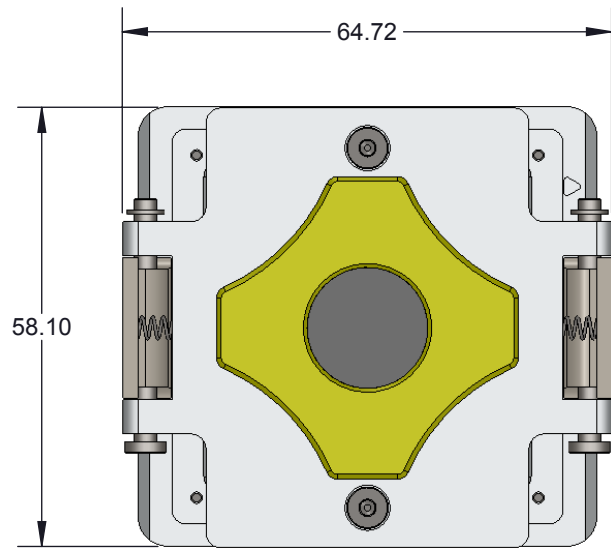
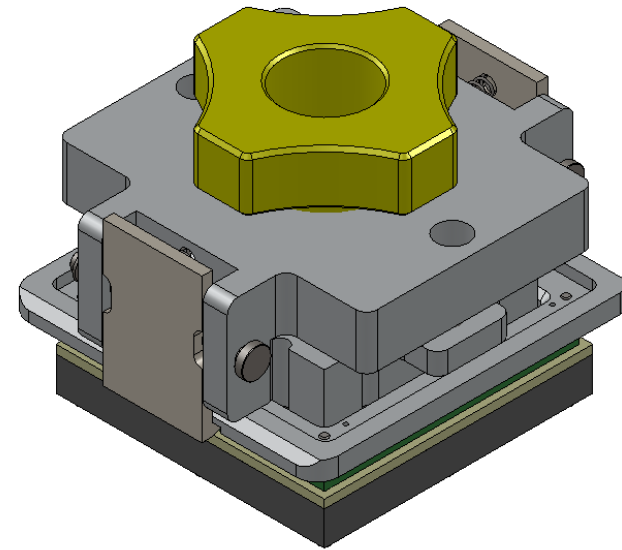
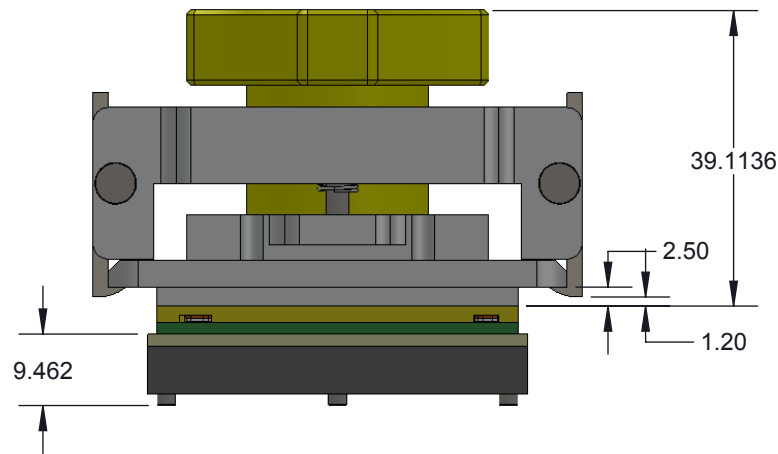


# Silver Ball Matrix Socket



## Features


- Wide temperature range (-55C to +150C).
- Current capability is 4A per pin .
- Excellent signal integrity at high frequencies.
- Low and stable contact resistance for reliable production yield.
- Highly compliant to accommodate wide co-planarity variations.

