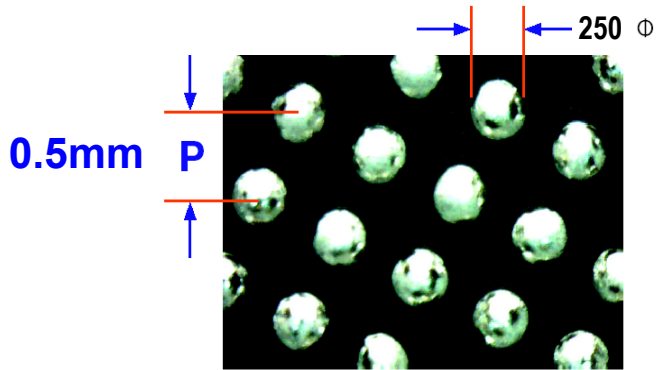
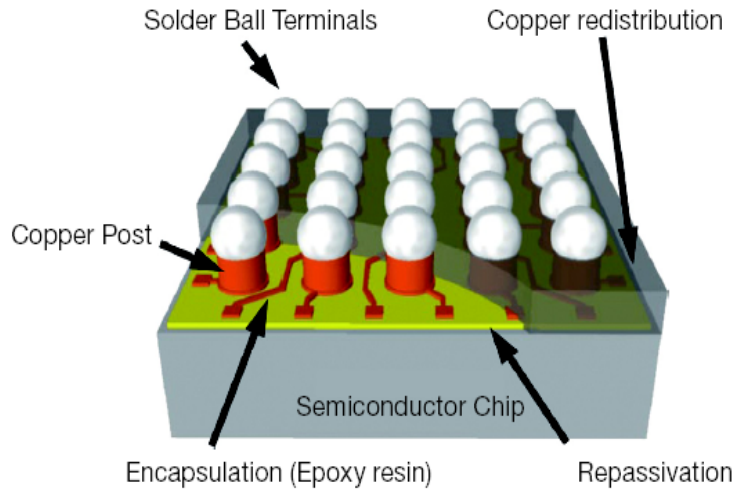
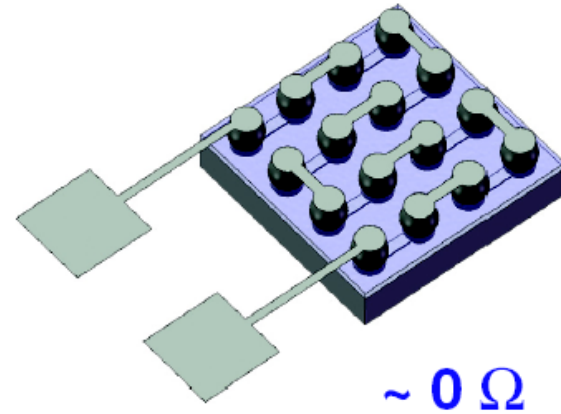


# WLP OutLine Drawings

## 0.5mm Pitch



### Daisy Chain



TOLERANCE UNLESS NOTED		APPROVALS	DATE	<b>TopLine</b> <sup>®</sup>			
X.X	+/- 0.3			TITLE WLP16T.5C-DC048D 16-BALL P=0.5mm (TEG0510)			
X.XX	+/- 0.03	DRAWN J.Hines	12/28/2010				
X.XXX	+/- 0.003	ENG					
ANGLES	+/- 0.5°	MFG		SCALE	SIZE	DRAWING NO.	REV
ALL DIMENSIONS IN				30:1	A	550482	A
<input type="checkbox"/> INCHES <input checked="" type="checkbox"/> MILLIMETERS		QA		DO NOT SCALE DRAWING			
THIRD ANGLE PROJECTION		CUST					
		REVISED					

## WLP Daisy Chain (Full Array)

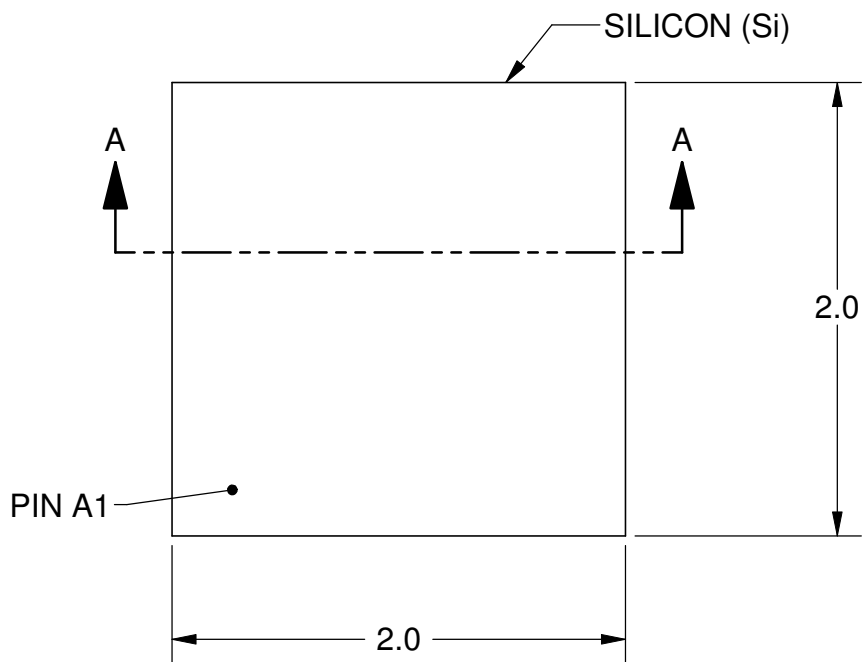
Ball Count	Ball Matrix	Daisy Chain	Body Size (mm) P=0.5mm	Page
16	4x4	DC048	2.0mm	3~4
36	6x6	DC067	3.0mm	5~6
64	8x8	DC088	4.0mm	7~8
100	10x10	DC108	5.0mm	9~10
144	12x12	DC127	6.0mm	11~12
196	14x14	DC148	7.0mm	13~14
256	16x16	DC168	8.0mm	15~16
400	20x20	DC208	10mm	17~18
676	26x26	DC260	13mm	19~20
900	30x30	DC307	15mm	21~22



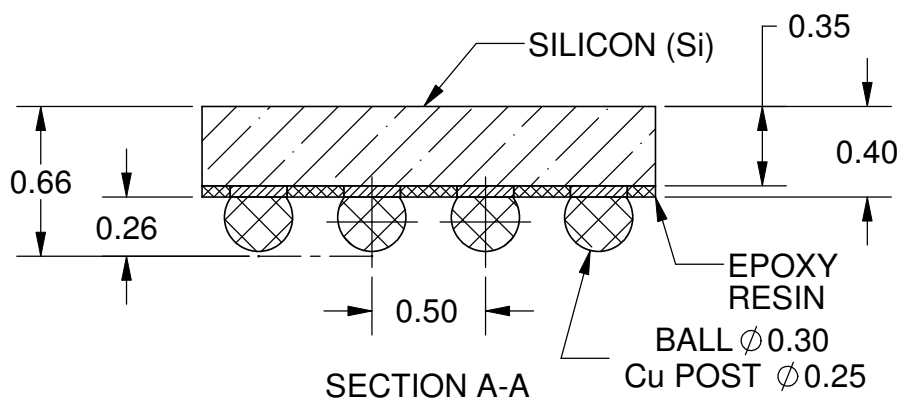
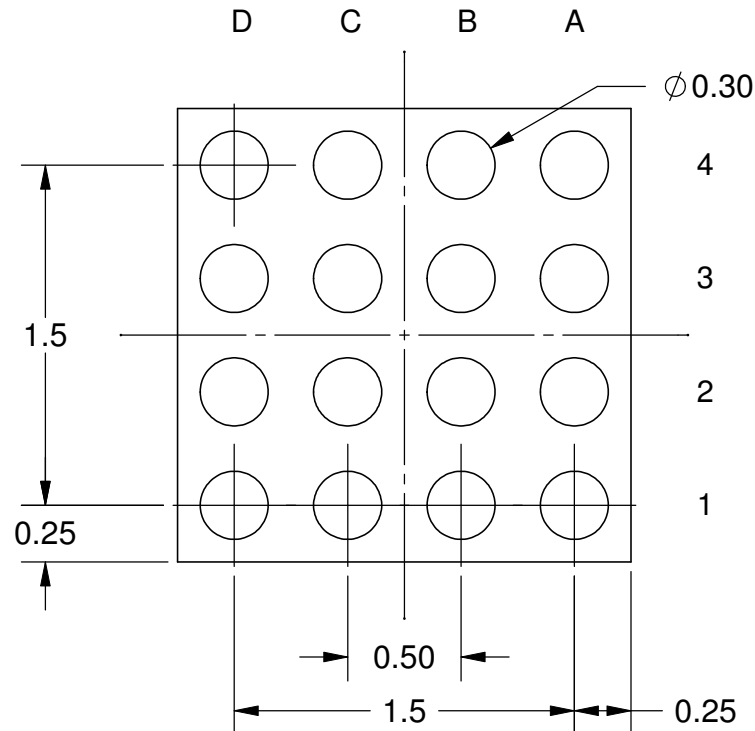
Contact: [Sales@TopLine.tv](mailto:Sales@TopLine.tv)  
Tel 1-800-776-9888

More Details:  
[www.topline.tv/WLP.html](http://www.topline.tv/WLP.html)

TOP VIEW



BALL VIEW




SECTION A-A

Notes: (Unless Otherwise Specified).

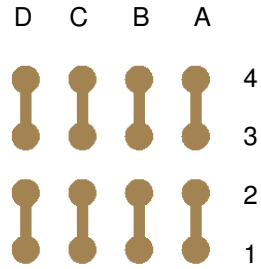
- 1) ALL DIMENSIONS ARE IN MM.
- 2) SOLDER BALL ALLOY:  
STANDARD: SAC305 (Sn96.5/Ag3.0/Cu0.5).  
SPECIAL: LF35 (Sn98.3/Ag1.2/Cu0.5).
- 3) BALL DIAMETER (BEFORE REFLOW): 0.30mm.
- 4) NON-SOLDER MASK DEFINED PAD.
- 5) PAD Cu DIAMETER: 0.25mm.
- 6) SUBSTRATE MATERIAL: Si (SILICON).
- 7) DAISY CHAIN PATTERN (SEE PAGE 2).

PART NUMBER TABLE				
PART NUMBER	BALL ALLOY	Pb-FREE	RoHS	Si DIE
WLP16T.5C-DC048D	Sn96.5/Ag3.0/Cu0.5	YES	YES	YES
WLP16T.5C1-DC048D	Sn98.3/Ag1.2/Cu0.5	YES	YES	YES

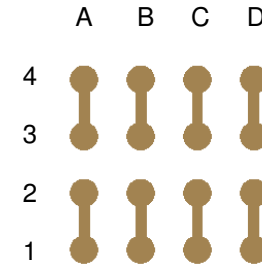
TOLERANCE UNLESS NOTED		APPROVALS		DATE				
X.X	+/- 0.3	DRAWN J. Hines		12/28/2010				
X.XX	+/- 0.03	ENG			TITLE			
X.XXX	+/- 0.003	MFG			WLP16T.5C-DC048D			
ANGLES +/- 0.5°		THIRD ANGLE PROJECTION			16-BALL P=0.5mm (TEG0510)			
ALL DIMENSIONS IN		QA			SCALE	SIZE	DRAWING NO.	REV
INCHES <input type="checkbox"/> MILLIMETERS <input checked="" type="checkbox"/>		CUST			30:1	A	550482	A
		REVISED			DO NOT SCALE DRAWING			SHEET 1 OF 2

# DAISY CHAIN PATTERN

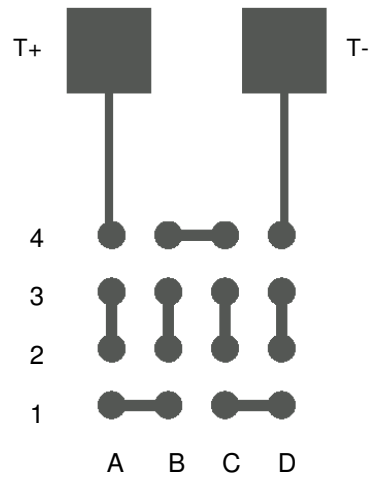
BALL VIEW



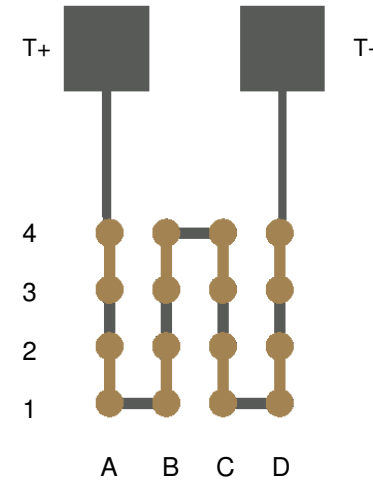
BOTTOM SIDE  
(TOP X-RAY VIEW)



TOP VIEW



AFTER MOUNTING  
TO TEST BOARD  
(TOP X-RAY VIEW)



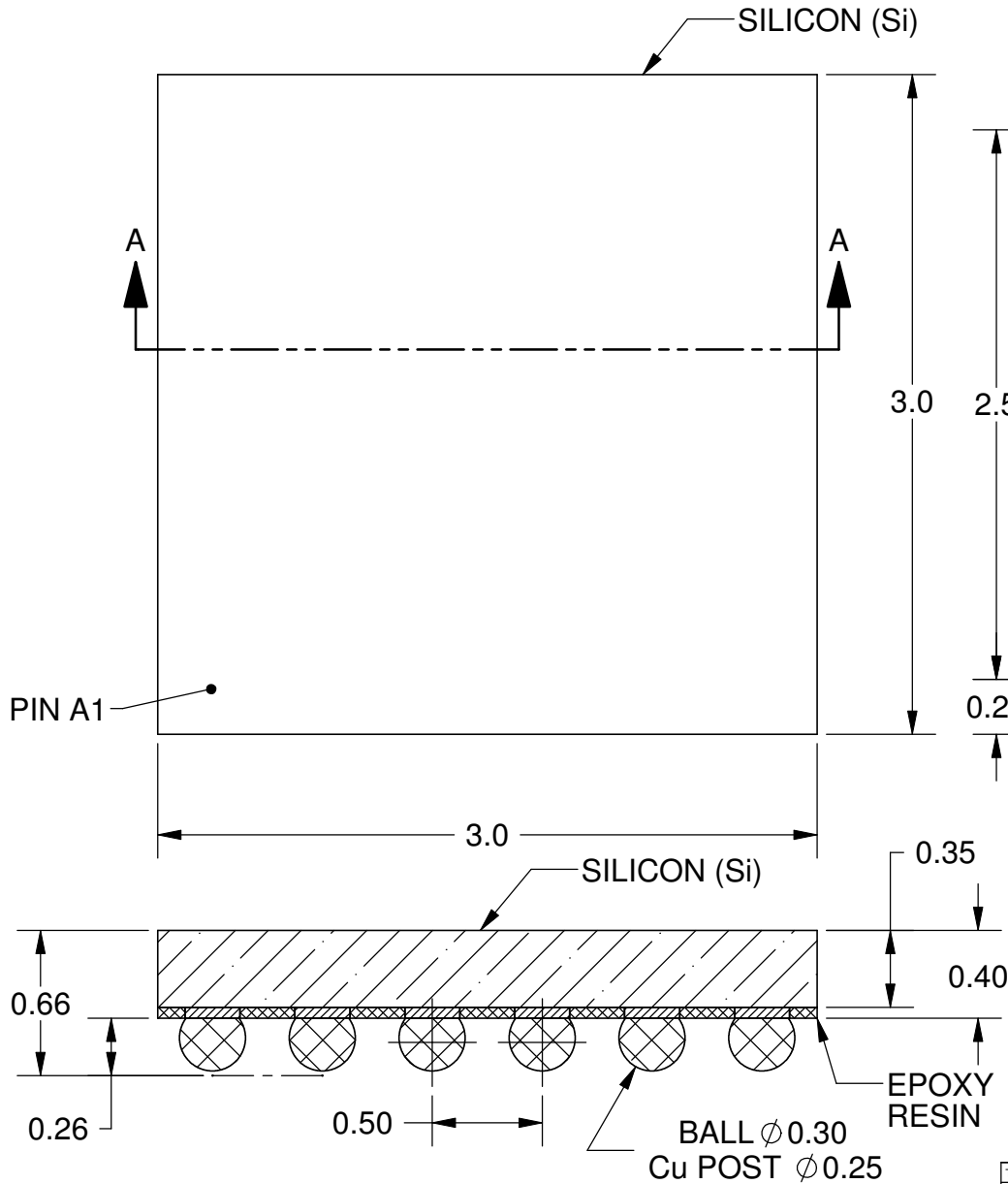
TEST VEHICLE BOARD

Notes:

- 1) PCB BOARD DIMENSIONS ARE PRESENTED ONLY AS A GUIDELINE. DESIGNERS SHOULD USE THEIR OWN EXPERIENCE WHEN DESIGNING PCB.
- 2) PCB Cu BALL PAD DIAMETER 0.25mm (9.8mil).
- 3) PCB DAISY CHAIN TRACING LINE WIDTH 0.10mm (3.9mil).

