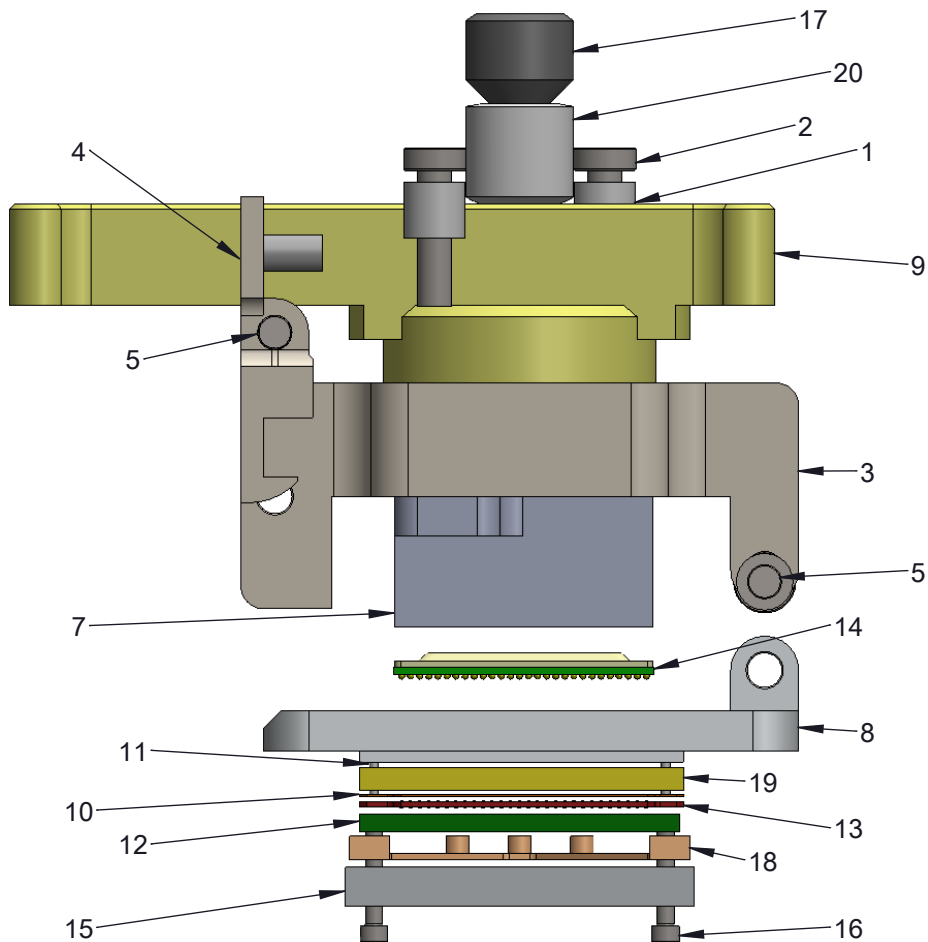
1. Dimensions are in millimeters.
2. Interpret dimensions and tolerances per ASME Y14.5M-1994.
3. Dimension b is measured at the maximum solder ball diameter, parallel to datum plane Z.
4. Datum Z (seating plane) is defined by the spherical crowns of the solder balls.
5. Parallelism measurement shall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

 SM-BGA-9040 Drawing Ironwood Electronics, Inc. Tele: (800) 404-0204 www.ironwoodelectronics.com	Material: Material <not specified> Finish: -- Weight: 136.39	STATUS: Released	SHEET: 3 OF 5	REV. B
		ENG: V. Panavala	DRAWN BY: M. Raske	SCALE: 2.25:1
		FILE: SM-BGA-9040 Dwg	DATE: 10-16-2013	



ITEM NO.	DESCRIPTION	Material
1	Spring Clamshell lid assembly	Steel Music Wire
2	Screw, M3 x 12mm, Low Head Cap, SS	18-8 Stainless Steel
3	Socket Lid	7075-T6 Aluminum Alloy
4	Latch	7075-T6 Aluminum Alloy
5	Hinge Pin and Snap Ring, 3mm OD, 30mm long, 1045 Stl, Blk Oxide	AISI 1045 Steel, cold drawn
6	Precision Compression Spring, Zinc-Plated Music Wire, 1/2" Length, .12" OD, .016" Wire	Zinc Plated Music Wire
7	CBT 23mm Compression plate Ni Plated	7075-T6 Aluminum Alloy
8	SM Socket Base Clamshell 23mm, Hinge on Right side	7075-T6 Aluminum Alloy
9	Compression Screw M24 Hard stop	7075-T6 Aluminum Alloy
10	Ball guide for 23mm 28x28 0.8mm pitch	Kapton Polyimide/Cirlex
11	Dowel Pin, 1/32" x 3/16", SS	Chrome Stainless Steel
12	PCB 23x23mm 28x28 0.8mm pitch BGA602	FR4 Standard
13	SM interposer for 23mm 28x28 1mm pitch BGA602	Silmat
14	BGA602 IC 23mm 0.8mm pitch 28x28 array	FR4 Standard
15	SBT/CBT NI PLT BACKING PLT 23MM	7075-T6, Plate (SS)
16	#0-80 X .375 LG, SOC HD CAP SCREW, ALLOY STL, BLK OXIDE	Alloy Steel
17	Thread-Locking Cup Point Set Screw 3/8"-16 Thread, 5/16" Long	Alloy Steel
18	Custom Insulation Plate 23mm IC	Utem 1000
19	SM IC Guide for 23mm device	Torlon 4203
20	Oval Point Socket Screw 3/8"-16 Thread, 3/8" Length	18-8 Stainless Steel