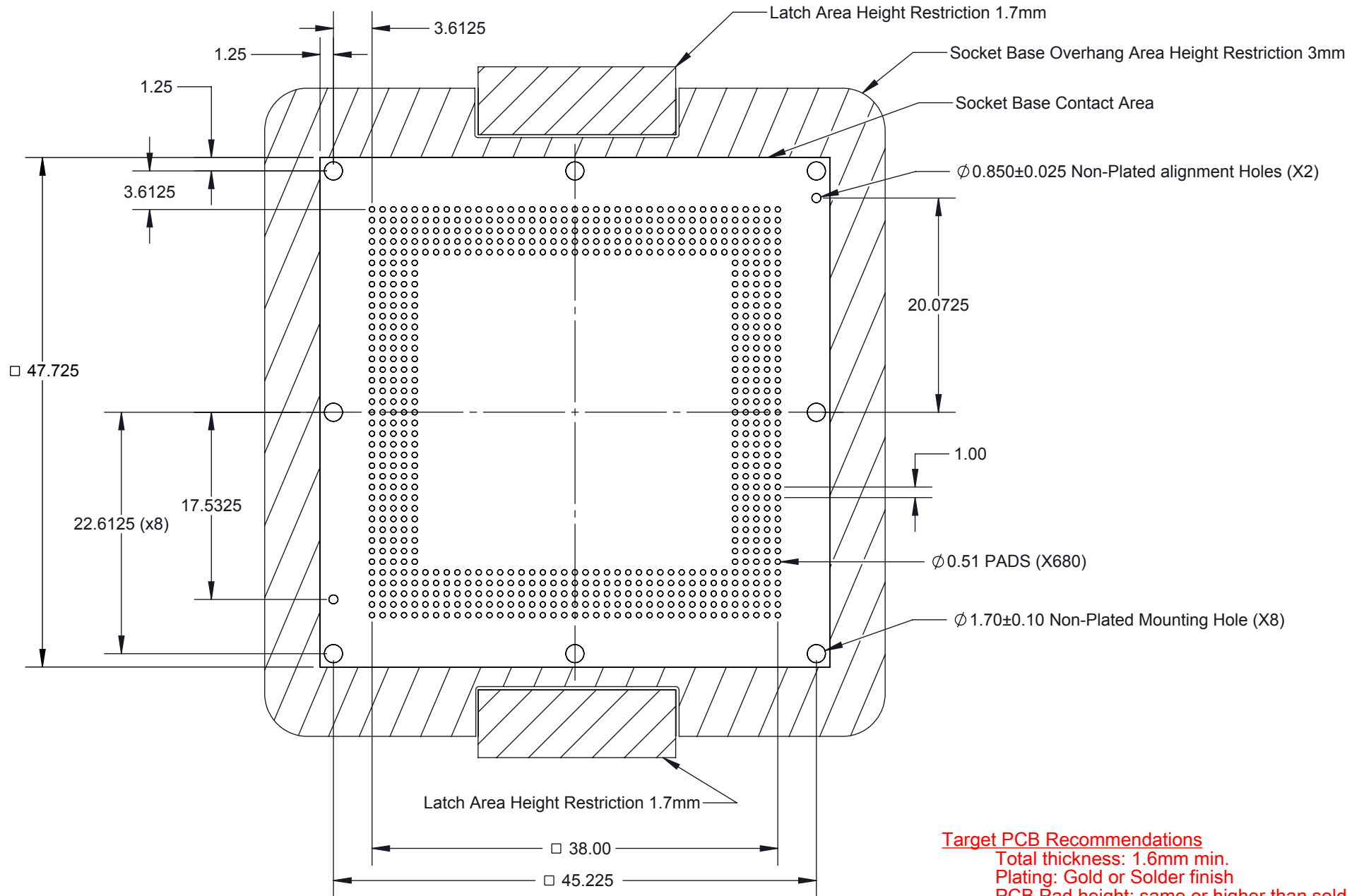


## Description: SM socket for 680 position 39x39 array 40x40mm, 1mm pitch BGA

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.


 <b>SM-BGA-9009 Drawing</b> Ironwood Electronics, Inc. Tele: (800) 404-0204 www.ironwoodelectronics.com	Material: N/A Finish: N/A Weight: 245.83	STATUS: Released ENG: E. Smolentseva FILE: SM-BGA-9009 Dwg	SHEET: 1 OF 5 DRAWN BY: E. Smolentseva DATE: 4/9/12	REV. B SCALE: 1:1