<b>TopLine</b> <sup>®</sup>			
TITLE    WLP16T.5C-DC048D 16-BALL P=0.5mm (TEG0510)			
SCALE 15:1	SIZE A	DRAWING NO. 550482	REV A
DO NOT SCALE DRAWING		SHEET 2 OF 2	

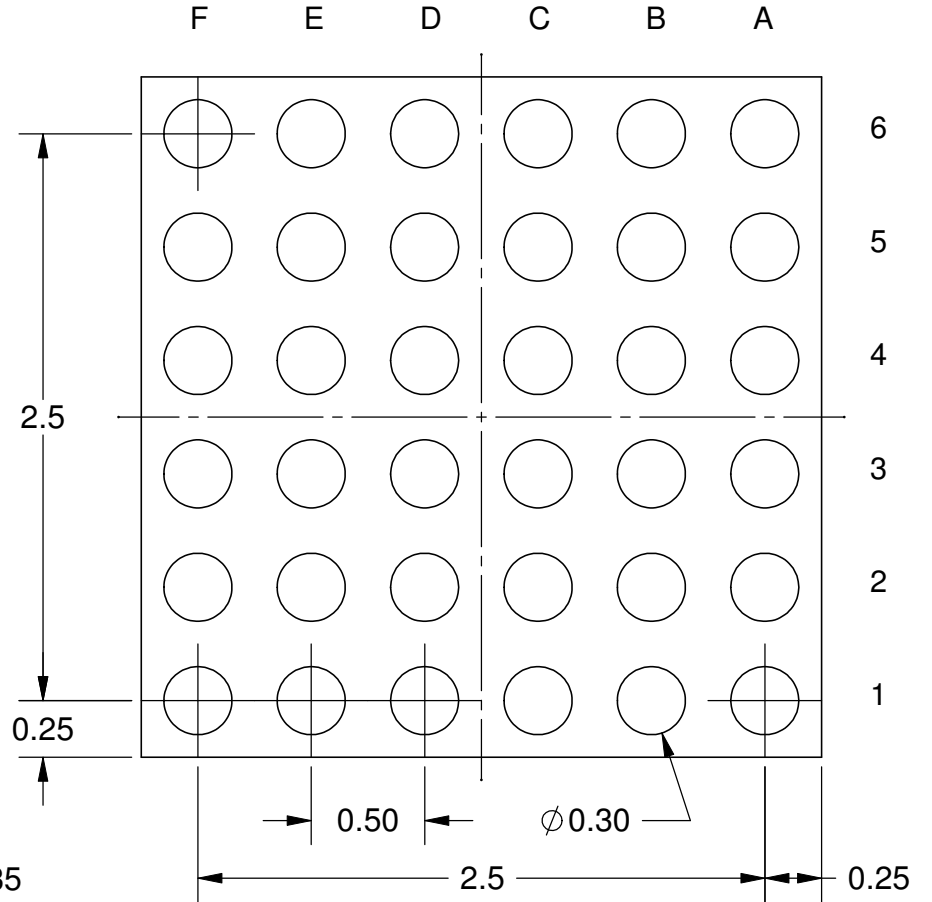
TOP VIEW



SECTION A-A

PART NUMBER TABLE				
PART NUMBER	BALL ALLOY	Pb-FREE	RoHS	Si DIE
WLP36T.5C-DC067D	Sn96.5/Ag3.0/Cu0.5	YES	YES	YES
WLP36T.5C1-DC067D	Sn98.3/Ag1.2/Cu0.5	YES	YES	YES

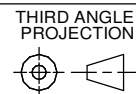
BALL VIEW



Notes: (Unless Otherwise Specified).

- 1) ALL DIMENSIONS ARE IN MM.
- 2) SOLDER BALL ALLOY:  
STANDARD: SAC305 (Sn96.5/Ag3.0/Cu0.5).  
SPECIAL: LF35 (Sn98.3/Ag1.2/Cu0.5).
- 3) BALL DIAMETER (BEFORE REFLOW): 0.30mm.
- 4) NON-SOLDER MASK DEFINED PAD.
- 5) PAD Cu DIAMETER: 0.25mm.
- 6) SUBSTRATE MATERIAL: Si (SILICON).
- 7) DAISY CHAIN PATTERN (SEE PAGE 2).

TOLERANCE UNLESS NOTED	
X.X	+/- 0.3
X.XX	+/- 0.03
X.XXX	+/- 0.003
ANGLES	+/- 0.5°
ALL DIMENSIONS IN	
<input type="checkbox"/> INCHES	<input checked="" type="checkbox"/> MILLIMETERS

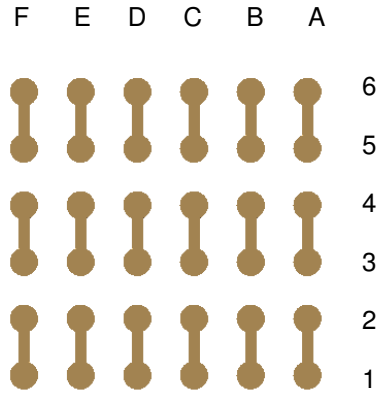


APPROVALS	DATE
DRAWN J. Hines	12/28/2010
ENG	
MFG	
QA	
CUST	
REVISED	

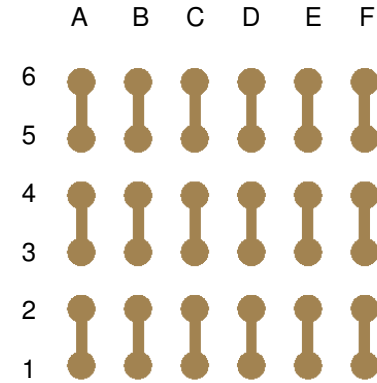
<b>TopLine</b> ®			
TITLE WLP36T.5C-DC067D 36-BALL P=0.5mm (TEG0510)			
SCALE 30:1	SIZE A	DRAWING NO. 550672	REV A
DO NOT SCALE DRAWING			SHEET 1 OF 2

## DAISY CHAIN PATTERN

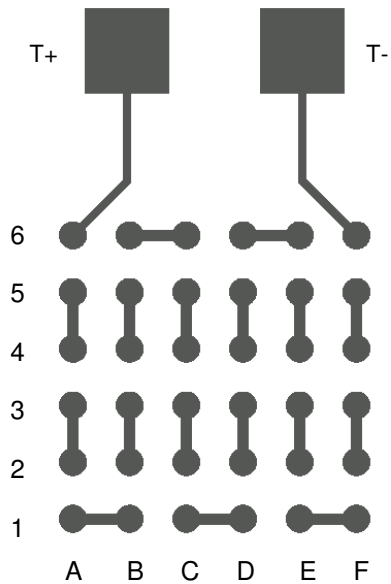
BALL VIEW



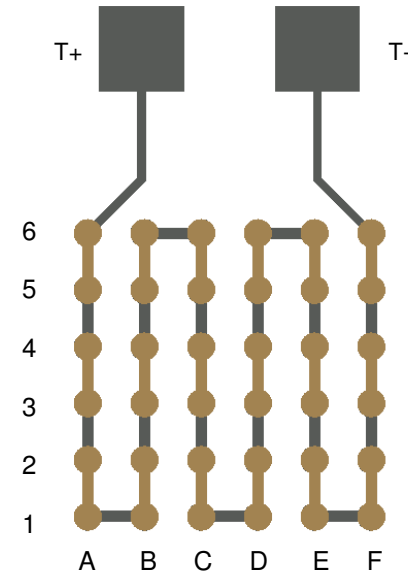
BOTTOM SIDE  
(TOP X-RAY VIEW)



TOP VIEW



AFTER MOUNTING  
TO TEST BOARD  
(TOP X-RAY VIEW)



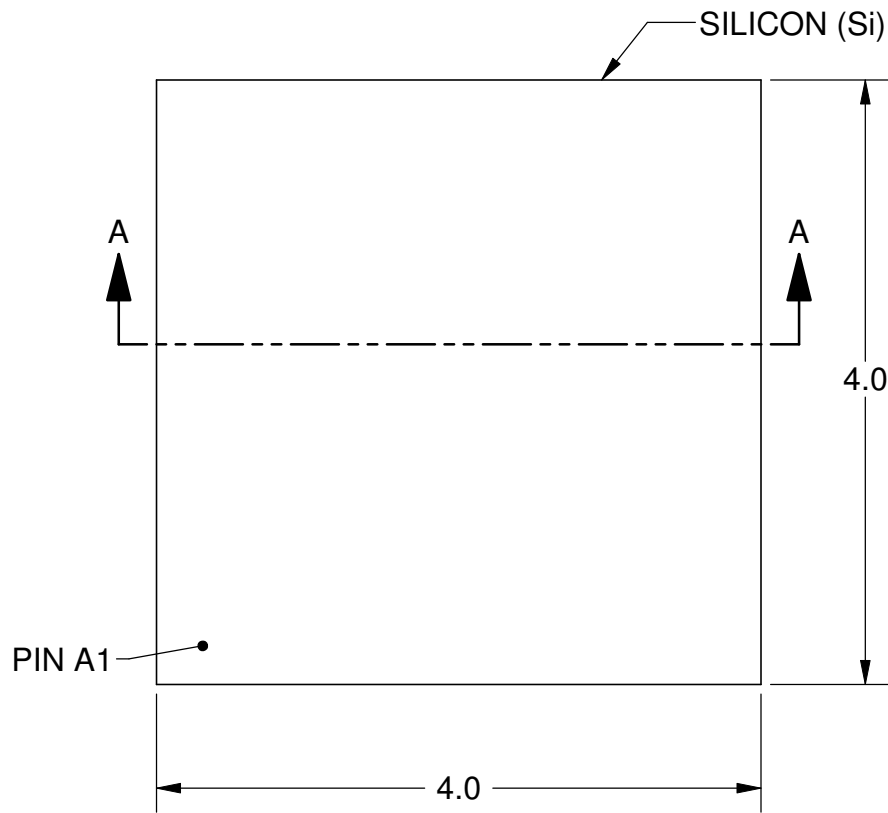
TEST VEHICLE BOARD

**Notes:**

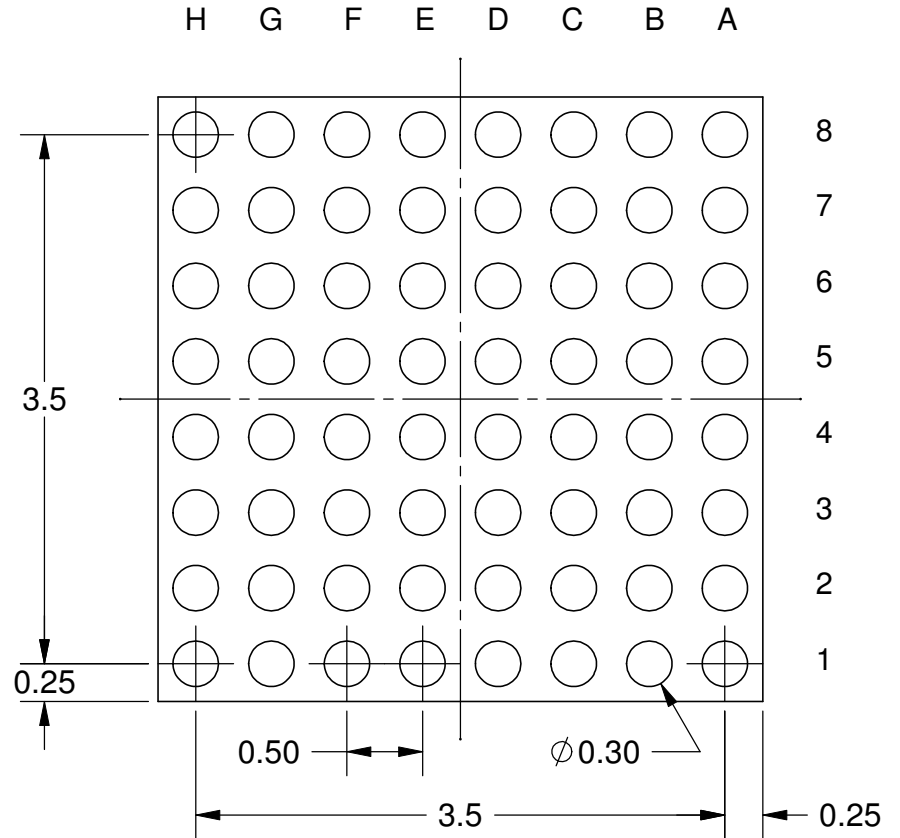
- 1) PCB BOARD DIMENSIONS ARE PRESENTED ONLY AS A GUIDELINE. DESIGNERS SHOULD USE THEIR OWN EXPERIENCE WHEN DESIGNING PCB.
- 2) PCB Cu BALL PAD DIAMETER 0.25mm (9.8mil).
- 3) PCB DAISY CHAIN TRACING LINE WIDTH 0.10mm (3.9mil).

<b>TopLine</b> ®			
TITLE    WLP36T.5C-DC067D 36-BALL P=0.5mm (TEG0510)			
SCALE 15:1	SIZE A	DRAWING NO. 550672	REV A
DO NOT SCALE DRAWING			SHEET 2 OF 2

TOP VIEW

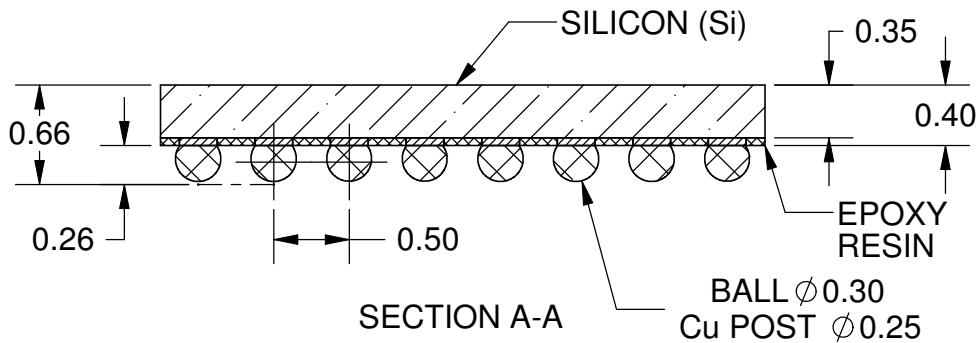


BALL VIEW



Notes: (Unless Otherwise Specified).

