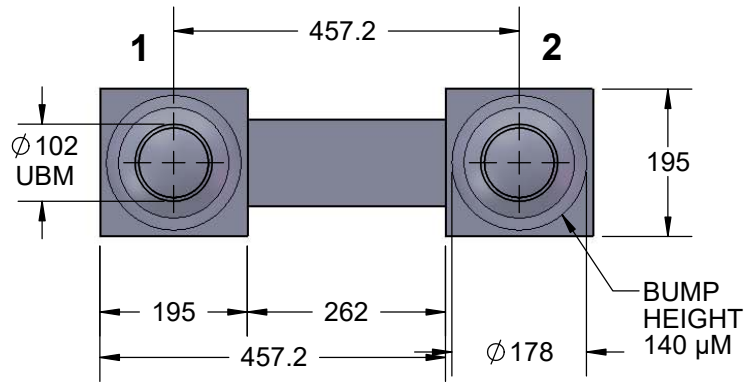
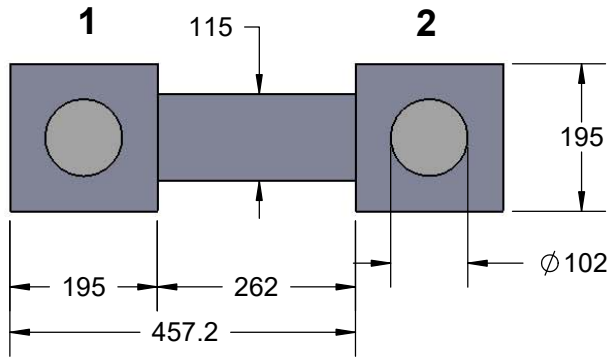


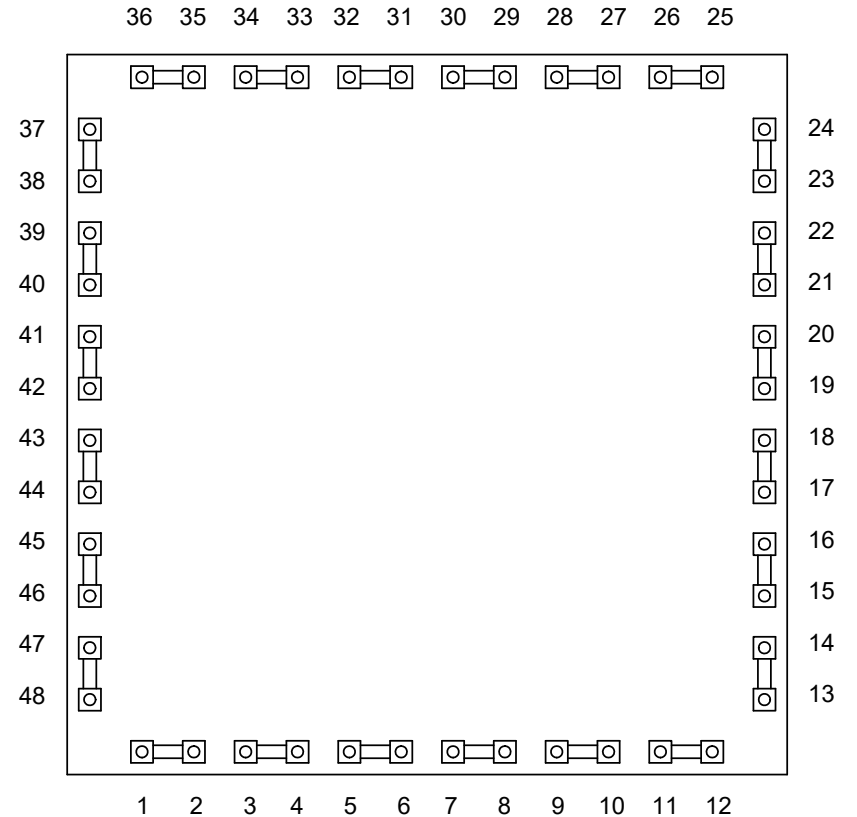
### SOLDER BUMP PAD DETAIL 1



### WIRE BONDING PAD DETAIL 2



### DAISY CHAIN PATTERN BUMP (PAD) VIEW



- NOTES:
- 1) DIMENSIONS IN MICRONS ( $\mu\text{M}$ ) OR AS SPECIFIED.
  - 2) THICKNESS:  $635\mu\text{m}$  (OTHER AVAILABLE).
  - 3) PASSIVATION: NITRIDE (STANDARD).
  - 4) PACKAGING:
    - a) STANDARD PACK WAFFLE PACK (TRAY).
    - b) TAPE AND REEL (SPECIAL ORDER).
    - c) SAWN or UNSAWN WAFER (5-INCH).
  - 5) BACKSIDE METAL:
    - a) NONE (STANDARD).
    - b) METAL (SPECIAL ORDER).

