Top View
(Transparent)

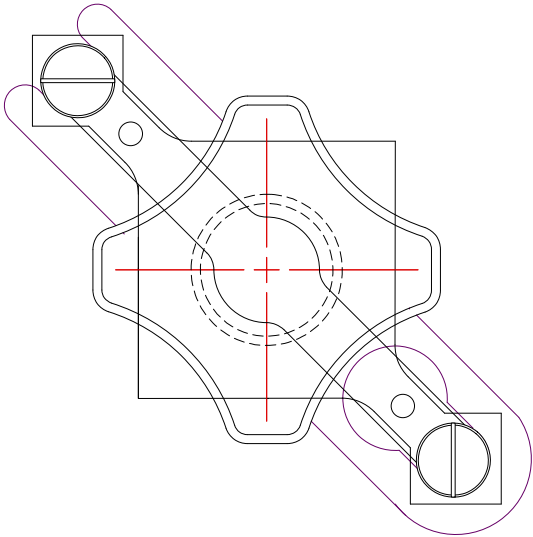# GHz BGA Socket - Direct mount, solderless

- Directly mounts to target PCB (needs tooling holes) with hardware.
- High speed, reliable Elastomer connection
- Minimum real estate required
- Compression plate distributes forces evenly
- Ball guide prevents over compression of elastomer
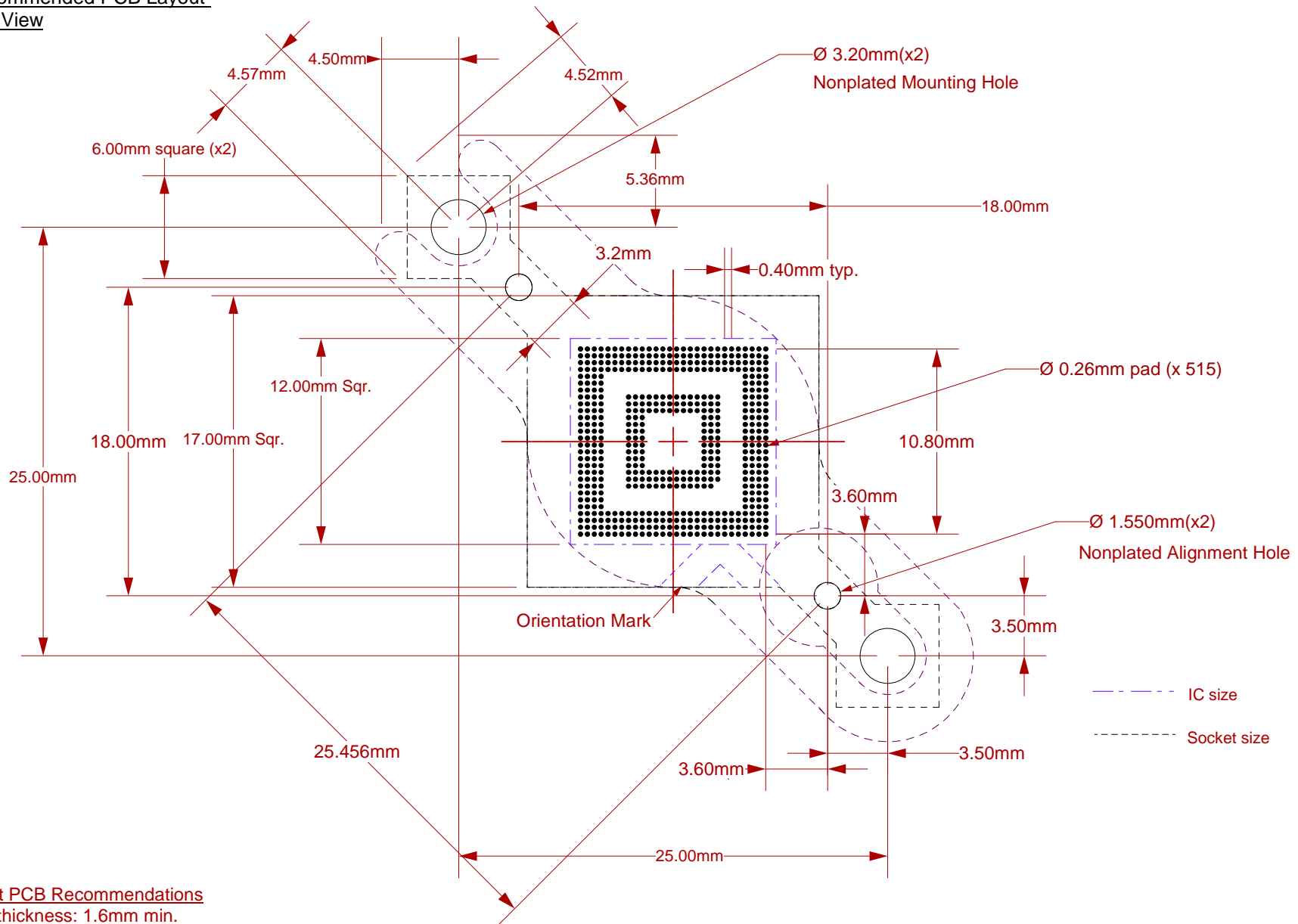- Easily removable swivel socket lid

