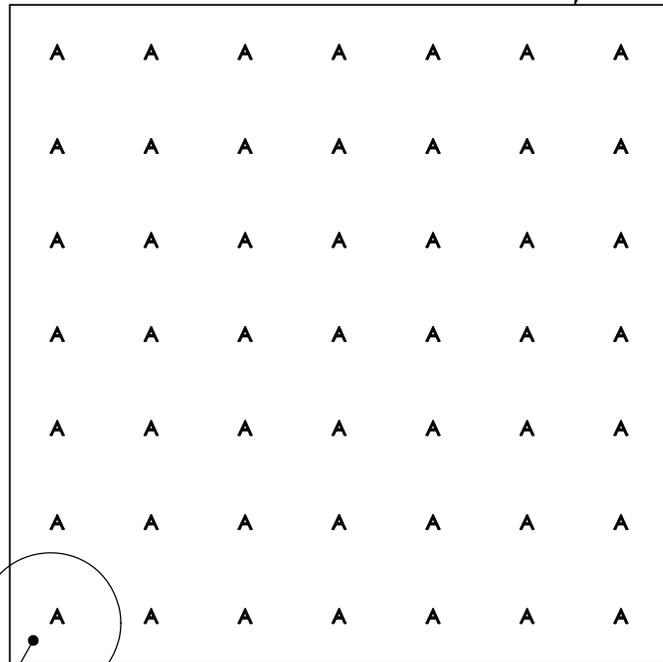


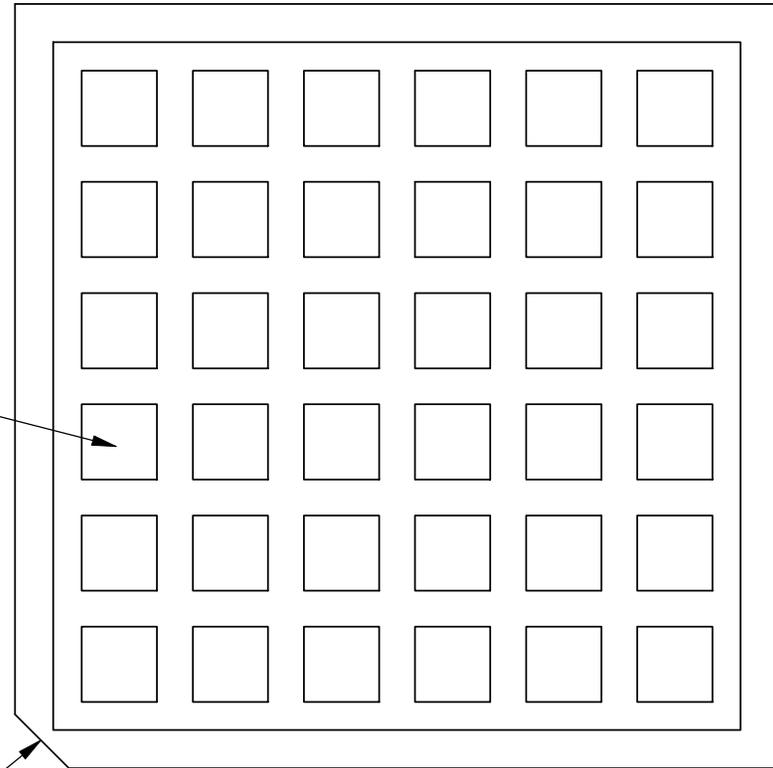
TOP VIEW

SILICON (Si)



EXAMPLE ORIENTATION OF MARKINGS ON WLP

TYPICAL WAFFLE PACK IC CHIP TRAY
SCALE = 2:1



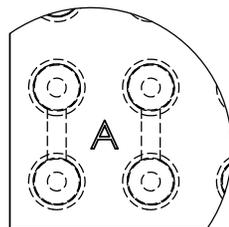
2.00 OR 4.00

NUMBER OF POCKETS WILL CHANGE BASED ON THE SIZE OF THE WLP CHIP

PIN 1 CHAMFER

Notes: (Unless Otherwise Specified).