#### PART NUMBER TABLE

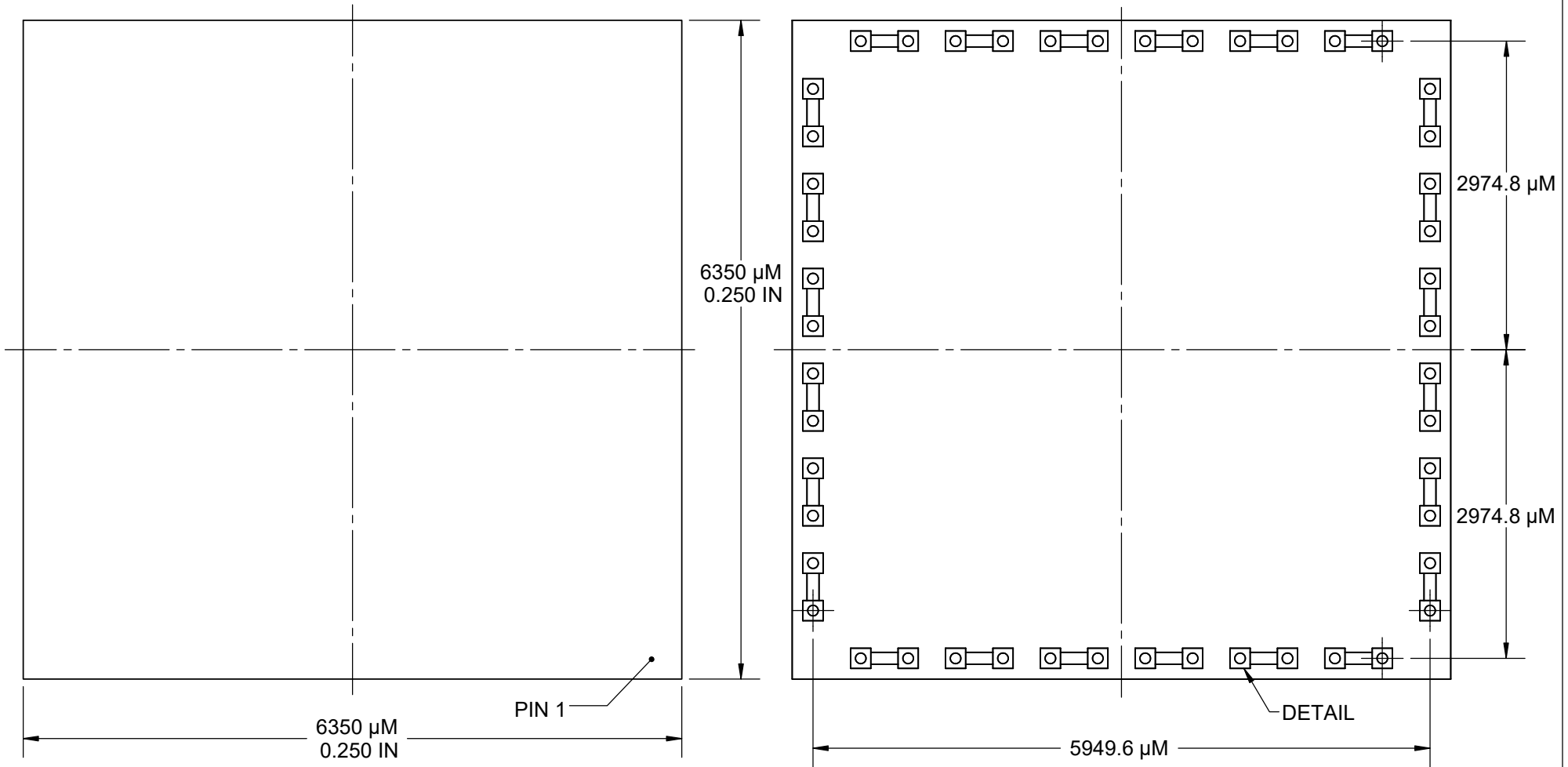
PART NUMBER	BUMP ALLOY	Pb-Free	BUMP	DETAIL
FC48D6.3C457-DC	SAC - SnAgCu	YES	YES	1
FC48D6.3E457-DC	SnPb Eutectic	NO	YES	1
FCN48D6.3A457-DC	Al - BUMPLESS	YES	NO	2