Side View

PoP chip

Customer's Target PCB

Customer's BGA IC
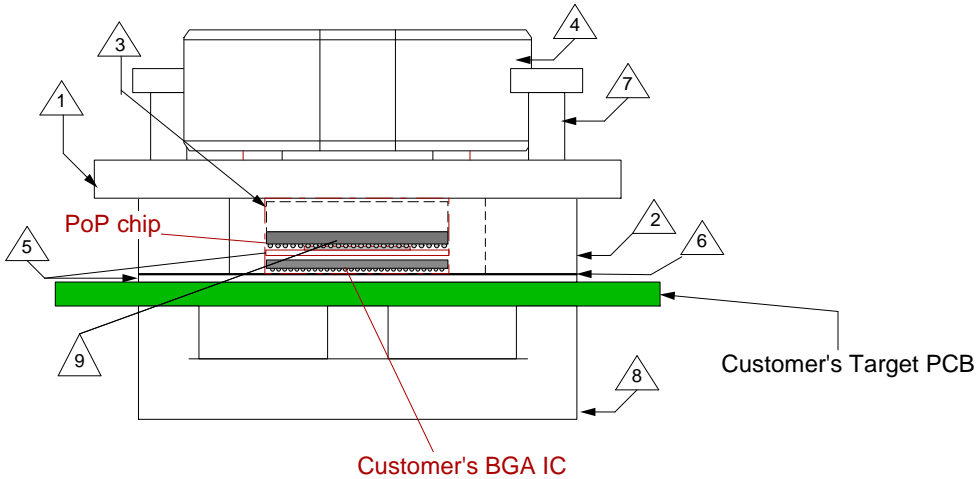
1 — Socket Lid: Black anodized Aluminum. Thickness = 4.05mm.

2 — Socket base: Black anodized Aluminum. Thickness = 5mm.

3 — Compression Plate: Ultem 2.5 mm

4 — Compression screw: Clear anodized Aluminum.

5 — Interposer: Copper plated kapton and conductive elastomer, Thickness = 0.363mm.

6 — Ball Guide: Kapton polyamide.

7 — Socket base screw: Low head precision shoulder screw, 18-8SS, #3.5-56, 17mm long.

8 — Backing Plate: Black anodized Aluminum. Thickness = 7.5mm.

9 — Gap Pad: Thickness = 0.254mm.

All tolerances: ±0.125mm (unless stated otherwise). Materials and specifications are subject to change without notice.