- 1) EXAMPLE OF TOP SIDE LASER MARKING.
- 2) ORIENT LETTERS FOR LOCATION OF PIN A1 CORNER.
- 3) ALLOWABLE LETTER MARKING: A, F, T, M, L, Y, AND P.
- 4) SINGLE LETTER IS REPEATED MULTIPLE TIMES ACROSS TOP SIDE.
- 5) DAISY CHAIN IS HIDDEN UNDER RESIN ON BALL SIZE.
- 6) TOP SIDE DOES NOT HAVE A DOT FOR LOCATION OF PIN A1.
- 7) LETTERS ARE NOT MARKED ON BOTTOM (BALL) SIDE.



DAISY CHAIN ORIENTATION

DETAIL A
SCALE 25 : 1

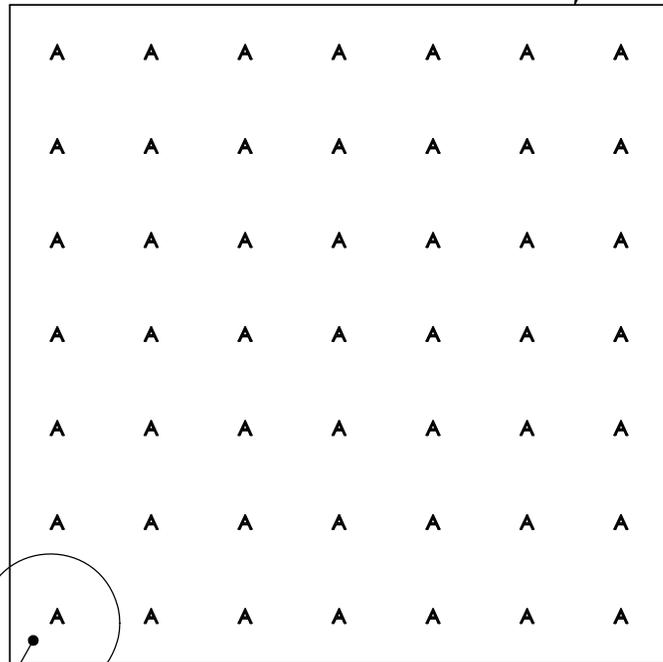
MARKING CODE	
PITCH	LETTER
0.3MM	A
0.4MM	A OR F
0.5MM	A OR P

* SUBJECT TO CHANGE

APPROVALS		DATE	TopLine			
DRAWN	J. Hines	4/16/2016	TITLE WLP ORIENTATION WAFFLE PACK			
ENG	M. Hart	4/16/2016				
MFG			SCALE 12.5:1	SIZE A	DRAWING NO. 504019	REV A
QA						
CUST			DO NOT SCALE DRAWING		SHEET 1 OF 6	
REVISED						

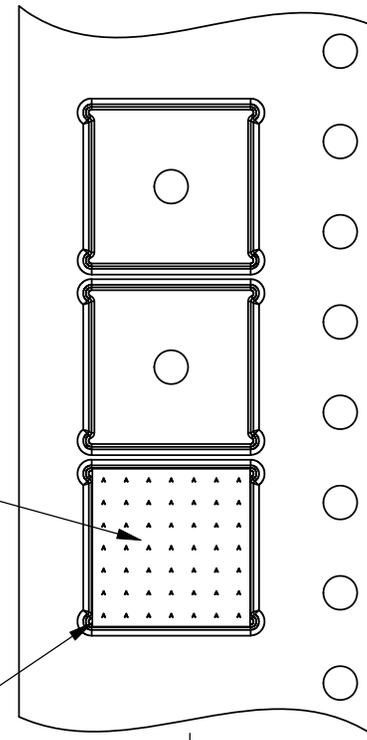
TOP VIEW

SILICON (Si)



EXAMPLE ORIENTATION OF MARKINGS ON WLP

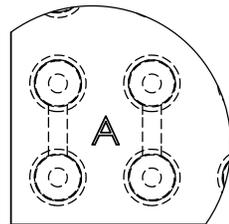
PIN 1
A



DIRECTION OF FEED

Notes: (Unless Otherwise Specified).