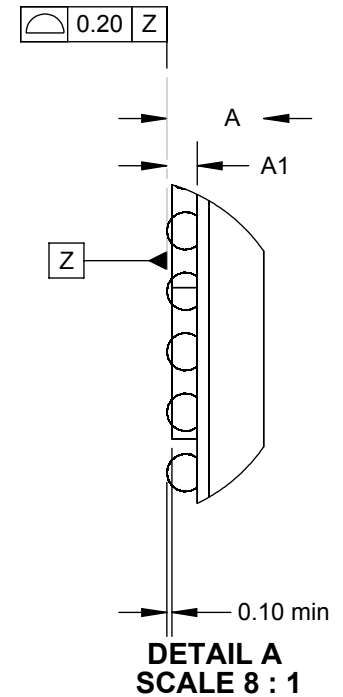
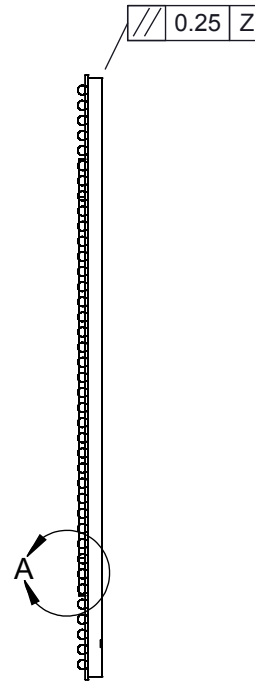
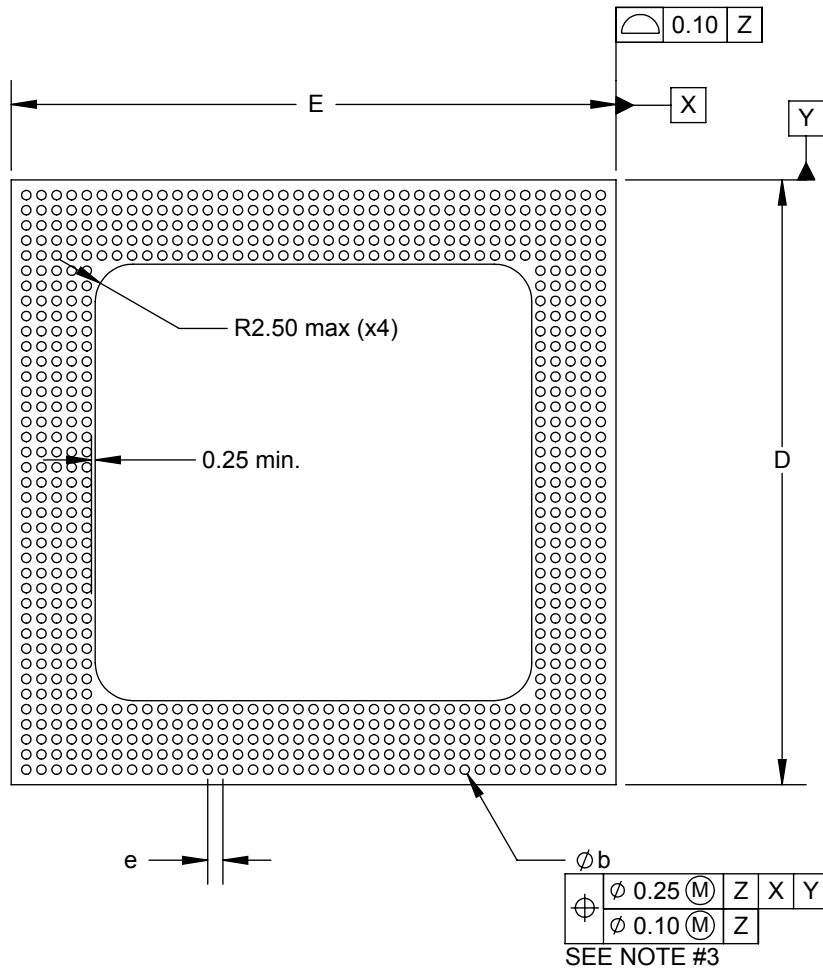
**Target PCB Recommendations**  
 Total thickness: 1.6mm min.  
 Plating: Gold or Solder finish  
 PCB Pad height: same or higher than solder mask

**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-9009 Drawing</b> Ironwood Electronics, Inc. Tele: (800) 404-0204 www.ironwoodelectronics.com	Material: N/A Finish: N/A Weight: 245.83	STATUS: Released ENG: E. Smolentseva FILE: SM-BGA-9009 Dwg	SHEET: 2 OF 5 DRAWN BY: E. Smolentseva DATE: 4/9/12	REV. B SCALE: 2:1

Ironwood Package code is BGA680C2




DIM	Minimum	Maximum
A	1.62 ref.	
A1	0.4	0.6
b	0.5	0.7
D	40.0 +/- 0.2mm	
E	40.0 +/- 0.2mm	
e	1.00	
ARRAY	39 x 39	
PIN COUNT	680	