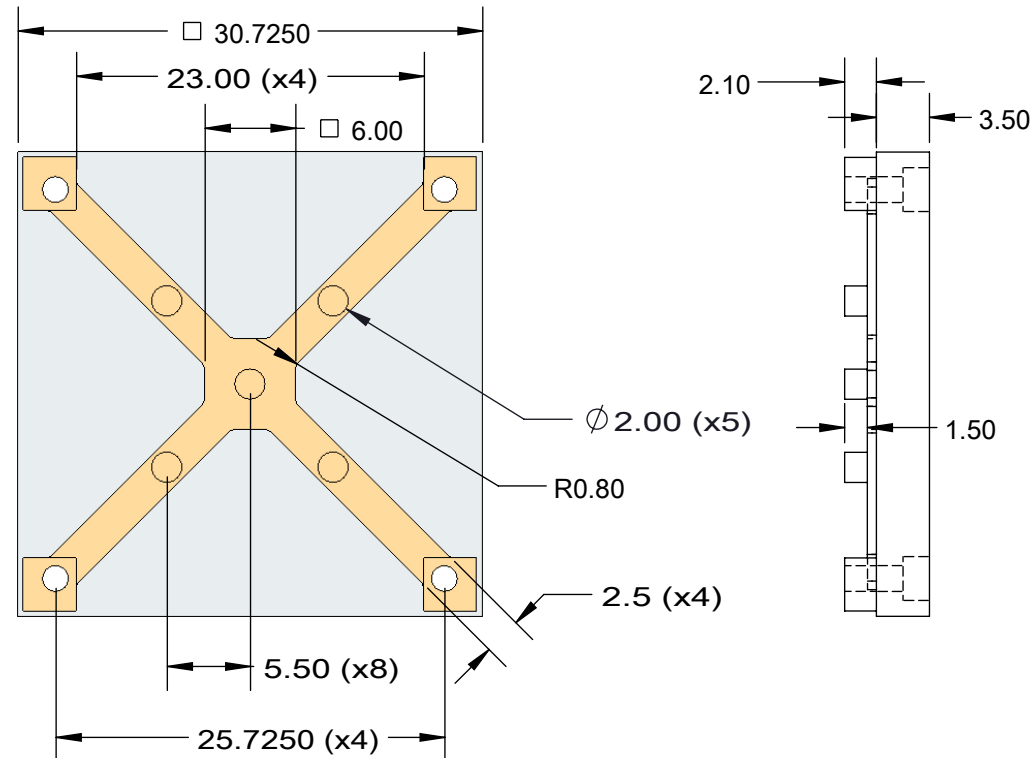
Socket Assembly/Calibration Instructions:

1. Align and place the socket base assembly on to the target PCB
2. Secure socket base assembly to the PCB using backing plate and hardware that is provided with socket.
3. Drop the BGA IC into the socket base assembly-Note Pin A1 orientation.
4. Close the lid and turn the compression screw until it bottom's out on the lid.
5. Remove the Top set screw from the compression screw.
6. Using torque driver and 3/16" hex bit turn the inside calibration set screw to recommended torque. (5 In lbs)
7. Place the nylon patch top set screw to lock the inside set screw position.
8. Once calibrated socket should work at the calibrated height. Repeat calibration if needed.


Description: Socket Assy, Insulation Plate

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.



Insulation Plate Specification


 SM-BGA-9040 Drawing Ironwood Electronics, Inc. Tele: (800) 404-0204 www.ironwoodelectronics.com	Material: Material <not specified> Finish: -- Weight: 136.39	STATUS: Released ENG: V. Panavala FILE: SM-BGA-9040 Dwg	SHEET: 4 OF 5 DRAWN BY: M. Raske DATE: 10-16-2013	REV. B SCALE: 2:1
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Rev	Date	Initials	Description
A	10/16/13	MR	Original
B	08/14/14	DH	Changed IC Guide material to Torlon

Description: Revisions

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.

 SM-BGA-9040 Drawing Ironwood Electronics, Inc. Tele: (800) 404-0204 www.ironwoodelectronics.com	Material: Finish: Weight:	STATUS: Released	SHEET: 5 OF 5	REV. B
		ENG: V. Panavala	DRAWN BY: M. Raske	SCALE: 2:1
		FILE: SM-BGA-9040 Dwg	DATE: 10-16-2013	