- 1) EXAMPLE OF TOP SIDE LASER MARKING.
- 2) ORIENT LETTERS FOR LOCATION OF PIN A1 CORNER.
- 3) ALLOWABLE LETTER MARKING: A, F, T, M, L, Y, AND P.
- 4) SINGLE LETTER IS REPEATED MULTIPLE TIMES ACROSS TOP SIDE.
- 5) DAISY CHAIN IS HIDDEN UNDER RESIN ON BALL SIZE.
- 6) TOP SIDE DOES NOT HAVE A DOT FOR LOCATION OF PIN A1.
- 7) LETTERS ARE NOT MARKED ON BOTTOM (BALL) SIDE.



DAISY CHAIN ORIENTATION

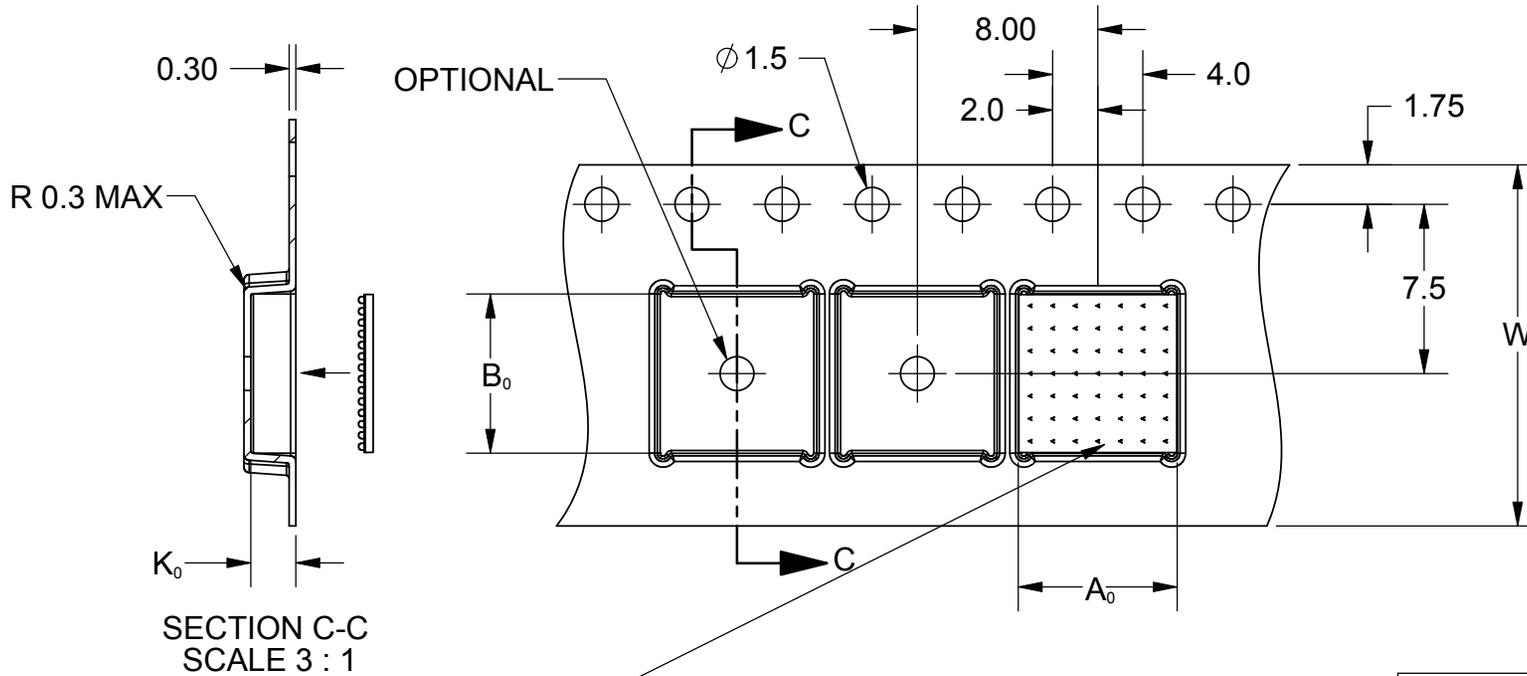
DETAIL A
SCALE 25 : 1

MARKING CODE	
PITCH	LETTER
0.3MM	A
0.4MM	A OR F
0.5MM	A OR P

* SUBJECT TO CHANGE

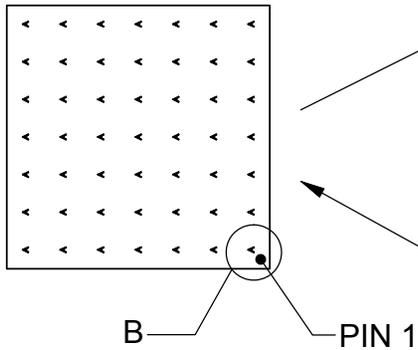
APPROVALS	DATE	TopLine			
DRAWN J. Hines	6/12/2016	TITLE WLP ORIENTATION TAPE AND REEL			
ENG M. Hart	6/12/2016				
MFG					