APPROVALS	DATE				
DRAWN J. Hines	6/12/2016	TITLE FC48-457 $\mu\text{M}$ PITCH FLIP CHIP 6.3 X 6.3 MM			
ENG M. Hart	6/12/2016				
MFG		SCALE 15:1	SIZE A	DRAWING NO.	REV
QA				331400	A
CUST		DO NOT SCALE DRAWING		SHEET 1 OF 7	
REVISED					

DIE SIDE

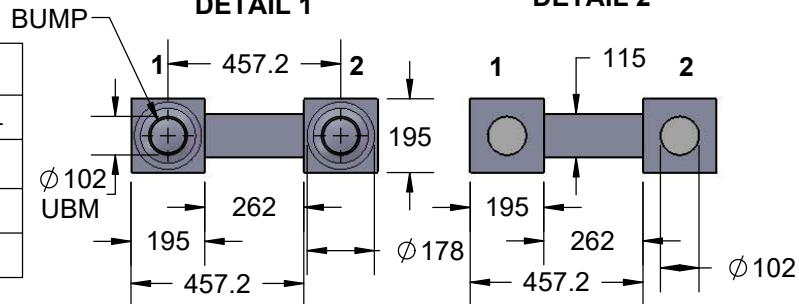
OUTLINE DIMENSIONS

BUMP SIDE



SOLDER BUMP PAD  
DETAIL 1

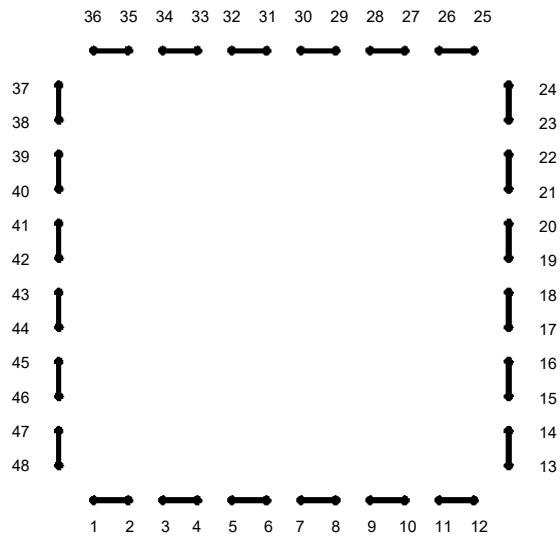
WIRE BONDING PAD  
DETAIL 2



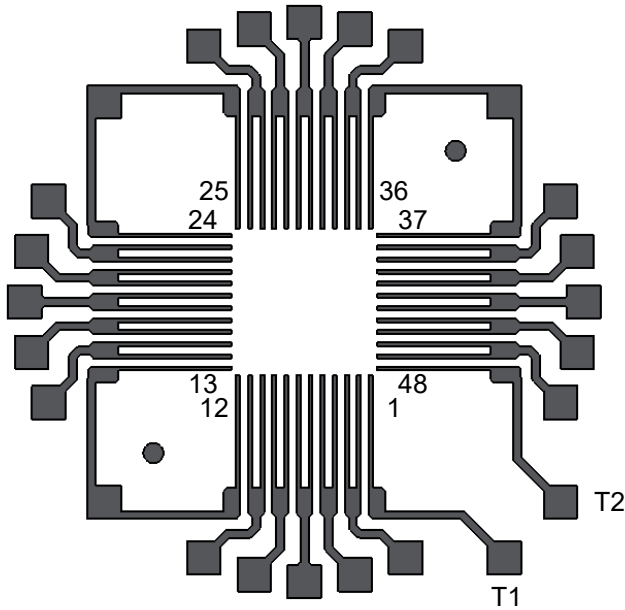
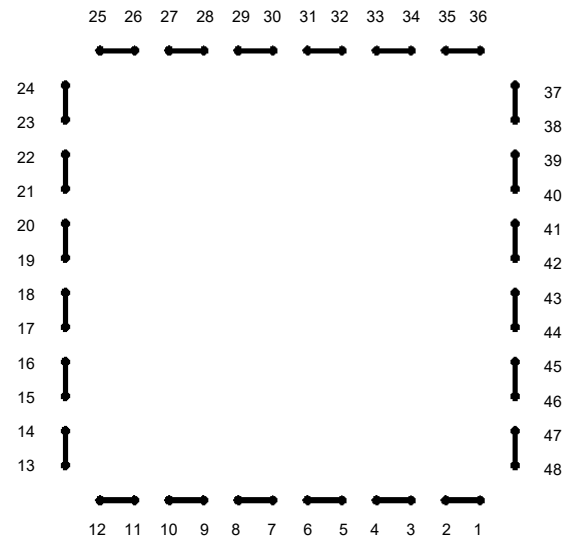
PART NUMBER TABLE				
PART NUMBER	BUMP ALLOY	Pb-Free	BUMP	DETAIL
FC48D6.3C457-DC	SAC - SnAgCu	YES	YES	1
FC48D6.3E457-DC	SnPb Eutectic	NO	YES	1
FC48D6.3A457-DC	Al - BUMPLESS	YES	NO	2

<b>TopLine</b>			
TITLE FC48-457μM PITCH FLIP CHIP 6.3 X 6.3 MM			
SCALE 17.5:1	SIZE A	DRAWING NO. 331400	REV A
DO NOT SCALE DRAWING			SHEET 2 OF 7