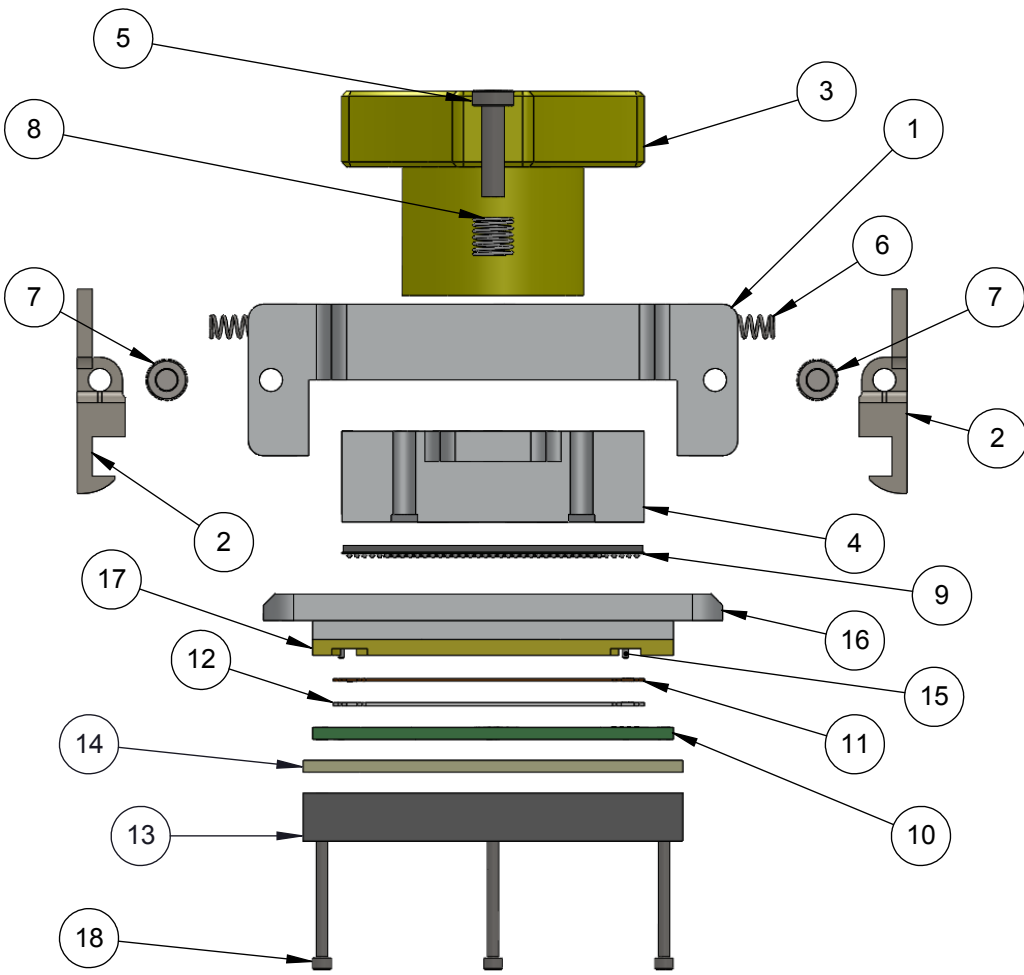
1. Dimensions are in millimeters.
2. Interpret dimensions and tolerances per ASME Y14.5M-1994.
3. Dimension b is measured at the maximum solder ball diameter, parallel to datum plane Z.
4. Datum Z (seating plane) is defined by the spherical crowns of the solder balls.
5. Parallelism measurement shall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