QA		SCALE 12.5:1	SIZE A	DRAWING NO. 504021	REV A
CUST		DO NOT SCALE DRAWING			SHEET 2 OF 6
REVISED					

EXAMPLE OF CARRIER TYPE



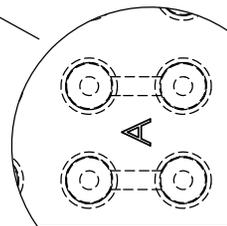
SECTION C-C
SCALE 3 : 1

DIMENSION TABLE (MM)	
A ₀ =	7.05
B ₀ =	7.05
K ₀ =	2.00
W =	16.00



B

PIN 1



DAISY CHAIN
ORIENTATION

DETAIL B
SCALE 25 : 1

Notes: (Unless Otherwise Specified).

- 1) CARRIER TAPE SHOWN AS EXAMPLE ONLY.
ACTUAL TAPE DIMENSIONS ARE DEPENDENT ON X/Y/Z SIZE OF WLP.
- 2) SURFACE OF WLP IS MARKED WITH SINGLE LETTER REPEATED MULTIPLE TIMES ACROSS TOP SURFACE.
- 3) ORIENT LETTERS ON WLP FOR LOCATION OF PIN A1 CORNER IN TAPE.

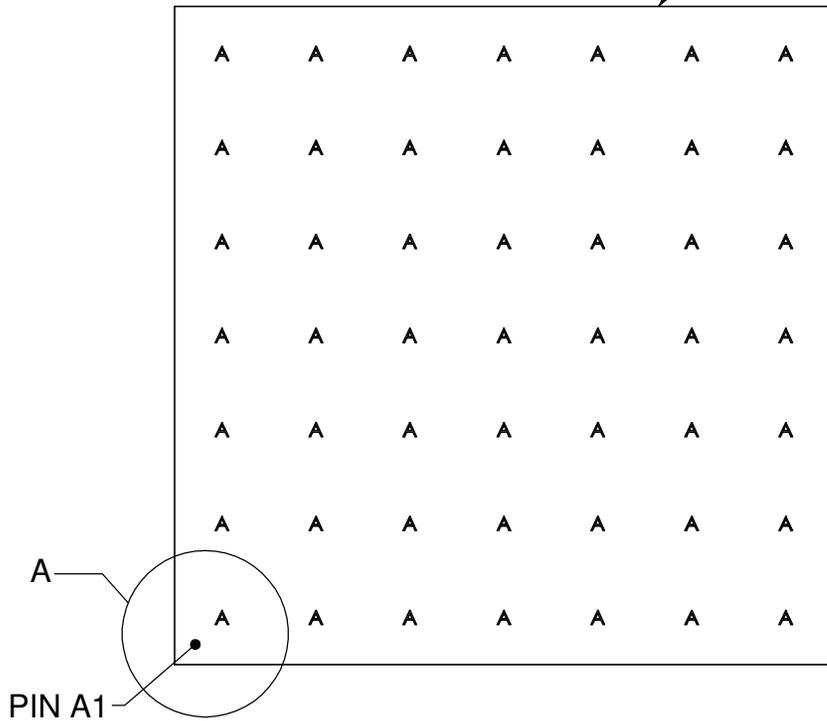
MARKING CODE	
PITCH	LETTER
0.3MM	A
0.4MM	A OR F
0.5MM	A OR P