- 1) ALL DIMENSIONS ARE IN MM.
- 2) SOLDER BALL ALLOY:  
STANDARD: SAC305 (Sn96.5/Ag3.0/Cu0.5).  
SPECIAL: LF35 (Sn98.3/Ag1.2/Cu0.5).
- 3) BALL DIAMETER (BEFORE REFLOW): 0.30mm.
- 4) NON-SOLDER MASK DEFINED PAD.
- 5) PAD Cu DIAMETER: 0.25mm.
- 6) SUBSTRATE MATERIAL: Si (SILICON).
- 7) DAISY CHAIN PATTERN (SEE PAGE 2).


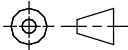


SECTION A-A

BALL  $\phi 0.30$   
Cu POST  $\phi 0.25$

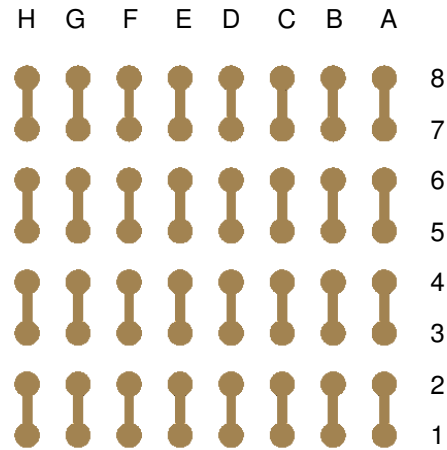
PART NUMBER TABLE

PART NUMBER	BALL ALLOY	Pb-FREE	RoHS	Si DIE
WLP64T.5C-DC088D	Sn96.5/Ag3.0/Cu0.5	YES	YES	YES
WLP64T.5C1-DC088D	Sn98.3/Ag1.2/Cu0.5	YES	YES	YES

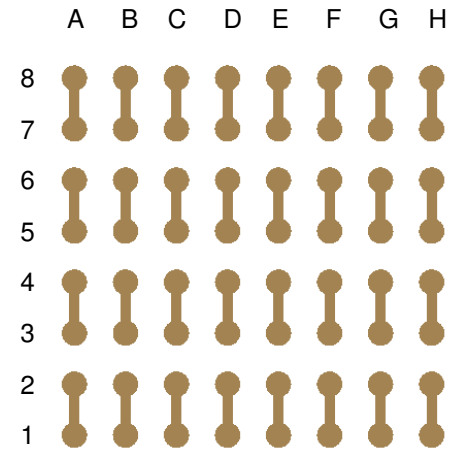
TOLERANCE UNLESS NOTED		APPROVALS		DATE				
X.X	+/- 0.3	DRAWN J. Hines		12/28/2010				
X.XX	+/- 0.03	ENG			TITLE			
X.XXX	+/- 0.003	MFG			WLP64T.5C-DC088D			
ANGLES +/- 0.5°		THIRD ANGLE PROJECTION			64-BALL P=0.5mm (TEG0510)			
ALL DIMENSIONS IN					SCALE	SIZE	DRAWING NO.	REV
<input type="checkbox"/> INCHES <input checked="" type="checkbox"/> MILLIMETERS		QA			20:1	A	550882	A
		CUST			DO NOT SCALE DRAWING		SHEET 1 OF 2	
		REVISED						

# DAISY CHAIN PATTERN

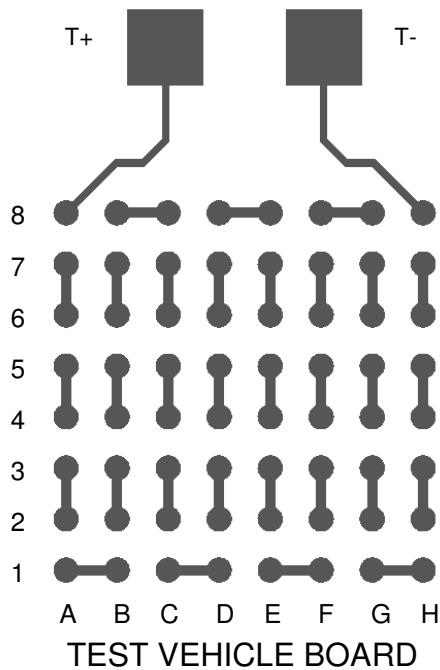
BALL VIEW



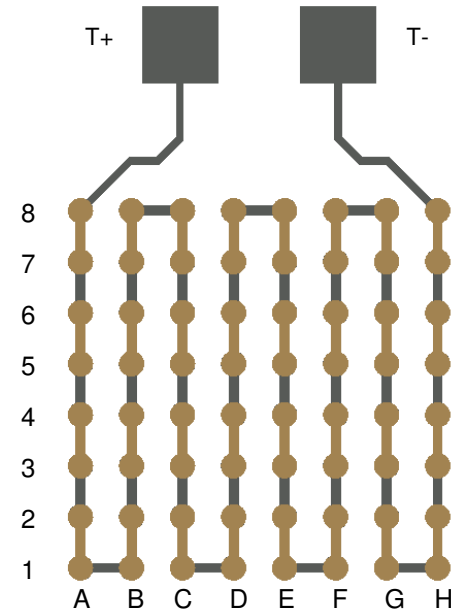
BOTTOM SIDE  
(TOP X-RAY VIEW)



TOP VIEW



AFTER MOUNTING  
TO TEST BOARD  
(TOP X-RAY VIEW)



TEST VEHICLE BOARD

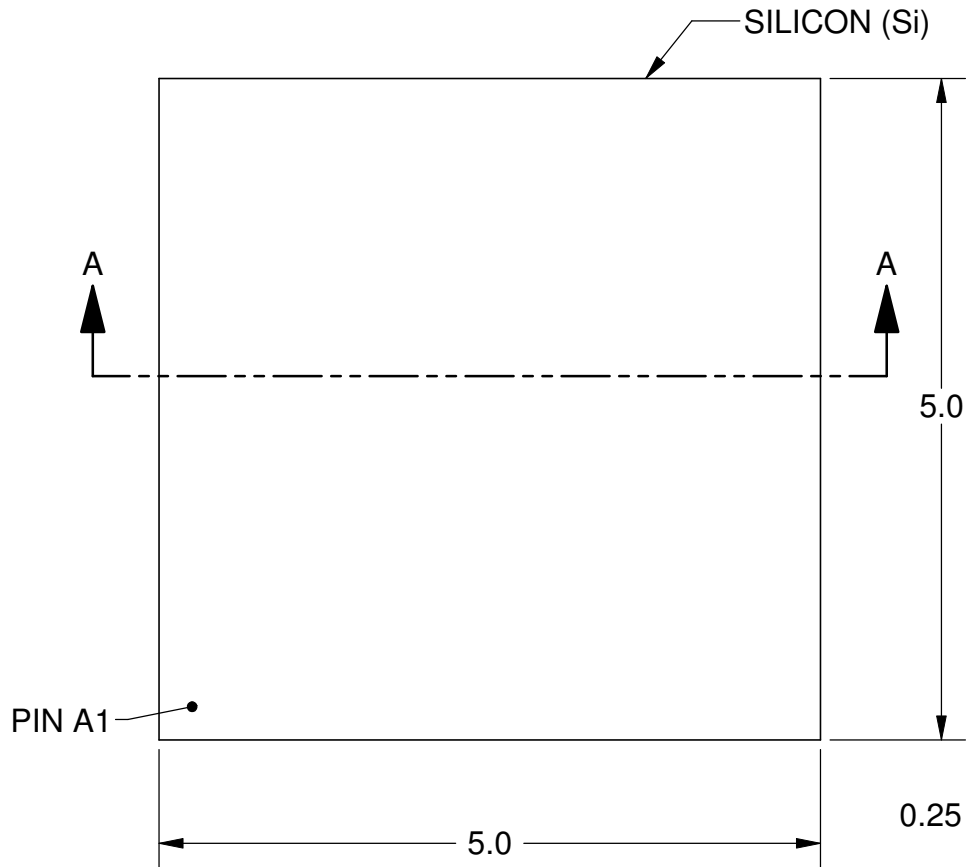
**Notes:**

- 1) PCB BOARD DIMENSIONS ARE PRESENTED ONLY AS A GUIDELINE. DESIGNERS SHOULD USE THEIR OWN EXPERIENCE WHEN DESIGNING PCB.
- 2) PCB Cu BALL PAD DIAMETER 0.25mm (9.8mil).
- 3) PCB DAISY CHAIN TRACING LINE WIDTH 0.10mm (3.9mil).

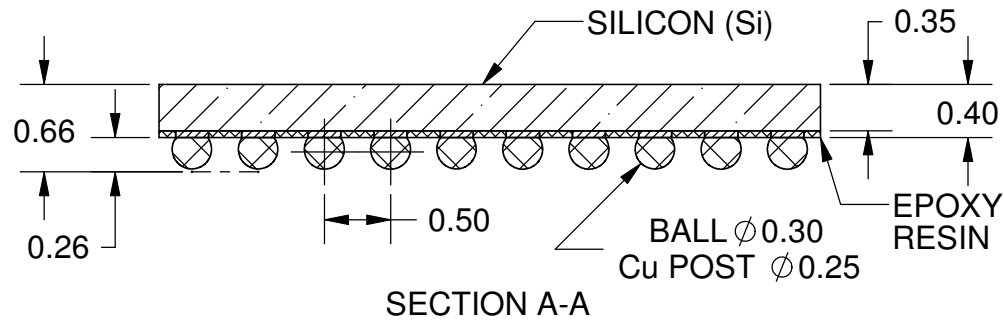
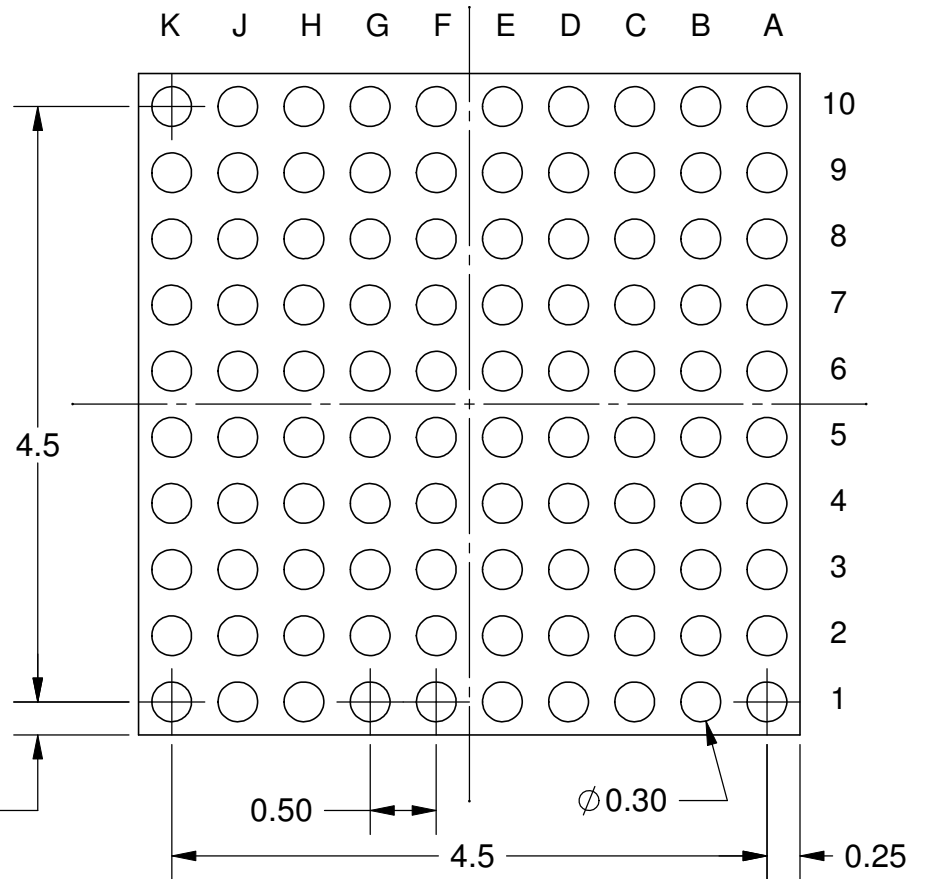
<b>TopLine</b> ®			
TITLE WLP64T.5C-DC088D 64-BALL P=0.5mm (TEG0510)			
SCALE 13.5:1	SIZE A	DRAWING NO. 550882	REV A
DO NOT SCALE DRAWING		SHEET 2 OF 2	



TOP VIEW



BALL VIEW


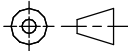


Notes: (Unless Otherwise Specified).

- 1) ALL DIMENSIONS ARE IN MM.
- 2) SOLDER BALL ALLOY:  
STANDARD: SAC305 (Sn96.5/Ag3.0/Cu0.5).  
SPECIAL: LF35 (Sn98.3/Ag1.2/Cu0.5).
- 3) BALL DIAMETER (BEFORE REFLOW): 0.30mm.
- 4) NON-SOLDER MASK DEFINED PAD.
- 5) PAD Cu DIAMETER: 0.25mm.
- 6) SUBSTRATE MATERIAL: Si (SILICON).
- 7) DAISY CHAIN PATTERN (SEE PAGE 2).