**Description: Compatible BGA**

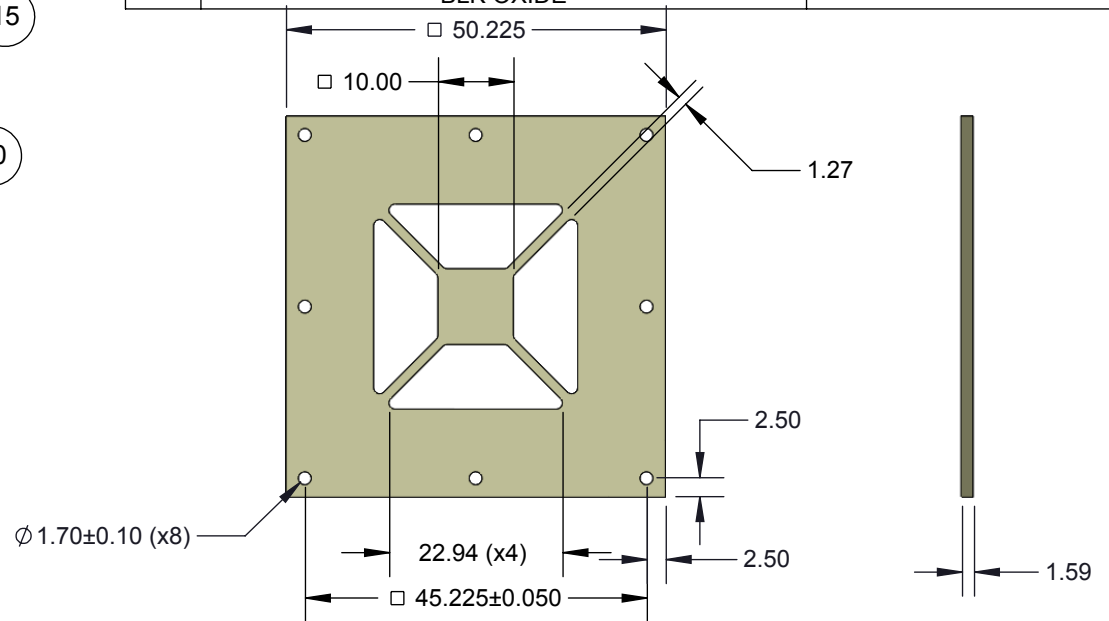
Primary dimension units are millimeters, Secondary dimension units are [inches], Weight is in grams.

**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-9009 Drawing</b> Ironwood Electronics, Inc. Tele: (800) 404-0204 www.ironwoodelectronics.com</p>	<p>Material: N/A Finish: N/A Weight: 245.83</p>	<p>STATUS: Released ENG: E. Smolentseva FILE: SM-BGA-9009 Dwg</p>	<p>SHEET: 3 OF 5 DRAWN BY: E. Smolentseva DATE: 4/9/12</p>	<p>REV. B SCALE: 2:1</p>




ITEM NO.	DESCRIPTION	Material
1	Clam Shell	7075-T6 Aluminum Alloy
2	Latch	7075-T6 Aluminum Alloy
3	Compression Screw	7075-T6 Aluminum Alloy
4	Compression Plate	7075-T6 Aluminum Alloy
5	Screw, M3 x 12mm, Low Head Cap, SS	18-8 Stainless Steel
6	Precision Compression Spring, Zinc-Plated Music Wire, 1/2" Length, .12" OD, .016" Wire	Zinc Plated Music Wire
7	Hinge Pin and Snap Ring, 3mm OD, 30mm long, 1045 Stl, Blk Oxide	AISI 1045 Steel, cold drawn
8	Spring Clamshell lid assembly	Steel Music Wire
9	test chip	FR4 High temp
10	Test PCB	FR4 Standard
11	SM socket ball guide 40mm 39x39 1mm BGA680	Kapton Polyimide/Cirlex
12	Silmat for 40mm, 39x39 1mm pitch BGA680	Silmat
13	Backing Plate	7075-T6 Aluminum Alloy
14	Insulation Plate, 50.225 X 50.225	FR4
15	Dowel Pin, 1/32" x 3/16", SS	Chrome Stainless Steel
16	Socket Base 40mm IC Clamshell Double latch	7075-T6 Aluminum Alloy
17	IC guide for 40mm device	Torlon 4203
18	#0-80 X .625 LG, SOC HD CAP SCREW, ALLOY STL, BLK OXIDE	Alloy Steel



**Insulation Plate Specification**

**Description: Socket Assy, Insulation Plate**

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-9009 Drawing</b> Ironwood Electronics, Inc. Tele: (800) 404-0204 www.ironwoodelectronics.com	Material: N/A Finish: N/A Weight: 245.83	STATUS: Released ENG: E. Smolentseva FILE: SM-BGA-9009 Dwg	SHEET: 4 OF 5 DRAWN BY: E. Smolentseva DATE: 4/9/12	REV. B SCALE: 1:1
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Rev	Date	Initials	Description
A	04/09/12	ELS	Original
B	12/23/14	DH	Changed IC Guide material from Ultem 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.

 <b>SM-BGA-9009 Drawing</b> Ironwood Electronics, Inc. Tele: (800) 404-0204 www.ironwoodelectronics.com	<b>Material:</b> <b>Finish:</b> <b>Weight:</b>	STATUS: Released	SHEET: 5 OF 5	REV. B
		ENG: E. Smolentseva	DRAWN BY: E. Smolentseva	SCALE: 1:1
		FILE: SM-BGA-9009 Dwg	DATE: 4/9/12	