* SUBJECT TO CHANGE

			
TITLE		WLP ORIENTATION TAPE AND REEL	
SCALE	SIZE	DRAWING NO.	REV
5:1	A	504021	A
DO NOT SCALE DRAWING			SHEET 3 OF 6

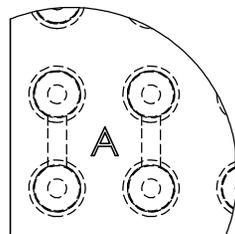
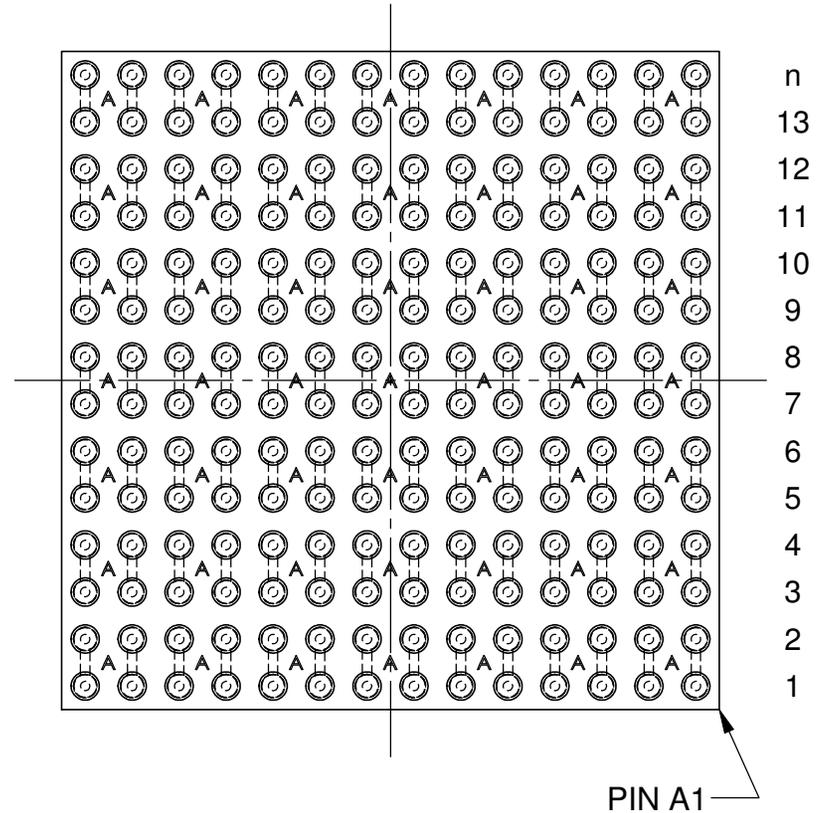
TOP VIEW

SILICON (Si)