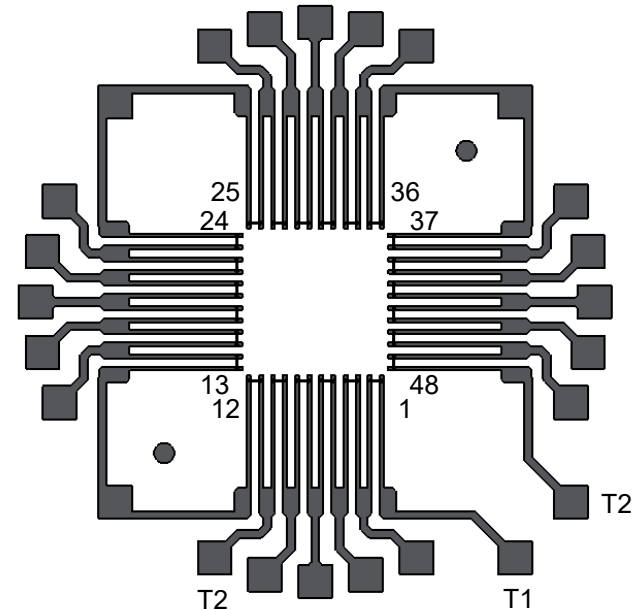
### BUMP VIEW



### X-RAY VIEW



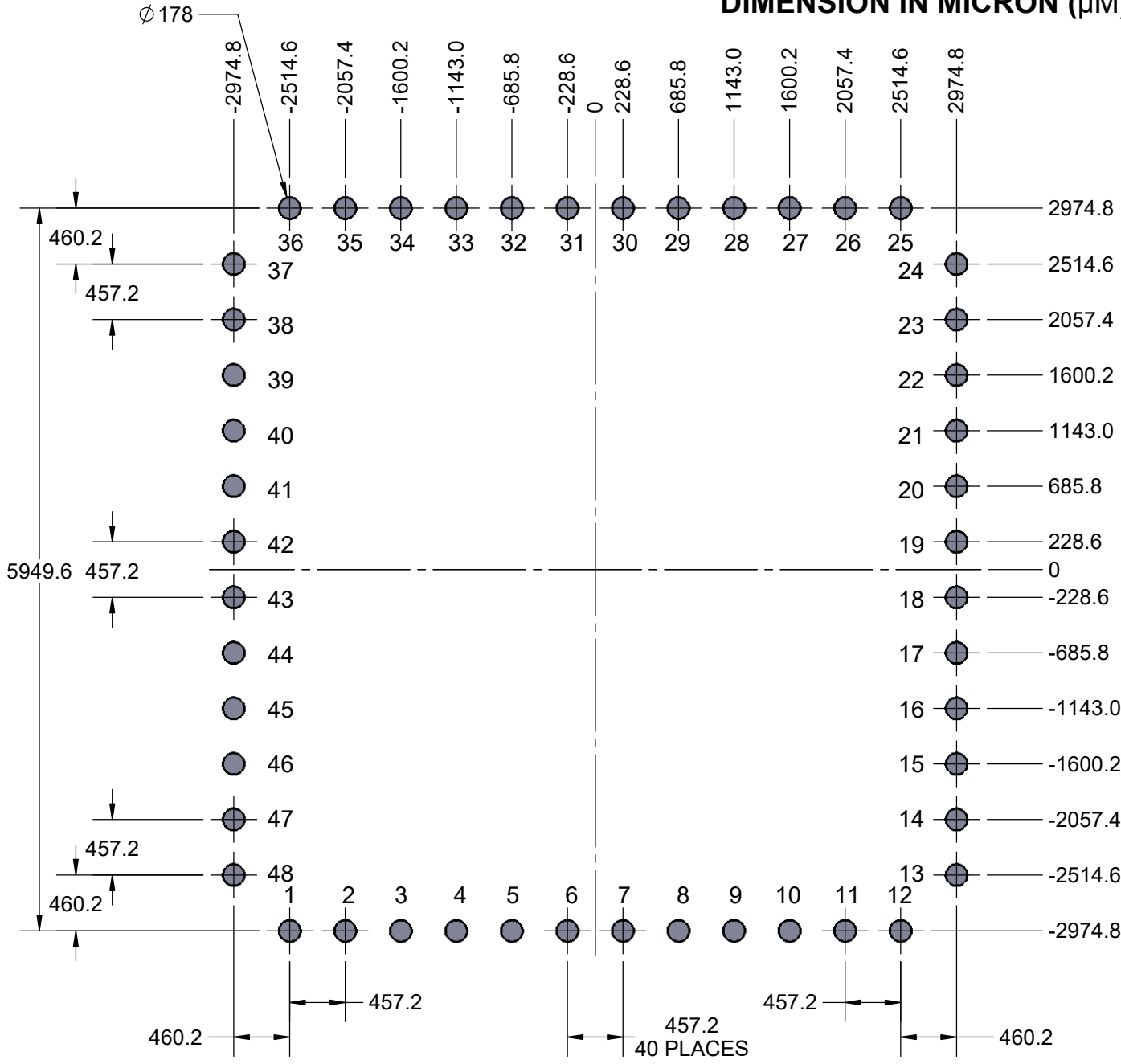
**PCB VIEW**  
SCALE: 3.5/1



**AFTER MOUNTING TO TEST BOARD**  
SCALE: 3.5/1

<b>TopLine</b> <sup>®</sup>			
TITLE FC48-457μM PITCH FLIP CHIP 6.3 X 6.3 MM			
SCALE 10:1	SIZE A	DRAWING NO. 331400	REV A
DO NOT SCALE DRAWING		SHEET 3 OF 7	