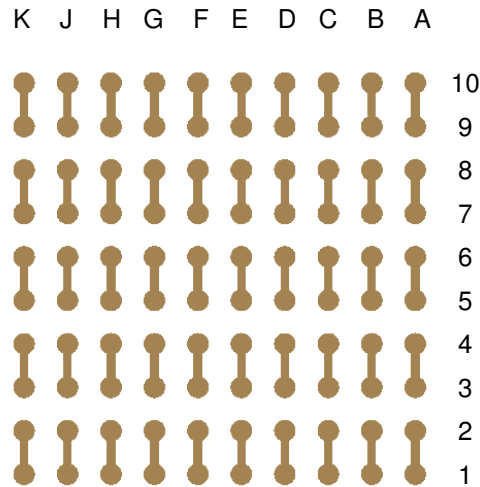
SECTION A-A

PART NUMBER TABLE				
PART NUMBER	BALL ALLOY	Pb-FREE	RoHS	Si DIE
WLP100T.5C-DC108D	Sn96.5/Ag3.0/Cu0.5	YES	YES	YES
WLP100T.5C1-DC108D	Sn98.3/Ag1.2/Cu0.5	YES	YES	YES

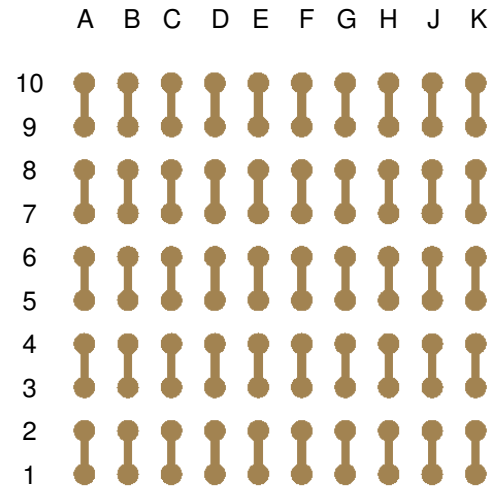
TOLERANCE UNLESS NOTED		APPROVALS		DATE				
X.X	+/- 0.3	DRAWN J. Hines		12/28/2010				
X.XX	+/- 0.03	ENG			TITLE			
X.XXX	+/- 0.003	MFG			WLP100T.5C-DC108D			
ANGLES +/- 0.5°		THIRD ANGLE PROJECTION			100-BALL P=0.5mm (TEG0510)			
ALL DIMENSIONS IN		<input type="checkbox"/> INCHES <input checked="" type="checkbox"/> MILLIMETERS			SCALE	SIZE	DRAWING NO.	REV
					17.5:1	A	551082	A
		REVISED			DO NOT SCALE DRAWING			SHEET 1 OF 2

# DAISY CHAIN PATTERN

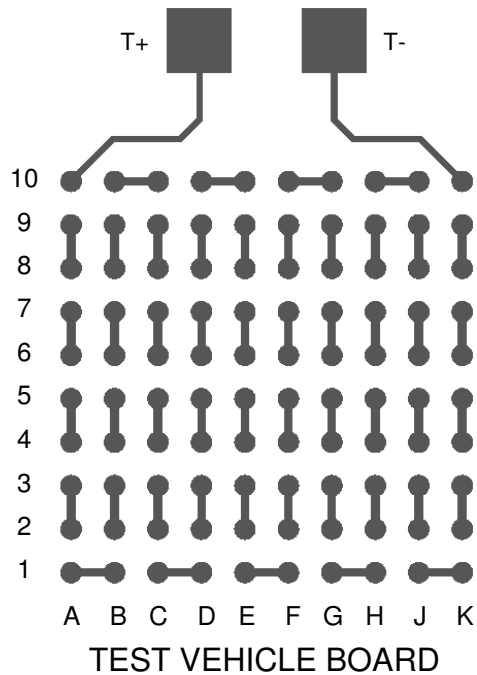
BALL VIEW



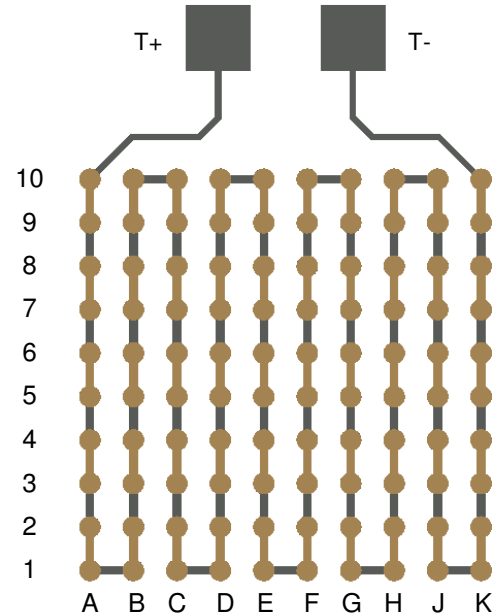
BOTTOM SIDE  
(TOP X-RAY VIEW)



TOP VIEW



AFTER MOUNTING  
TO TEST BOARD  
(TOP X-RAY VIEW)

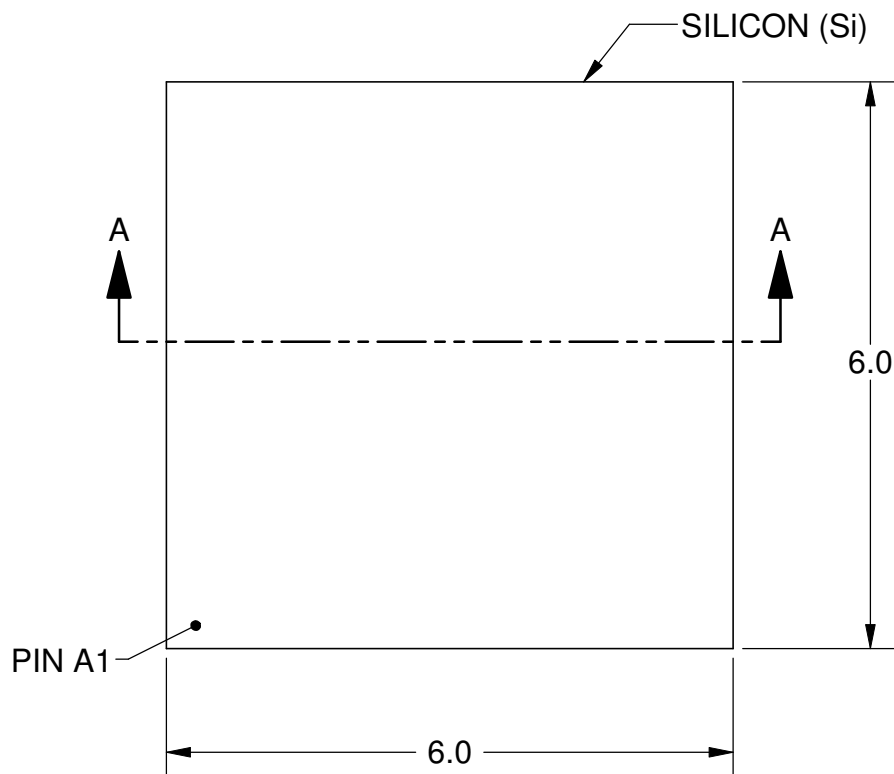


**Notes:**

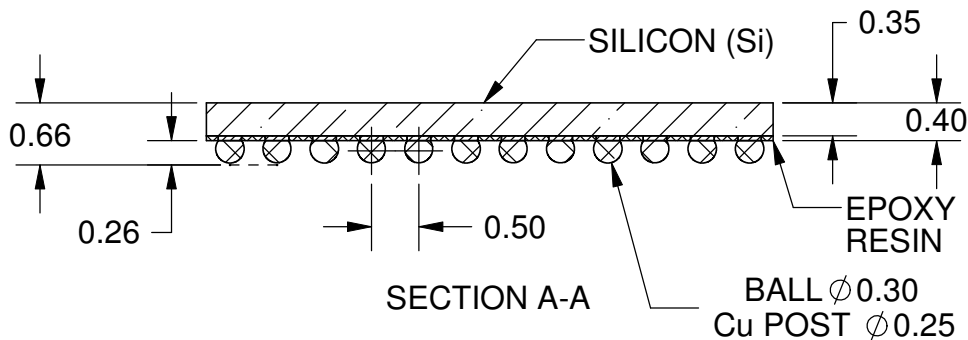
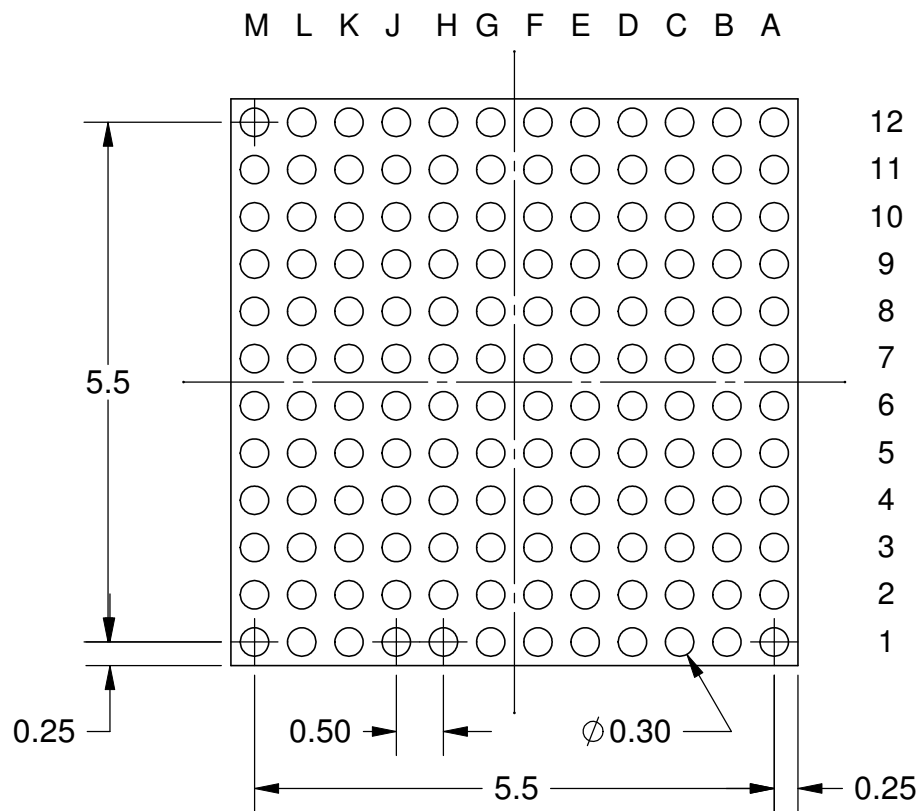
- 1) PCB BOARD DIMENSIONS ARE PRESENTED ONLY AS A GUIDELINE. DESIGNERS SHOULD USE THEIR OWN EXPERIENCE WHEN DESIGNING PCB.
- 2) PCB Cu BALL PAD DIAMETER 0.25mm (9.8mil).
- 3) PCB DAISY CHAIN TRACING LINE WIDTH 0.10mm (3.9mil).

<b>TopLine</b> ®			
TITLE WLP100T.5C-DC108D 100-BALL P=0.5mm (TEG0510)			
SCALE 11.5:1	SIZE A	DRAWING NO. 551082	REV A
DO NOT SCALE DRAWING		SHEET 2 OF 2	

TOP VIEW



BALL VIEW



Notes: (Unless Otherwise Specified).

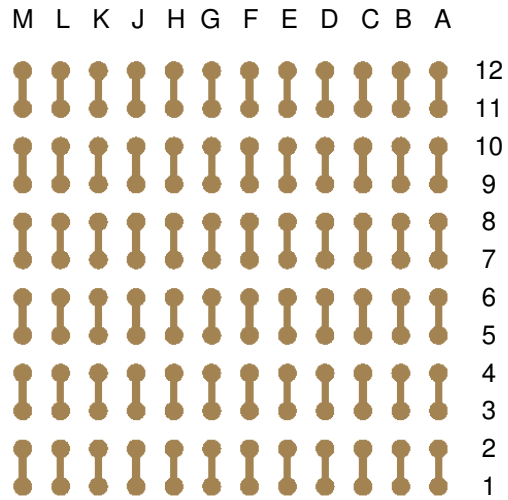
- 1) ALL DIMENSIONS ARE IN MM.
- 2) SOLDER BALL ALLOY:  
STANDARD: SAC305 (Sn96.5/Ag3.0/Cu0.5).  
SPECIAL: LF35 (Sn98.3/Ag1.2/Cu0.5).
- 3) BALL DIAMETER (BEFORE REFLOW): 0.30mm.
- 4) NON-SOLDER MASK DEFINED PAD.
- 5) PAD Cu DIAMETER: 0.25mm.
- 6) SUBSTRATE MATERIAL: Si (SILICON).
- 7) DAISY CHAIN PATTERN (SEE PAGE 2).

PART NUMBER TABLE				
PART NUMBER	BALL ALLOY	Pb-FREE	RoHS	Si DIE
WLP144T.5C-DC127D	Sn96.5/Ag3.0/Cu0.5	YES	YES	YES
WLP144T.5C1-DC127D	Sn98.3/Ag1.2/Cu0.5	YES	YES	YES

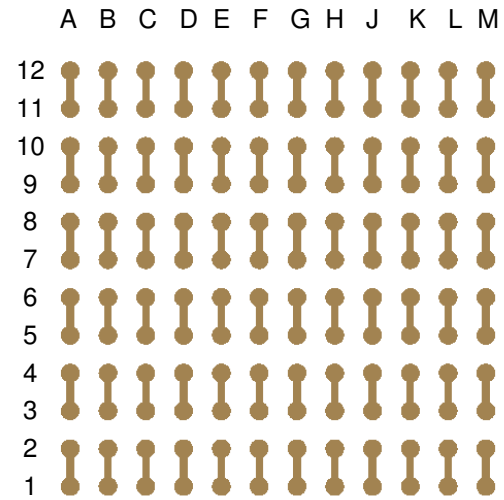
TOLERANCE UNLESS NOTED		APPROVALS		DATE	<b>TopLine</b> <sup>®</sup>			
X.X	+/- 0.3	DRAWN J. Hines		12/28/2010				
X.XX	+/- 0.03	ENG			TITLE WLP144T.5C-DC127D			
X.XXX	+/- 0.003	MFG			144-BALL P=0.5mm (TEG0510)			
ANGLES +/- 0.5°		QA			SCALE	SIZE	DRAWING NO.	REV
ALL DIMENSIONS IN		CUST			12.5:1	A	551272	A
□ INCHES    ☒ MILLIMETERS		REVISED			DO NOT SCALE DRAWING			SHEET 1 OF 2
THIRD ANGLE PROJECTION								

# DAISY CHAIN PATTERN

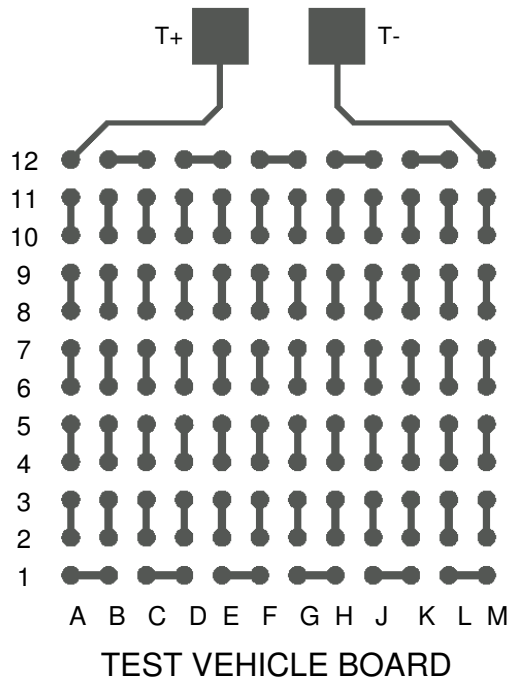
BALL VIEW



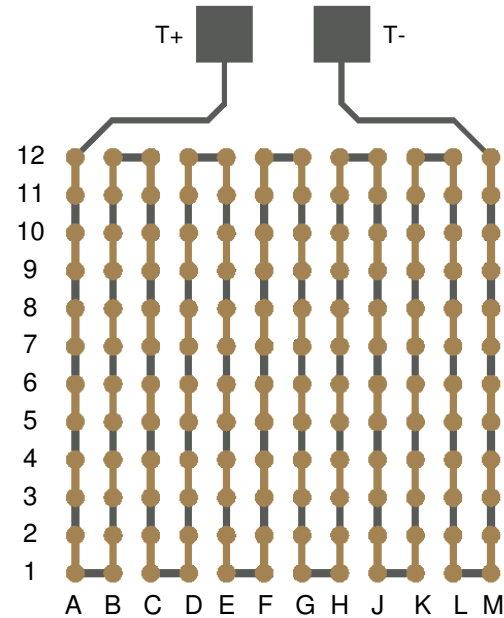
BOTTOM SIDE  
(TOP X-RAY VIEW)



TOP VIEW



AFTER MOUNTING  
TO TEST BOARD  
(TOP X-RAY VIEW)