BALL VIEW

Z N M L K J H G F E D C B A



DAISY CHAIN ORIENTATION

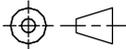
DETAIL A
SCALE 25 : 1

MARKING CODE	
PITCH	*LETTER
0.3mm	A
0.4mm	A OR F
0.5mm	A OR P

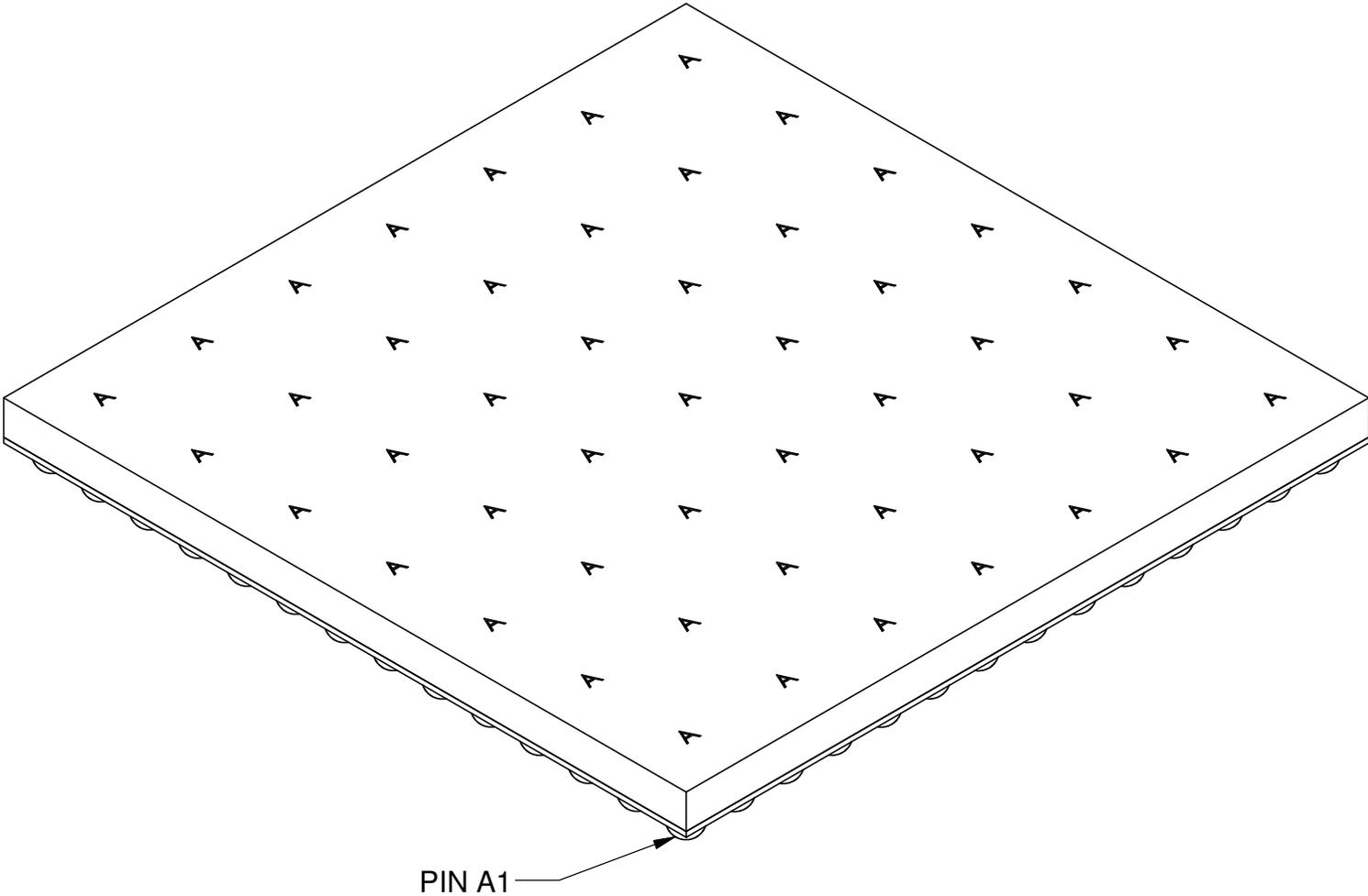
*SUBJECT TO CHANGE

Notes: (Unless Otherwise Specified).

- 1) EXAMPLE OF TOP SIDE LASER MARKING.
- 2) ORIENT LETTERS FOR LOCATION OF PIN A1 CORNER.
- 3) ALLOWABLE LETTER MARKING: A, F, T, M, L, Y, AND P.
- 4) SINGLE LETTER IS REPEATED MULTIPLE TIMES ACROSS TOP SIDE.
- 5) DAISY CHAIN IS HIDDEN UNDER RESIN ON BALL SIZE.
- 6) TOP SIDE DOES NOT HAVE A DOT FOR LOCATION OF PIN A1.
- 7) LETTERS ARE NOT MARKED ON BOTTOM (BALL) SIDE.

TOLERANCE UNLESS NOTED		APPROVALS		DATE				
X.X	+/- 0.3	DRAWN	J. Hines	12/27/2010				
X.XX	+/- 0.03			ENG				
X.XXX	+/- 0.003	MFG			SCALE	SIZE	DRAWING NO.	REV
ANGLES +/- 0.5° ALL DIMENSIONS IN <input type="checkbox"/> INCHES <input checked="" type="checkbox"/> MILLIMETERS		QA			12.5:1	A	504012	A
THIRD ANGLE PROJECTION 		CUST			DO NOT SCALE DRAWING		SHEET 4 OF 6	
		REVISED						