SG-BGA-7116 Drawing	Status: Released	Scale: -	Rev: A
© 2007 IRONWOOD ELECTRONICS, INC. 11351 Rupp Dr. Suite 400 Burnsville, MN 55337 Tele: (952) 229-8200 www.ironwoodelectronics.com	Drawing: J. Glab	Date: 12/14/07	
	File: **SG-BGA-7116** Dwg.mcd	Modified:	

Recommended PCB Layout
Top View

Ø 3.20mm(x2)
Nonplated Mounting Hole

4.57mm
4.50mm
4.52mm
6.00mm square (x2)
5.36mm
18.00mm
3.2mm
0.40mm typ.
12.00mm Sqr.
18.00mm
17.00mm Sqr.
25.00mm
Ø 0.26mm pad (x 515)
10.80mm
3.60mm
Ø 1.550mm(x2)
Nonplated Alignment Hole
Orientation Mark
3.50mm
25.456mm
IC size
Socket size
3.50mm
3.60mm
25.00mm

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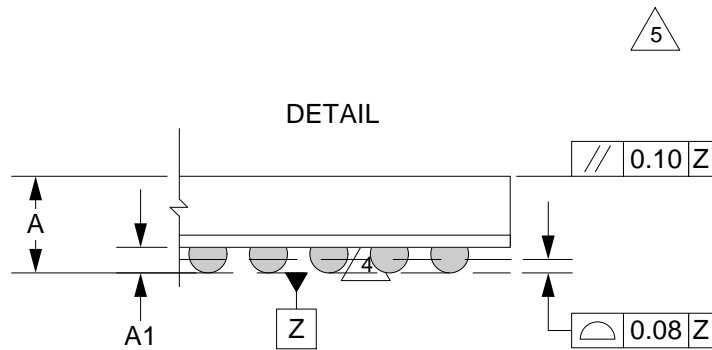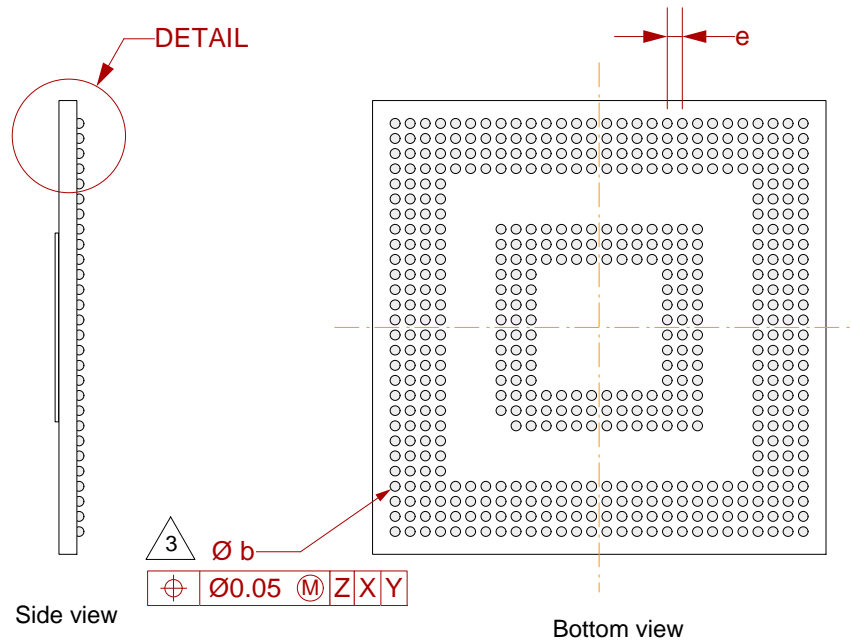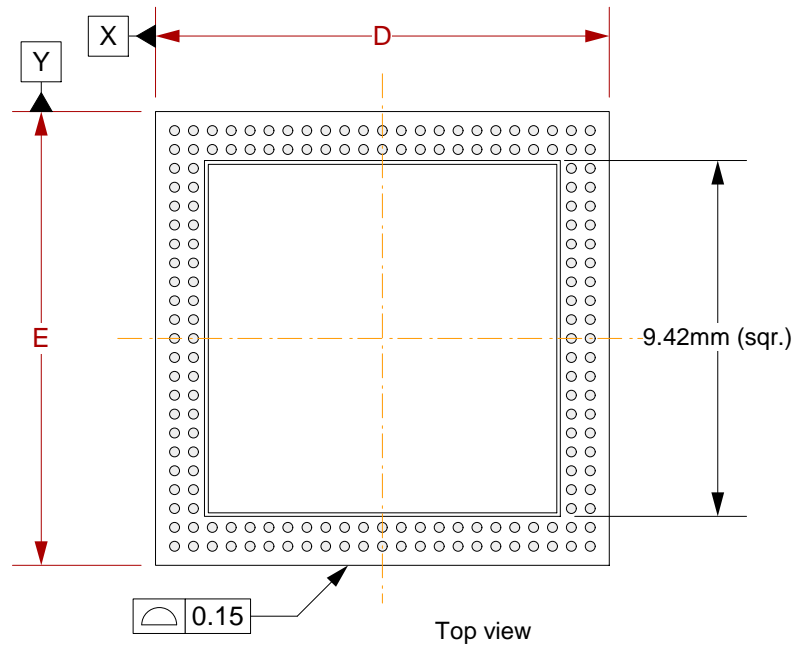PCB Pad height: Same or higher than solder mask