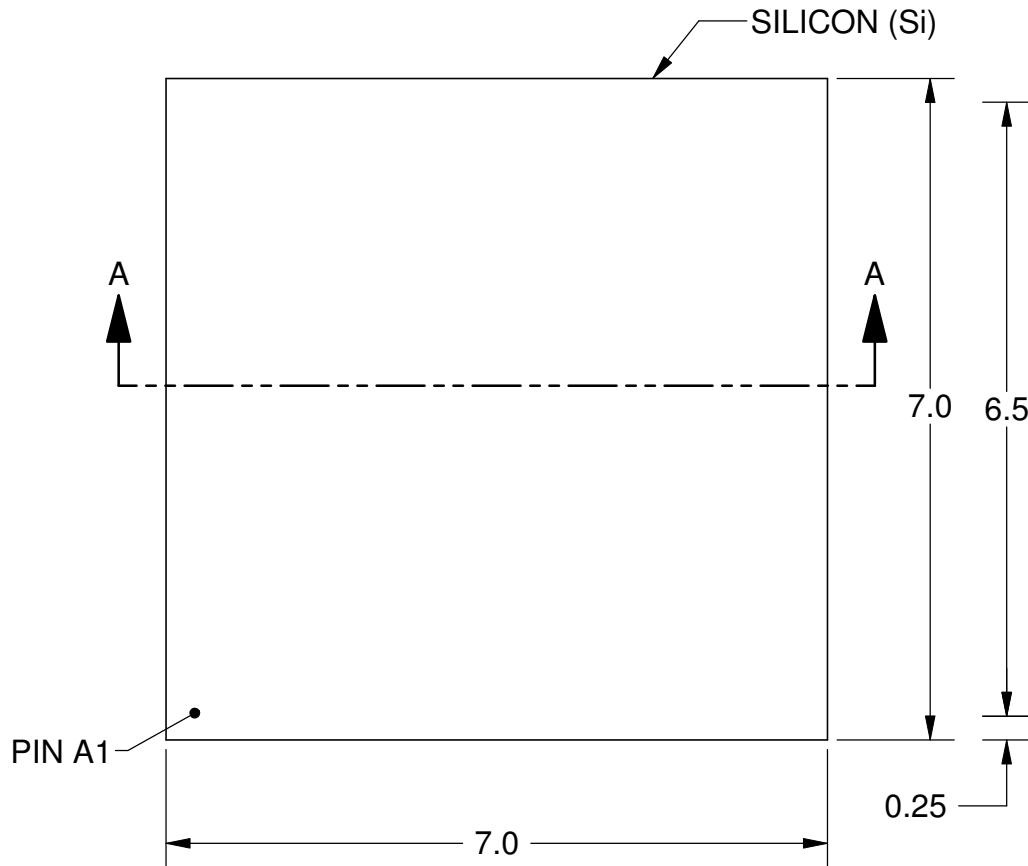


**Notes:**

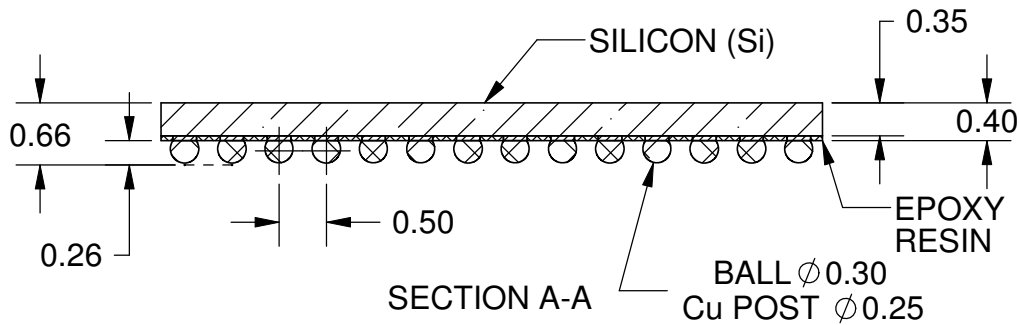
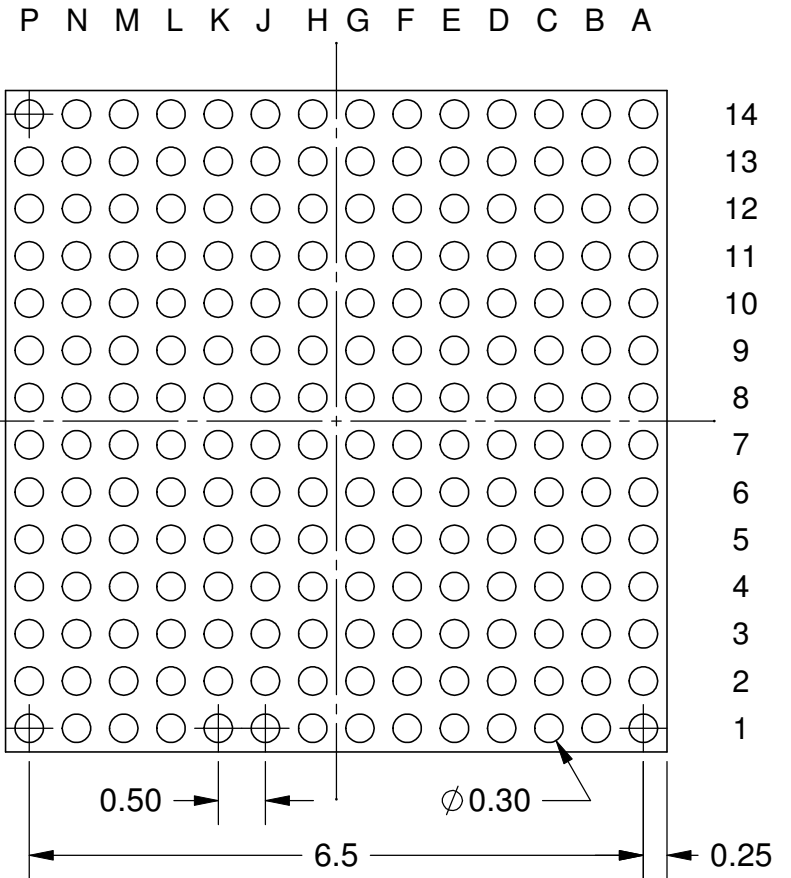
- 1) PCB BOARD DIMENSIONS ARE PRESENTED ONLY AS A GUIDELINE. DESIGNERS SHOULD USE THEIR OWN EXPERIENCE WHEN DESIGNING PCB.
- 2) PCB Cu BALL PAD DIAMETER 0.25mm (9.8mil).
- 3) PCB DAISY CHAIN TRACING LINE WIDTH 0.10mm (3.9mil).

<b>TopLine</b> ®			
TITLE    WLP144T.5C-DC127D 144-BALL P=0.5mm (TEG0510)			
SCALE 10:1	SIZE A	DRAWING NO. 551272	REV A
DO NOT SCALE DRAWING		SHEET 2 OF 2	

TOP VIEW




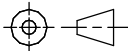
BALL VIEW



Notes: (Unless Otherwise Specified).

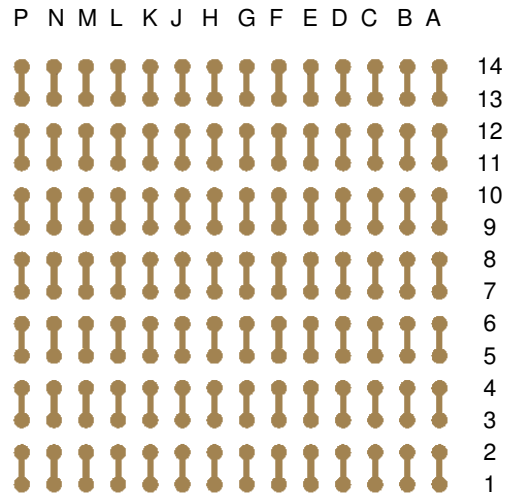
- 1) ALL DIMENSIONS ARE IN MM.
- 2) SOLDER BALL ALLOY:  
STANDARD: SAC305 (Sn96.5/Ag3.0/Cu0.5).  
SPECIAL: LF35 (Sn98.3/Ag1.2/Cu0.5).
- 3) BALL DIAMETER (BEFORE REFLOW): 0.30mm.
- 4) NON-SOLDER MASK DEFINED PAD.
- 5) PAD Cu DIAMETER: 0.25mm.
- 6) SUBSTRATE MATERIAL: Si (SILICON).
- 7) DAISY CHAIN PATTERN (SEE PAGE 2).

PART NUMBER TABLE				
PART NUMBER	BALL ALLOY	Pb-FREE	RoHS	Si DIE
WLP196T.5C-DC148D	Sn96.5/Ag3.0/Cu0.5	YES	YES	YES
WLP196T.5C1-DC148D	Sn98.3/Ag1.2/Cu0.5	YES	YES	YES

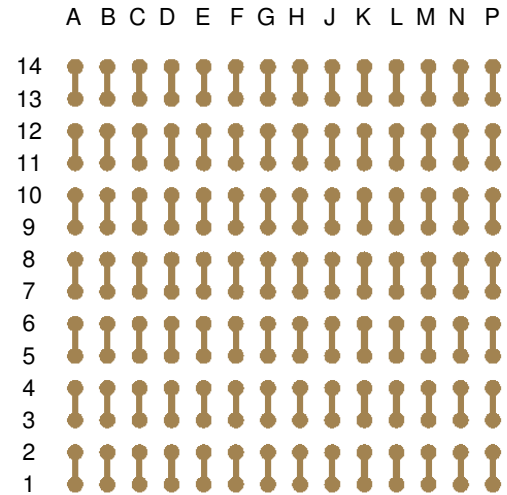
TOLERANCE UNLESS NOTED		APPROVALS		DATE				
X.X	+/- 0.3	DRAWN J. Hines		12/28/2010				
X.XX	+/- 0.03	ENG			TITLE			
X.XXX	+/- 0.003	MFG			WLP196T.5C-DC148D			
ANGLES +/- 0.5°		THIRD ANGLE PROJECTION			196-BALL P=0.5mm (TEG0510)			
ALL DIMENSIONS IN		<input type="checkbox"/> INCHES <input checked="" type="checkbox"/> MILLIMETERS			SCALE	SIZE	DRAWING NO.	REV
					12.5:1	A	551482	A
		REVISED			DO NOT SCALE DRAWING			SHEET 1 OF 2

# DAISY CHAIN PATTERN

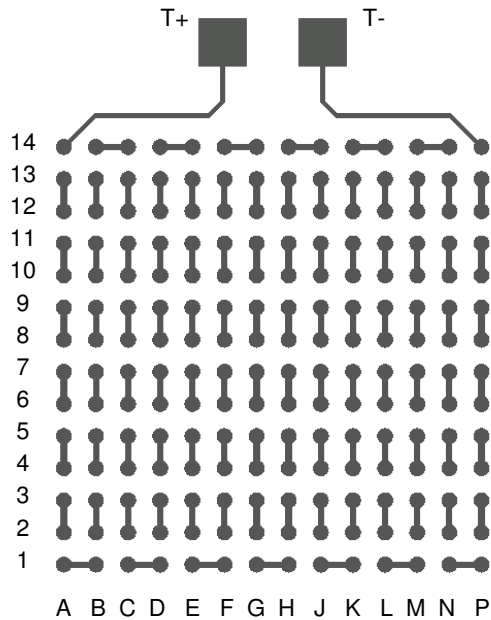
BALL VIEW



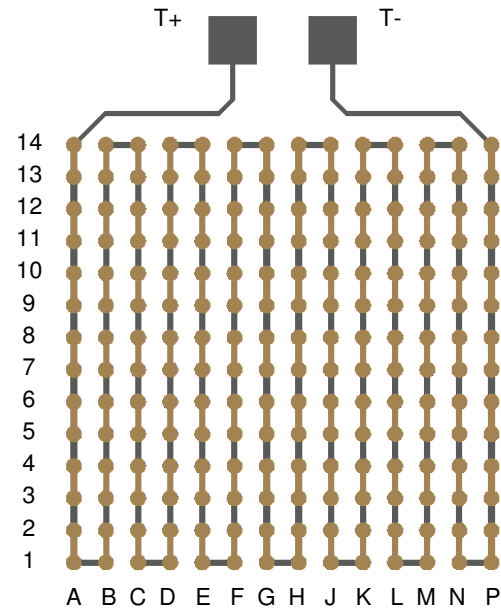
BOTTOM SIDE  
(TOP X-RAY VIEW)



TOP VIEW



AFTER MOUNTING  
TO TEST BOARD  
(TOP X-RAY VIEW)