EXAMPLE OF WLP MARKING
PIN 1 ORIENTATION

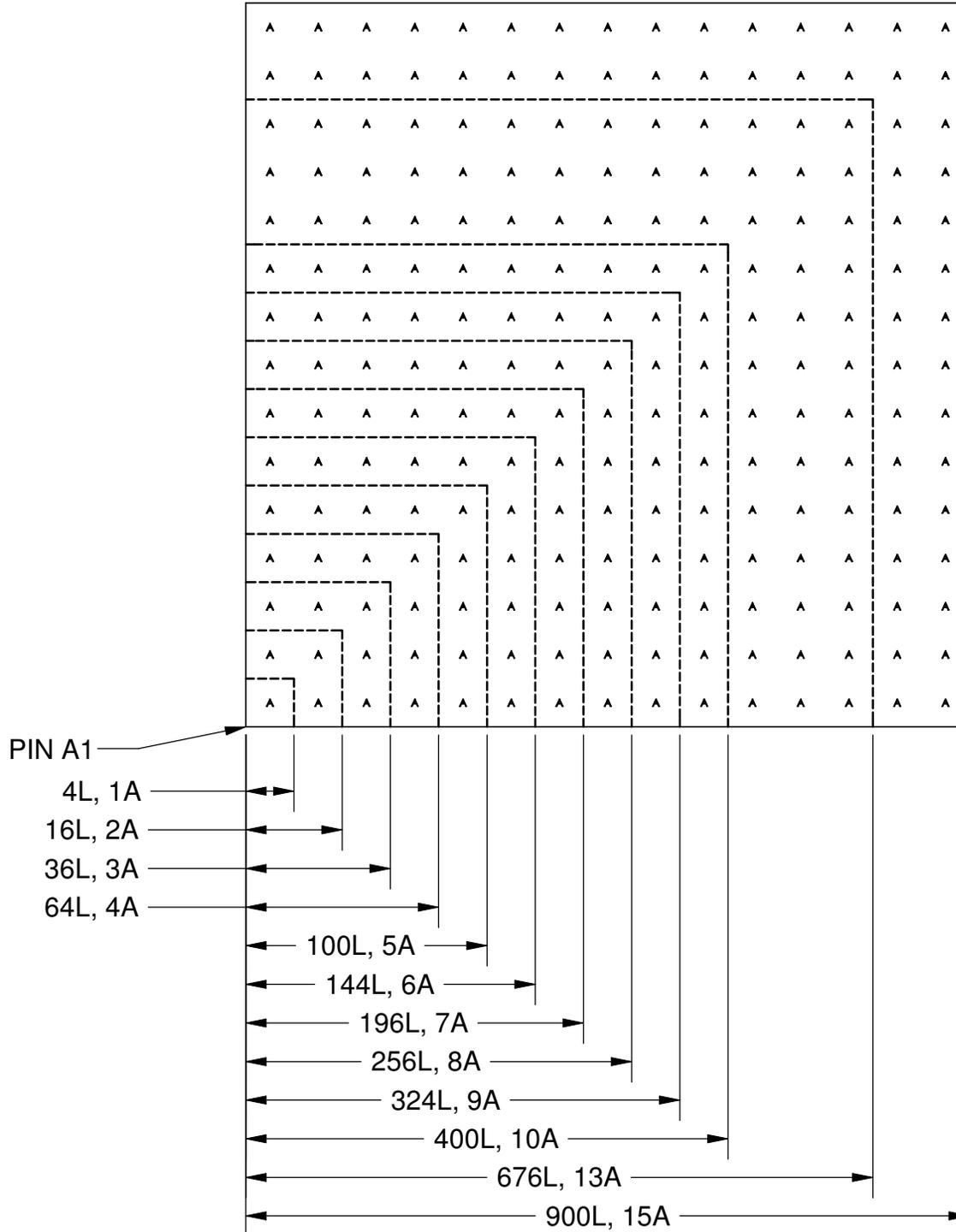


WLP IS LASER MARKED WITH A SINGLE LETTER REPEATED
ACROSS THE TOP SURFACE.

TO LOCATE PIN A1, ORIENT THE MARKINGS AS SHOWN.
A1 IS LOCATED IN THE LOWER LEFT CORNER.

TopLine [®]			
TITLE		WLP TOP MARKING PIN A1 LOCATIONS	
SCALE	SIZE	DRAWING NO.	REV
20:1	A	504012	A
DO NOT SCALE DRAWING			SHEET 5 OF 6

WLP TOP MARKING EXAMPLE



TopLine ®			
TITLE		WLP TOP MARKING PIN A1 LOCATIONS	
SCALE	SIZE	DRAWING NO.	REV
7.5:1	A	504012	A
DO NOT SCALE DRAWING			SHEET 6 OF 6