NOTE: Steel backing plate may be required based on end user's application

Recommended PCB Layout Tolerances: ±0.025mm [±0.001"] unless stated otherwise.

Scale: 3:1

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Compatible BGA Spec

X

Y

D

9.42mm (sqr.)

0.15

Top view

DETAIL

Side view

3   Ø b

⊕ | Ø0.05 Ⓜ | Z | X | Y

e

Bottom view

5

DETAIL

// | 0.10 | Z

A

A1

Z

4

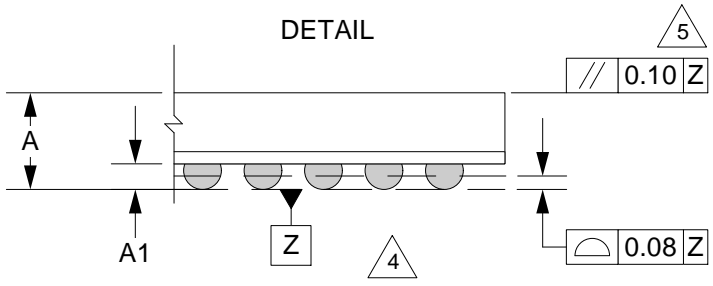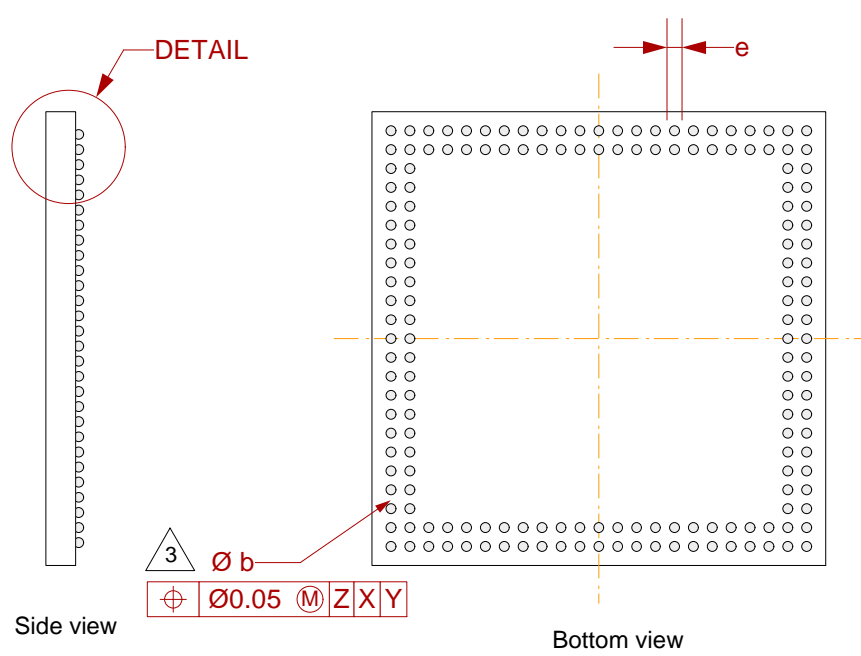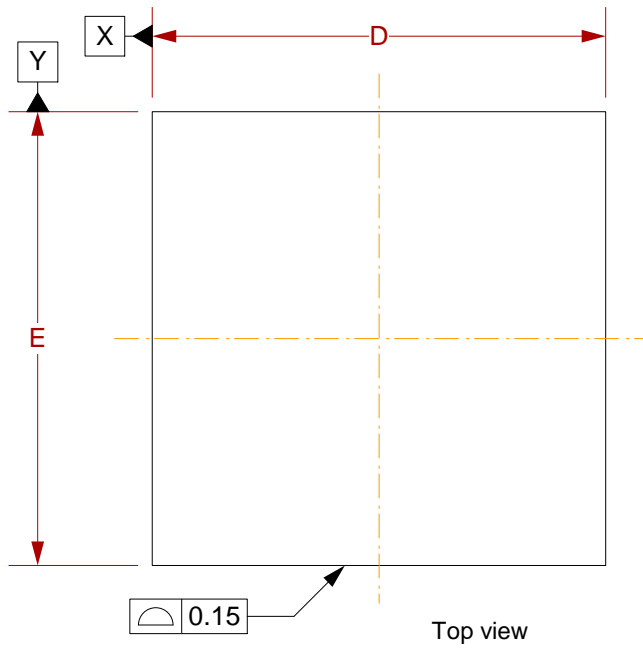0.08 | Z

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	0.65	0.85
A1	0.13	0.23
b	0.21	0.31
D	12.00 BSC	
E	12.00 BSC	
e	0.40 BSC	

Array 28 X 28

SG-BGA-7116 Drawing	Status: Released		Scale: -	Rev: A

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Drawing: J. Glab

Date: 12/14/07

File: **SG-BGA-7116** Dwg.mcd

Modified:

Compatible BGA Spec - 2nd layer PoP chip

X

Y

D

E

⌒ 0.15

Top view

DETAIL

e

3 Ø b

⊕ | Ø0.05 Ⓜ | Z | X | Y

Side view

Bottom view

DETAIL

5

// | 0.10 | Z

A

A1

Z

4

⌒ | 0.08 | Z

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.