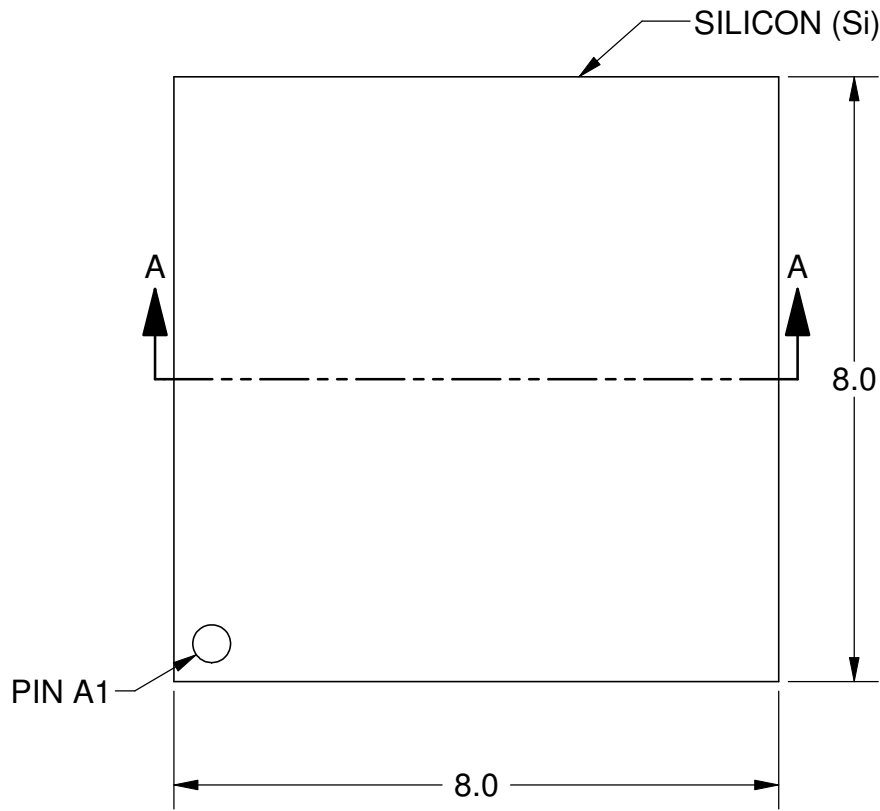
TEST VEHICLE BOARD

**Notes:**

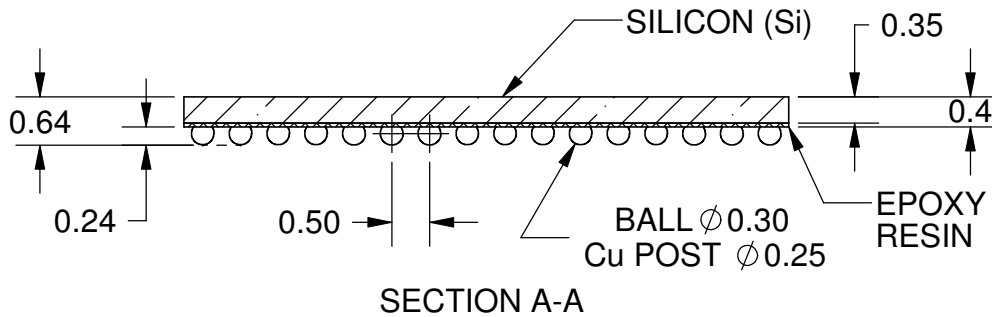
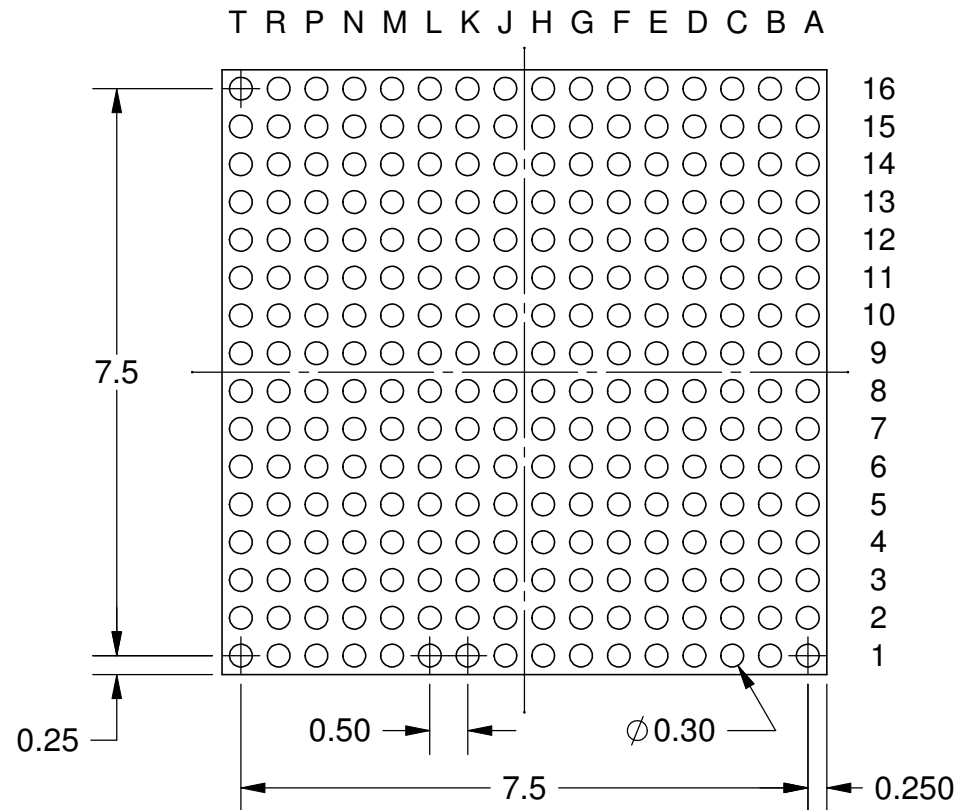
- 1) PCB BOARD DIMENSIONS ARE PRESENTED ONLY AS A GUIDELINE. DESIGNERS SHOULD USE THEIR OWN EXPERIENCE WHEN DESIGNING PCB.
- 2) PCB Cu BALL PAD DIAMETER 0.25mm (9.8mil).
- 3) PCB DAISY CHAIN TRACING LINE WIDTH 0.10mm (3.9mil).

<b>TopLine</b> ®			
TITLE    WLP196T.5C-DC148D 196-BALL P=0.5mm (TEG0510)			
SCALE	SIZE	DRAWING NO.	REV
8.5:1	A	551482	A
DO NOT SCALE DRAWING			SHEET 2 OF 2

TOP VIEW



BALL VIEW



Notes: (Unless Otherwise Specified).

- 1) ALL DIMENSIONS ARE IN MM.
- 2) SOLDER BALL ALLOY:  
STANDARD: SAC305 (Sn96.5/Ag3.0/Cu0.5).  
SPECIAL: LF35 (Sn98.3/Ag1.2/Cu0.5).
- 3) BALL DIAMETER (BEFORE REFLOW): 0.30mm.
- 4) NON-SOLDER MASK DEFINED PAD.
- 5) PAD Cu DIAMETER: 0.25mm.
- 6) SUBSTRATE MATERIAL: Si (SILICON).
- 7) DAISY CHAIN PATTERN (SEE PAGE 2).

SECTION A-A

PART NUMBER TABLE				
PART NUMBER	BALL ALLOY	Pb-FREE	RoHS	Si DIE
WLP256T.5C-DC168D	Sn96.5/Ag3.0/Cu0.5	YES	YES	YES
WLP256T.5C1-DC168D	Sn98.3/Ag1.2/Cu0.5	YES	YES	YES

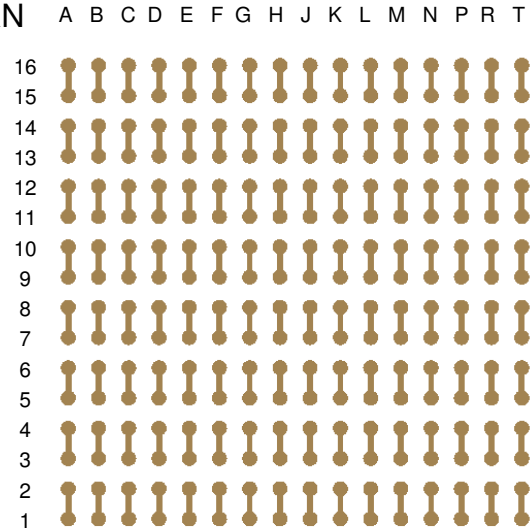
TOLERANCE UNLESS NOTED		APPROVALS		DATE				
X.X	+/- 0.3	DRAWN J. Hines		12/28/2010				
X.XX	+/- 0.03	ENG			TITLE			
X.XXX	+/- 0.003	MFG			WLP256T.5C-DC168D			
ANGLES +/- 0.5°		THIRD ANGLE PROJECTION			256-BALL P=0.5mm (TEG0510)			
ALL DIMENSIONS IN		<input type="checkbox"/> INCHES <input checked="" type="checkbox"/> MILLIMETERS			SCALE	SIZE	DRAWING NO.	REV
					10:1	A	551682	A
		REVISED			DO NOT SCALE DRAWING			SHEET 1 OF 2

BALL VIEW

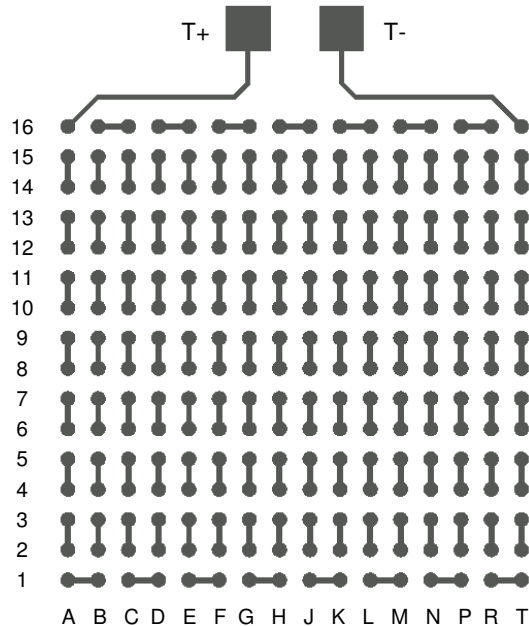


DAISY CHAIN PATTERN

BOTTOM SIDE  
(TOP X-RAY VIEW)

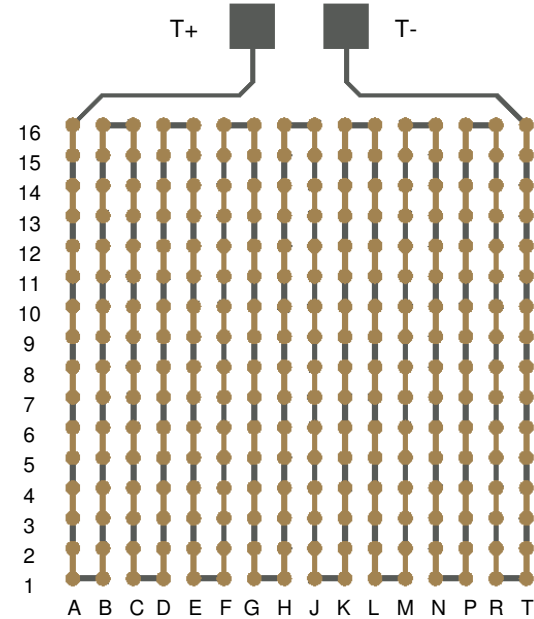


TOP VIEW



TEST VEHICLE BOARD

AFTER MOUNTING  
TO TEST BOARD  
(TOP X-RAY VIEW)



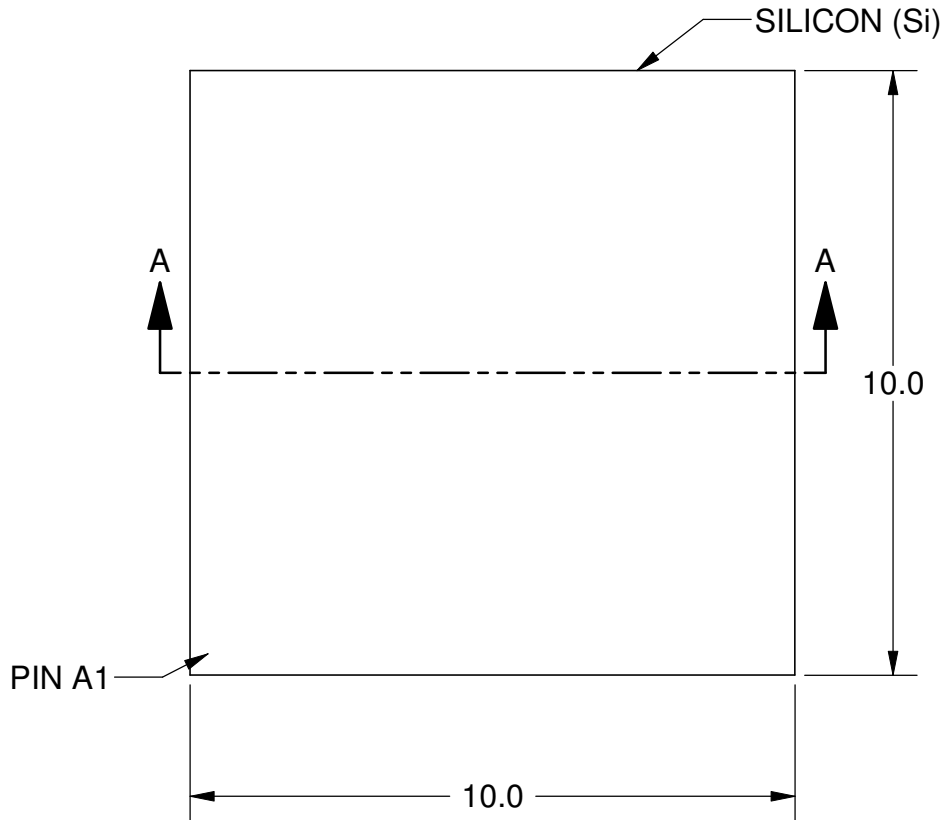
Notes:

- 1) PCB BOARD DIMENSIONS ARE PRESENTED ONLY AS A GUIDELINE. DESIGNERS SHOULD USE THEIR OWN EXPERIENCE WHEN DESIGNING PCB.
- 2) PCB Cu BALL PAD DIAMETER 0.25mm (9.8mil).
- 3) PCB DAISY CHAIN TRACING LINE WIDTH 0.10mm (3.9mil).

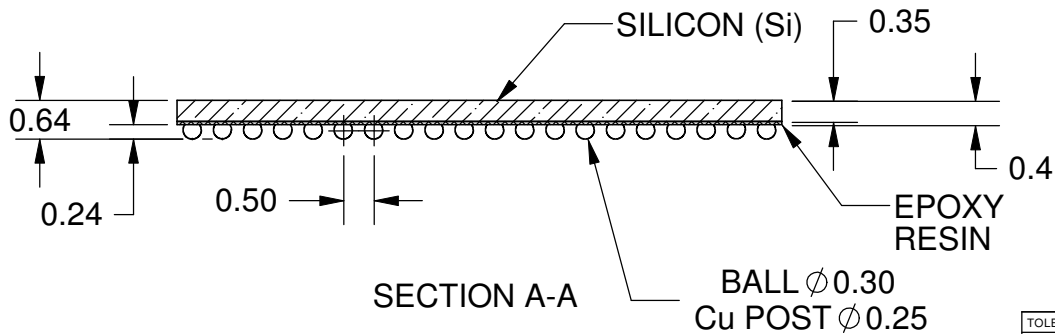
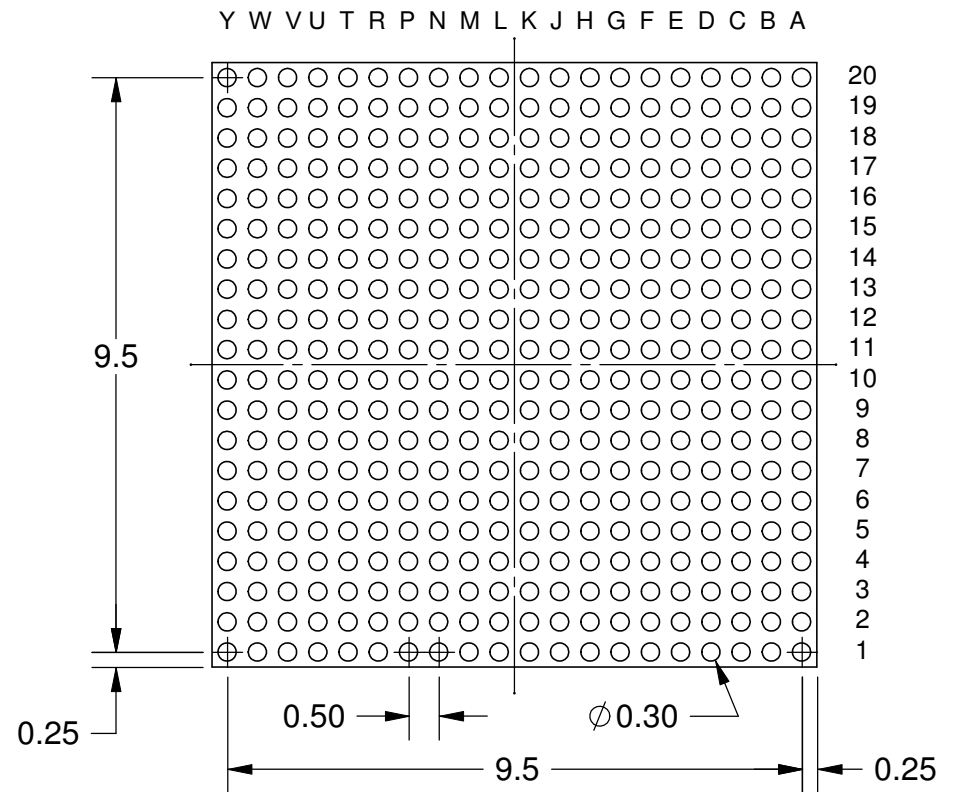
<b>TopLine</b> ®			
TITLE WLP256T.5C-DC168D 256-BALL P=0.5mm (TEG0510)			
SCALE 8:1	SIZE A	DRAWING NO. 551682	REV A
DO NOT SCALE DRAWING		SHEET 2 OF 2	



TOP VIEW




BALL VIEW



Notes: (Unless Otherwise Specified).

- 1) ALL DIMENSIONS ARE IN MM.
- 2) SOLDER BALL ALLOY:  
STANDARD: SAC305 (Sn96.5/Ag3.0/Cu0.5).  
SPECIAL: LF35 (Sn98.3/Ag1.2/Cu0.5).
- 3) BALL DIAMETER (BEFORE REFLOW): 0.30mm.
- 4) NON-SOLDER MASK DEFINED PAD.
- 5) PAD Cu DIAMETER: 0.25mm.
- 6) SUBSTRATE MATERIAL: Si (SILICON).
- 7) DAISY CHAIN PATTERN (SEE PAGE 2).