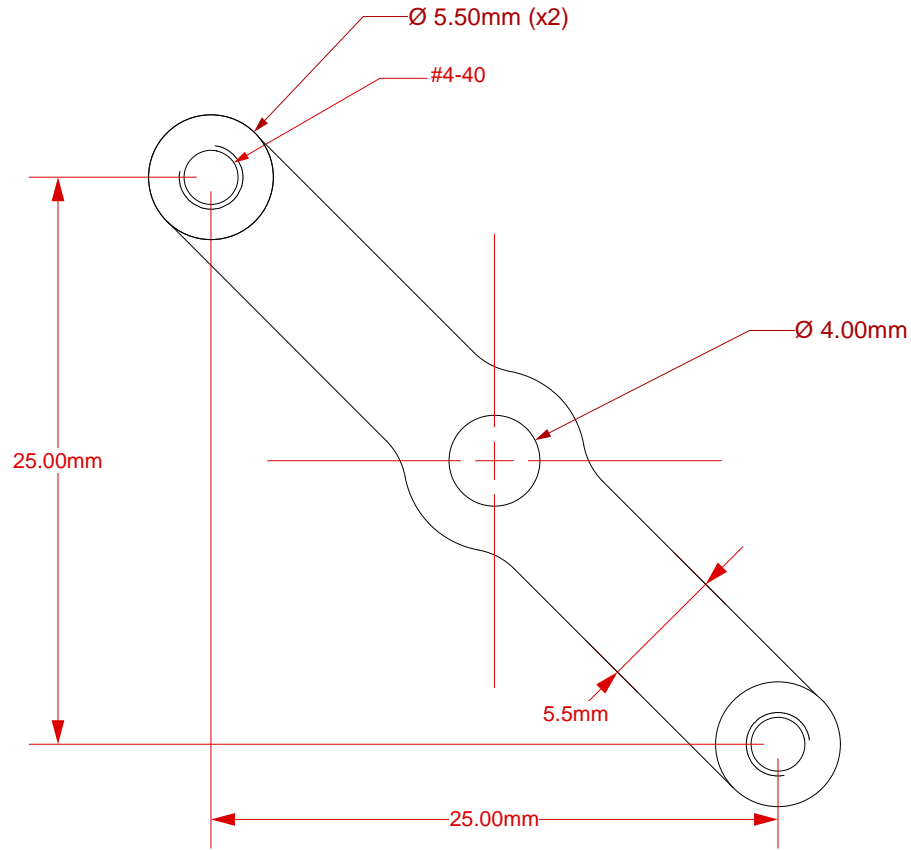5 Parallelism measurement shall exclude any effect of mark on top surface of package.

DIM	MIN	MAX
A	0.95	1.15
A1	0.13	0.23
b	0.21	0.31
D	12.00 BSC	
E	12.00 BSC	
e	0.50 BSC	

Array 23 X 23

All dimensions are in mm.
All tolerences are +/- 0.125mm.
(Unless stated otherwise)

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	File: **SG-BGA-7116** Dwg.mcd	Modified:	

Top View

Ø 5.50mm (x2)

#4-40

Ø 4.00mm

25.00mm

5.5mm

25.00mm

Side View

3.50mm

4.00mm
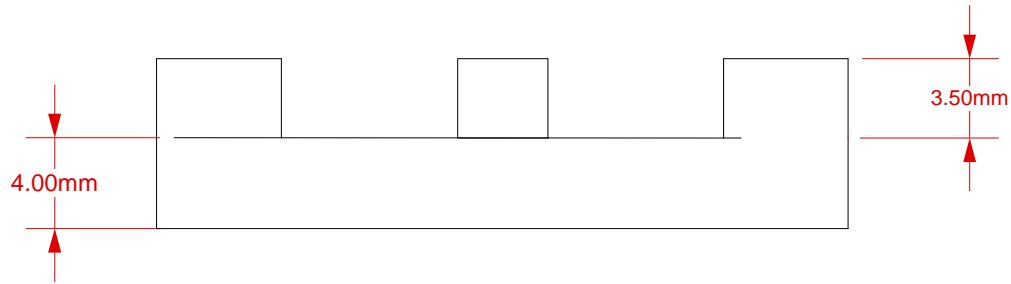
Description: Backing Plate

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		File: **SG-BGA-7116** Dwg.mcd		Modified:	

Compression Screw

Socket Lid

Compression Plate

Socket Base
Assembly

Instructions:
1. Place socket base assembly onto target PCB using alignment pins.
2. Place the backing plate onto the bottom of target PCB.
3. Two screws will go through socket base assembly, target PCB and threads into the backing plate.
4. Place the IC device into the socket.
5. Place second layer of c-flex on top of chip. Gold side up - should be contacting the balls of the PoP chip.
6. Place PoP chip on top of 2nd layer of interposer
7. Place the compression plate on top of the IC device.
8. Place the socket lid onto the screws and swivel it to lock.
9. Tighten the compression screw to apply proper torque.

Description: Assembly Stack

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