PART NUMBER TABLE				
PART NUMBER	BALL ALLOY	Pb-FREE	RoHS	Si DIE
WLP400T.5C-DC208D	Sn96.5/Ag3.0/Cu0.5	YES	YES	YES
WLP400T.5C1-DC208D	Sn98.3/Ag1.2/Cu0.5	YES	YES	YES

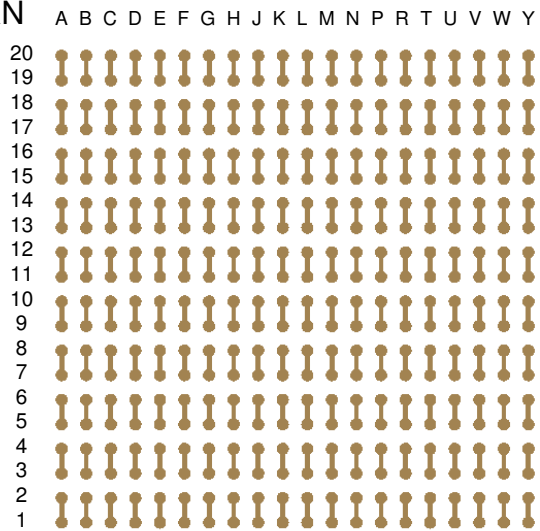
TOLERANCE UNLESS NOTED		APPROVALS		DATE				
X.X	+/- 0.3	DRAWN J. Hines		12/28/2010				
X.XX	+/- 0.03	ENG			TITLE WLP400T.5C-DC208D			
X.XXX	+/- 0.003	MFG			400-BALL P=0.5mm (TEG0510)			
ANGLES +/- 0.5°		QA			SCALE	SIZE	DRAWING NO.	REV
ALL DIMENSIONS IN		CUST			8:1	A	552082	A
<input type="checkbox"/> INCHES <input checked="" type="checkbox"/> MILLIMETERS		REVISED			DO NOT SCALE DRAWING			SHEET 1 OF 2

BALL VIEW

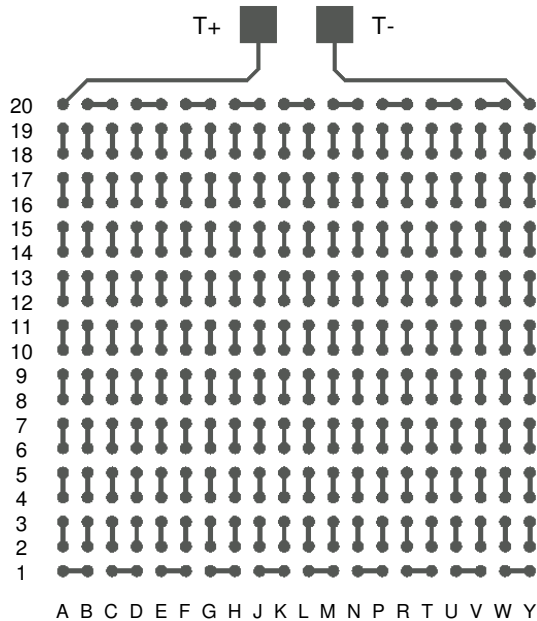


DAISY CHAIN PATTERN

BOTTOM SIDE  
(TOP X-RAY VIEW)

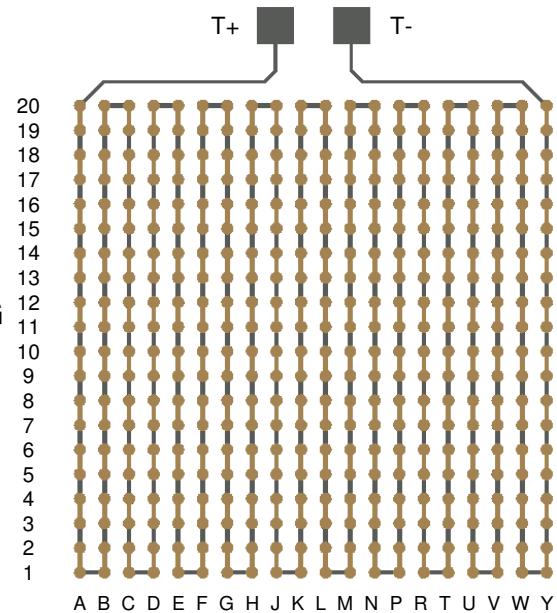


TOP VIEW



TEST VEHICLE BOARD

AFTER MOUNTING  
TO TEST BOARD  
(TOP X-RAY VIEW)

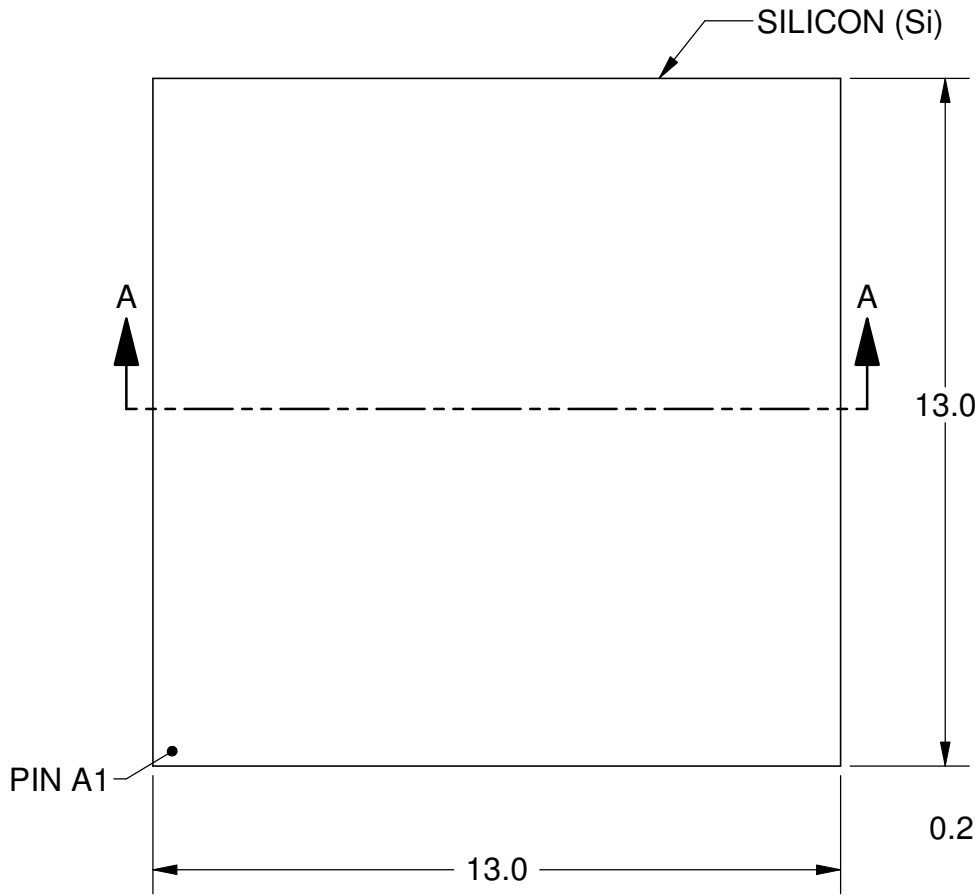


Notes:

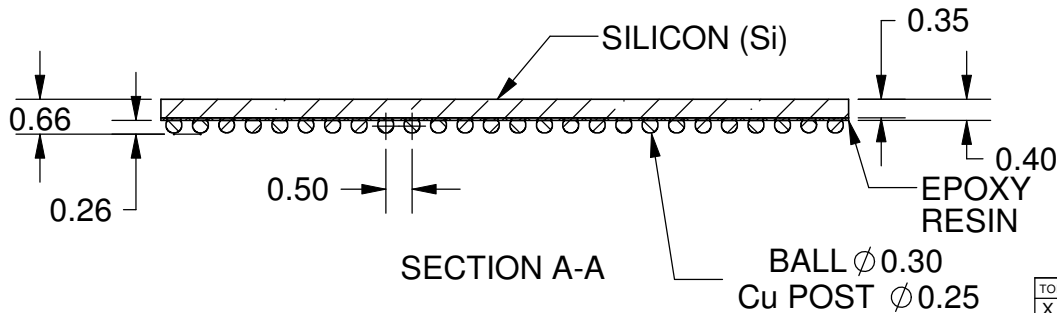
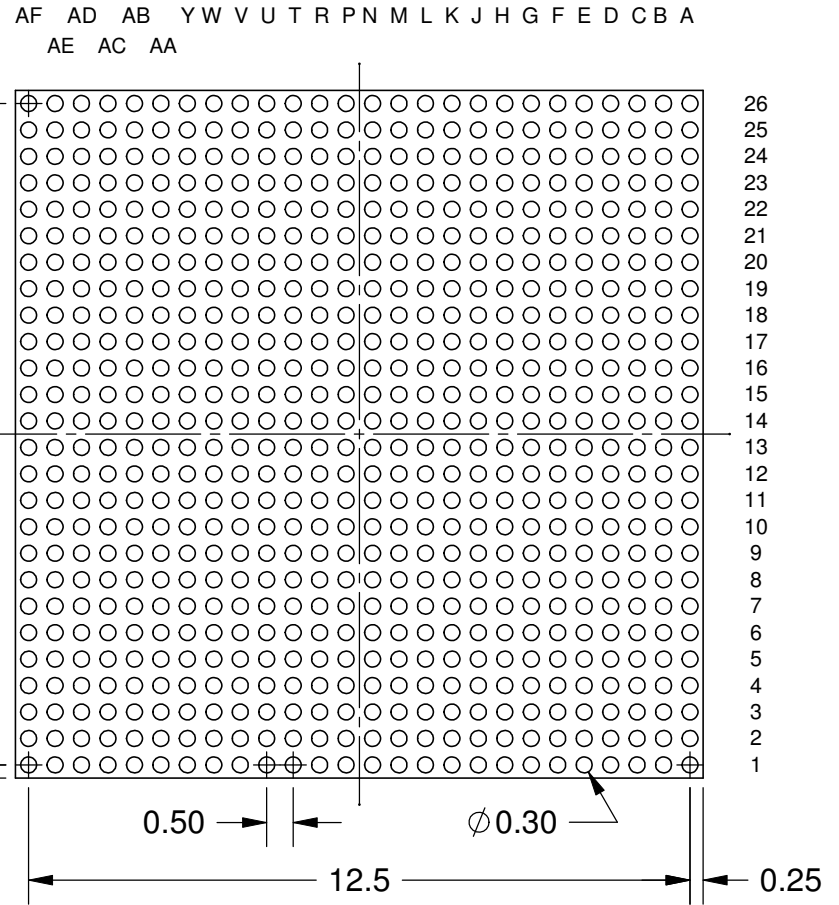
- 1) PCB BOARD DIMENSIONS ARE PRESENTED ONLY AS A GUIDELINE. DESIGNERS SHOULD USE THEIR OWN EXPERIENCE WHEN DESIGNING PCB.
- 2) PCB Cu BALL PAD DIAMETER 0.25mm (9.8mil).
- 3) PCB DAISY CHAIN TRACING LINE WIDTH 0.10mm (3.9mil).

<b>TopLine</b> ®			
TITLE WLP400T.5C-DC208D 400-BALL P=0.5mm (TEG0510)			
SCALE 6.5:1	SIZE A	DRAWING NO. 552082	REV A
DO NOT SCALE DRAWING		SHEET 2 OF 2	

TOP VIEW



BALL VIEW



Notes: (Unless Otherwise Specified).

- 1) ALL DIMENSIONS ARE IN MM.
- 2) SOLDER BALL ALLOY:  
STANDARD: SAC305 (Sn96.5/Ag3.0/Cu0.5).  
SPECIAL: LF35 (Sn98.3/Ag1.2/Cu0.5).
- 3) BALL DIAMETER (BEFORE REFLOW): 0.30mm.
- 4) NON-SOLDER MASK DEFINED PAD.
- 5) PAD Cu DIAMETER: 0.25mm.
- 6) SUBSTRATE MATERIAL: Si (SILICON).
- 7) DAISY CHAIN PATTERN (SEE PAGE 2).

PART NUMBER TABLE				
PART NUMBER	BALL ALLOY	Pb-FREE	RoHS	Si DIE
WLP676T.5C-DC260D	Sn96.5/Ag3.0/Cu0.5	YES	YES	YES
WLP676T.5C1-DC260D	Sn98.3/Ag1.2/Cu0.5	YES	YES	YES

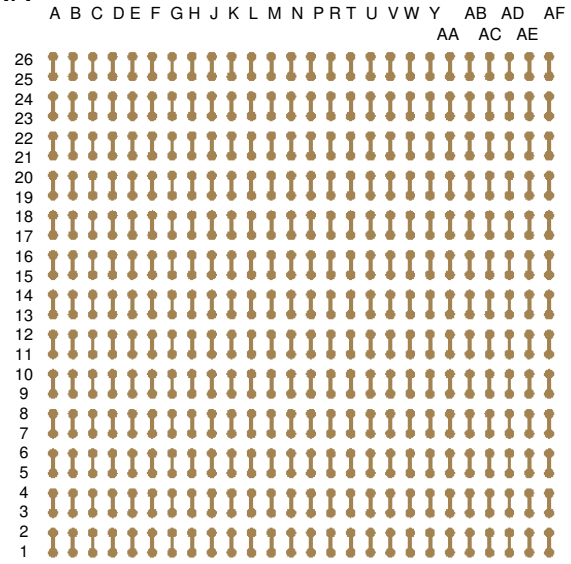
TOLERANCE UNLESS NOTED		APPROVALS	DATE
X.X	+/- 0.3	DRAWN J. Hines	12/28/2010
X.XX	+/- 0.03		
X.XXX	+/- 0.003		
ANGLES +/- 0.5°		ENG	
ALL DIMENSIONS IN		MFG	
<input type="checkbox"/> INCHES <input checked="" type="checkbox"/> MILLIMETERS		QA	
THIRD ANGLE PROJECTION		CUST	
		REVISED	

TITLE WLP676T.5C-DC260D			
676-BALL P=0.5mm (TEG0510)			
SCALE 7:1	SIZE A	DRAWING NO. 552602	REV A
DO NOT SCALE DRAWING			SHEET 1 OF 2

BALL VIEW

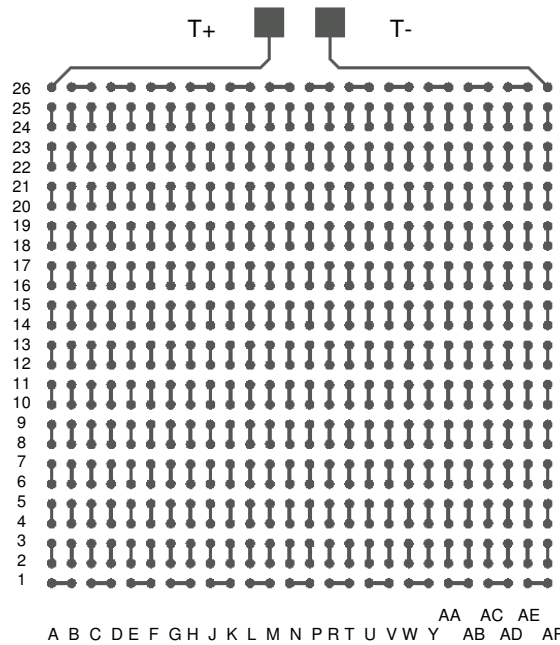


DAISY CHAIN PATTERN

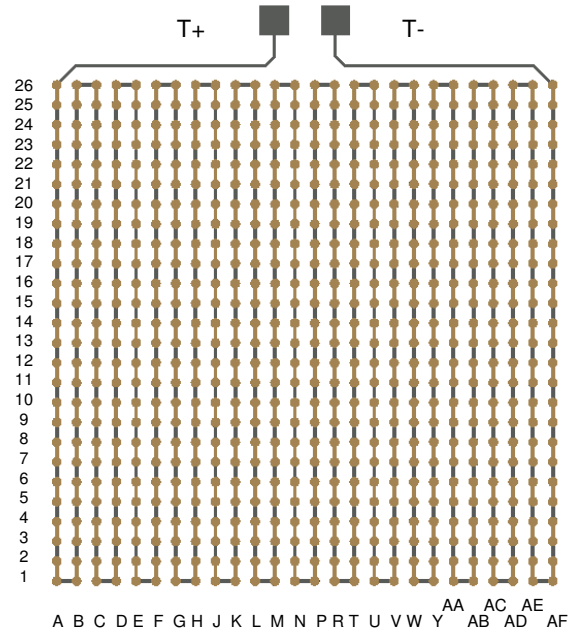


BOTTOM SIDE  
(TOP X-RAY VIEW)

TOP VIEW



AFTER MOUNTING  
TO TEST BOARD  
(TOP X-RAY VIEW)



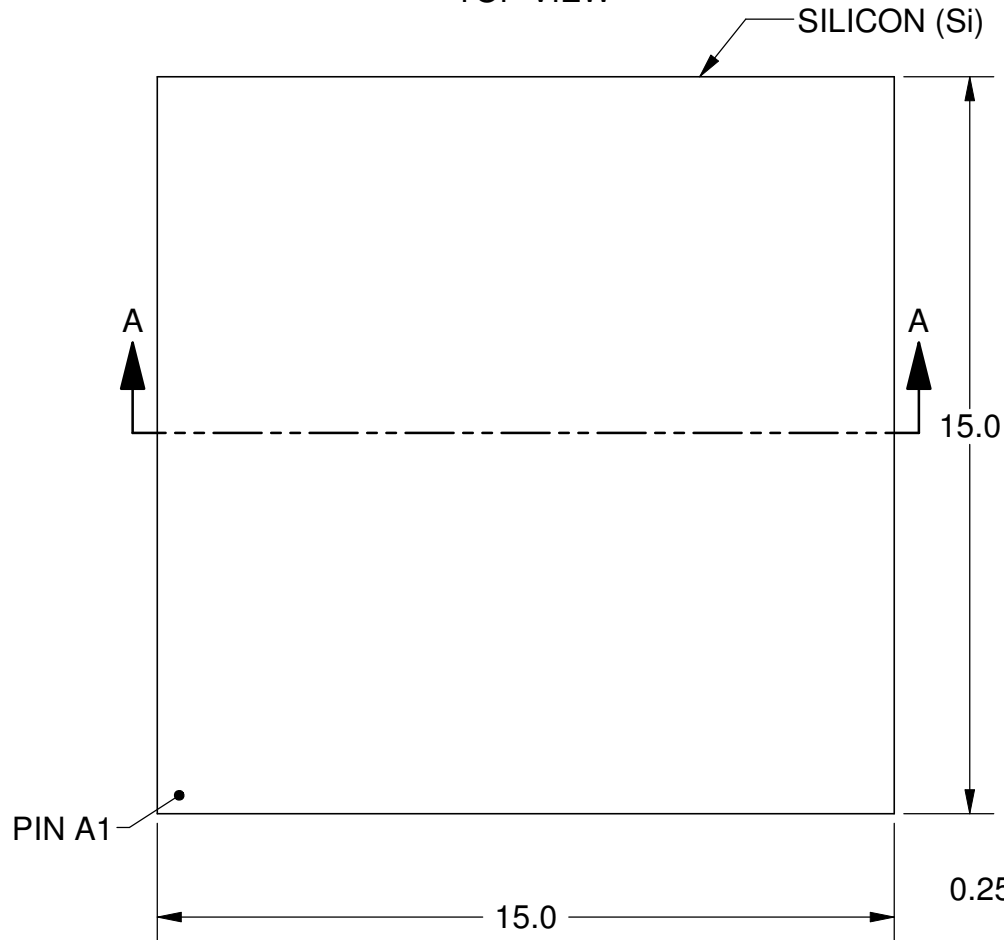
TEST VEHICLE BOARD

Notes:

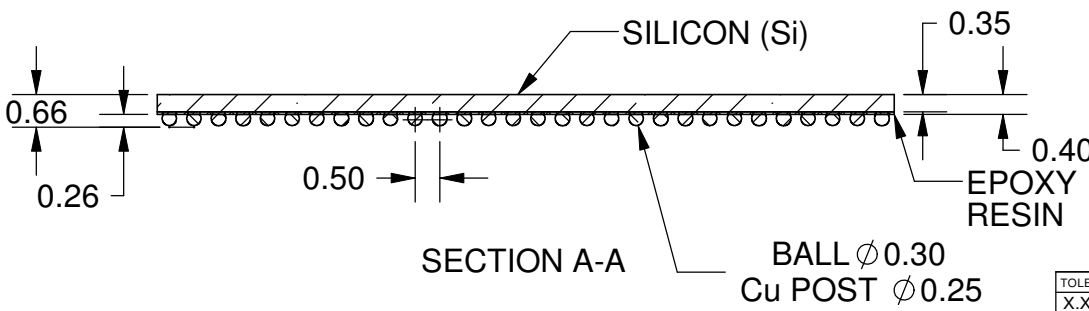
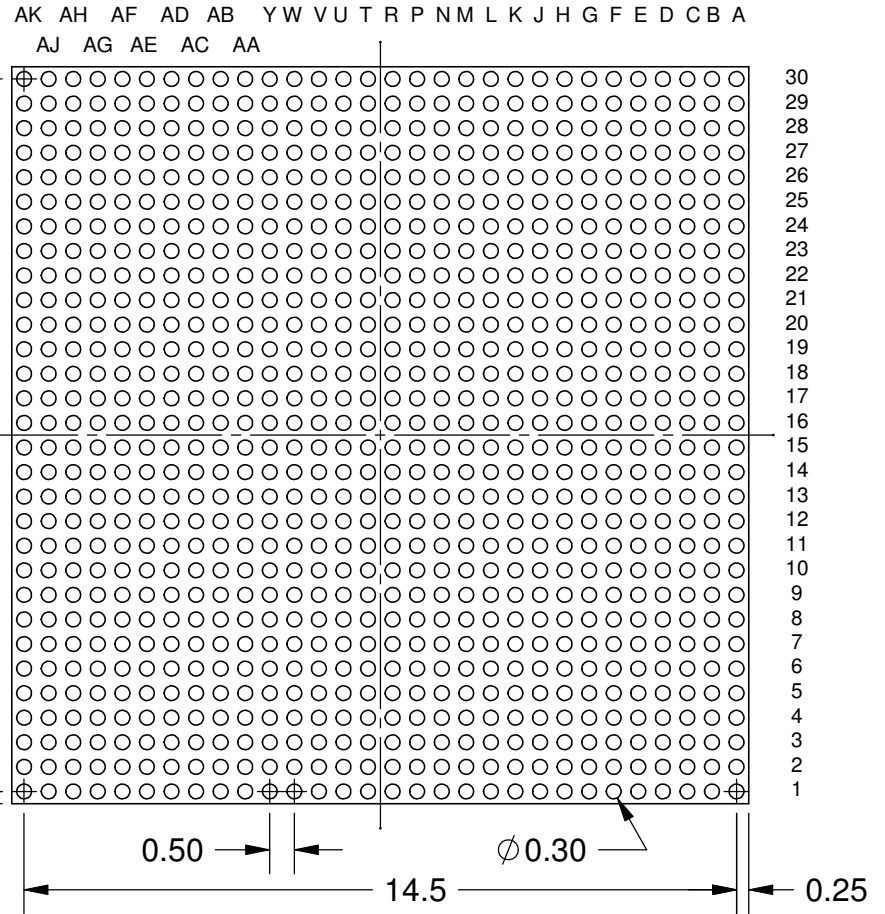
- 1) PCB BOARD DIMENSIONS ARE PRESENTED ONLY AS A GUIDELINE. DESIGNERS SHOULD USE THEIR OWN EXPERIENCE WHEN DESIGNING PCB.
- 2) PCB Cu BALL PAD DIAMETER 0.25mm (9.8mil).
- 3) PCB DAISY CHAIN TRACING LINE WIDTH 0.10mm (3.9mil).

<b>TopLine</b> ®			
TITLE WLP676T.5C-DC260D 676-BALL P=0.5mm (TEG0510)			
SCALE 5.25:1	SIZE A	DRAWING NO. 552602	REV A
DO NOT SCALE DRAWING		SHEET 2 OF 2	

TOP VIEW



BALL VIEW



Notes: (Unless Otherwise Specified).

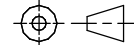
- 1) ALL DIMENSIONS ARE IN MM.
- 2) SOLDER BALL ALLOY:  
STANDARD: SAC305 (Sn96.5/Ag3.0/Cu0.5).  
SPECIAL: LF35 (Sn98.3/Ag1.2/Cu0.5).
- 3) BALL DIAMETER (BEFORE REFLOW): 0.30mm.
- 4) NON-SOLDER MASK DEFINED PAD.
- 5) PAD Cu DIAMETER: 0.25mm.
- 6) SUBSTRATE MATERIAL: Si (SILICON).
- 7) DAISY CHAIN PATTERN (SEE PAGE 2).

PART NUMBER TABLE

PART NUMBER	BALL ALLOY	Pb-FREE	RoHS	Si DIE
WLP900T.5C-DC307D	Sn96.5/Ag3.0/Cu0.5	YES	YES	YES
WLP900T.5C1-DC307D	Sn98.3/Ag1.2/Cu0.5	YES	YES	YES

TOLERANCE UNLESS NOTED	
X.X	+/- 0.3
X.XX	+/- 0.03
X.XXX	+/- 0.003
ANGLES	+/- 0.5°
ALL DIMENSIONS IN	
<input type="checkbox"/> INCHES	<input checked="" type="checkbox"/> MILLIMETERS

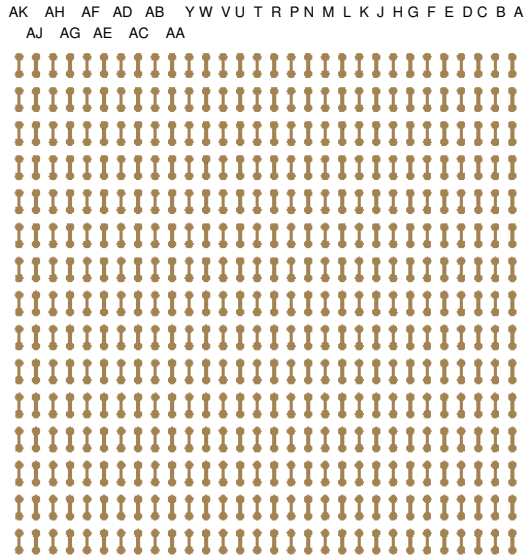
THIRD ANGLE PROJECTION



APPROVALS	DATE
DRAWN J. Hines	12/28/2010
ENG	
MFG	
QA	
CUST	
REVISED	

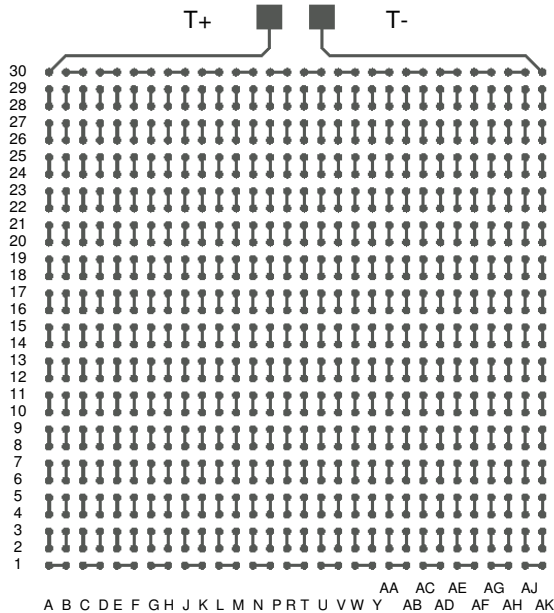
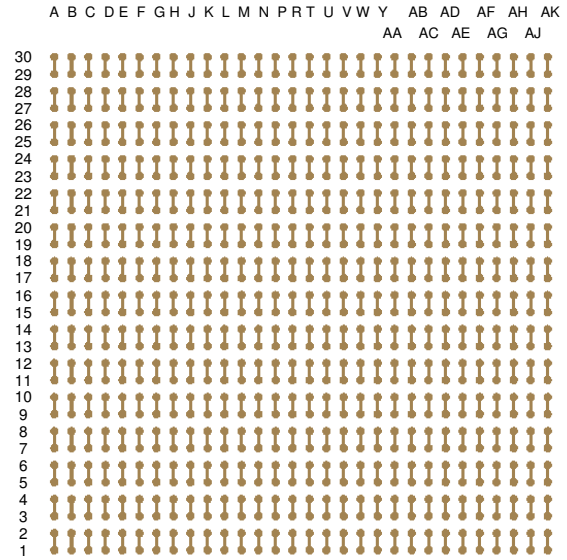
<b>TopLine</b>			
TITLE WLP900T.5C-DC307D 900-BALL P=0.5mm (TEG0510)			
SCALE	SIZE	DRAWING NO.	REV
6.5:1	A	553072	A
DO NOT SCALE DRAWING			SHEET 1 OF 2

# DAISY CHAIN PATTERN



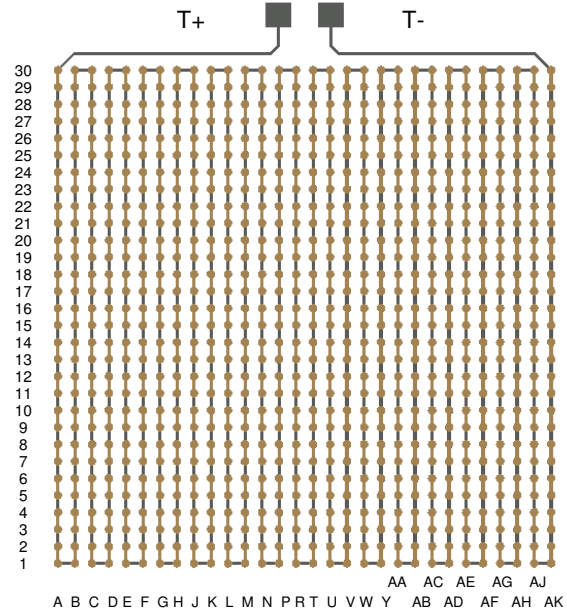
BALL VIEW

BOTTOM SIDE  
(TOP X-RAY VIEW)



TOP VIEW

AFTER MOUNTING  
TO TEST BOARD  
(TOP X-RAY VIEW)



## TEST VEHICLE BOARD

**Notes:**

- 1) PCB BOARD DIMENSIONS ARE PRESENTED ONLY AS A GUIDELINE. DESIGNERS SHOULD USE THEIR OWN EXPERIENCE WHEN DESIGNING PCB.
- 2) PCB Cu BALL PAD DIAMETER 0.25mm (9.8mil).
- 3) PCB DAISY CHAIN TRACING LINE WIDTH 0.10mm (3.9mil).

<b>TopLine</b> ®			
TITLE    WLP900T.5C-DC307D 900-BALL P=0.5mm (TEG0510)			
SCALE	SIZE	DRAWING NO.	REV
4.5:1	A	553072	A
DO NOT SCALE DRAWING			SHEET 2 OF 2