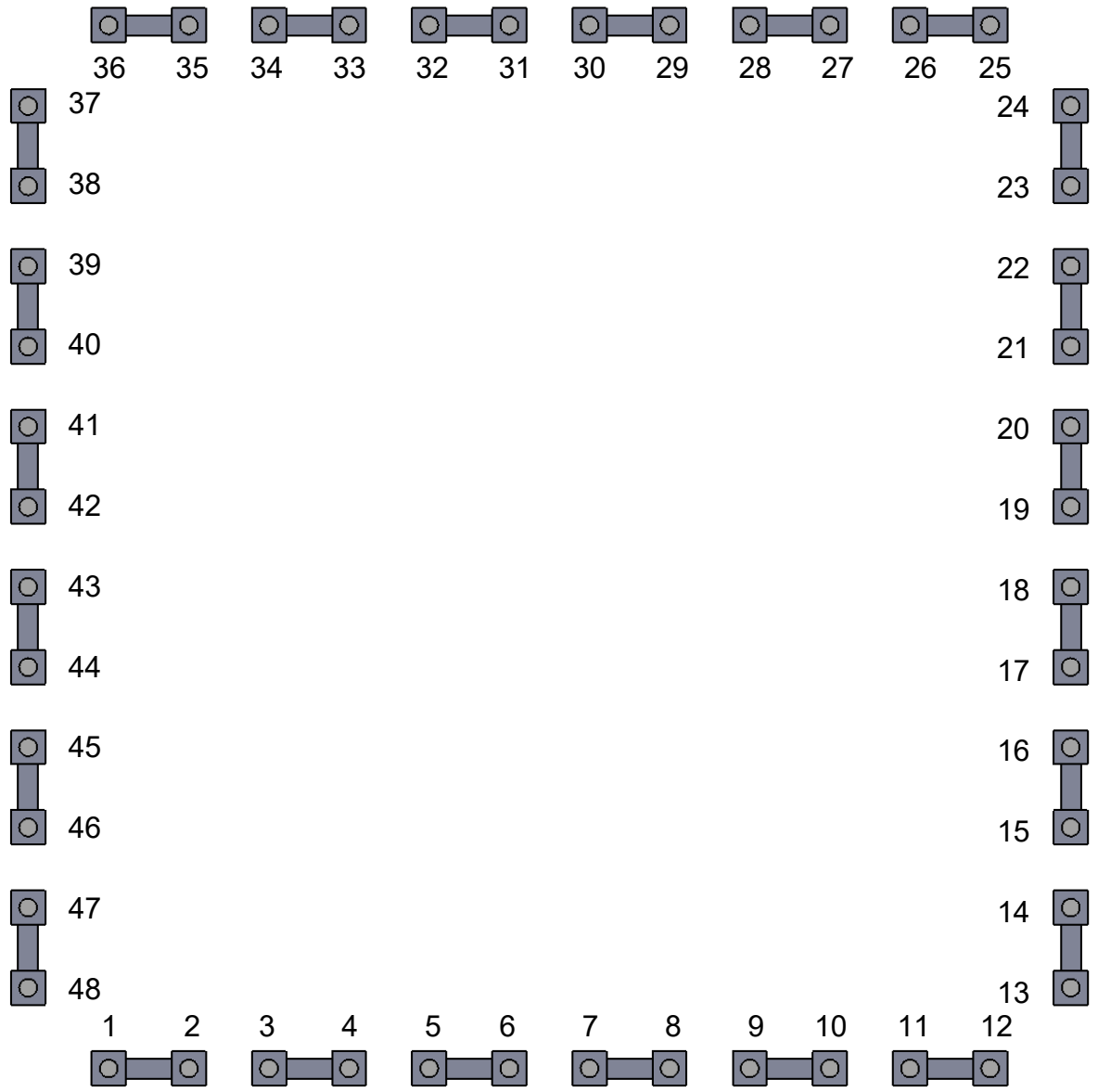
**PAD LOCATION  
SHOWN BUMP VIEW  
DIMENSION IN MICRON ( $\mu\text{M}$ )**



- NOTES:**  
 1) DIMENSIONS IN MICRONS ( $\mu\text{M}$ ).  
 2) X=0, Y=0 IS CENTER OF DIE.  
 3) SEE NET LIST PAGE 6-9.

<b>TopLine</b>			
TITLE FC48-457 $\mu\text{M}$ PITCH FLIP CHIP 6.3 X 6.3 MM			
SCALE 20:1	SIZE A	DRAWING NO. 331400	REV A
DO NOT SCALE DRAWING		SHEET 4 OF 7	

# BONDING MAP SEE NET LIST (PAGES 6 TO 9)



<b>TopLine<sup>®</sup></b>			
TITLE FC48-457μM PITCH FLIP CHIP 6.3 X 6.3 MM			
SCALE 25:1	SIZE A	DRAWING NO. 331400	REV A
DO NOT SCALE DRAWING			SHEET 5 OF 7

**FC48 NET LIST**  
**MICRON ( $\mu\text{M}$ )**  
**(0,0) LOCATED AT THE CENTER OF THE DIE**

PIN#	NAME	X	Y
1	Pin1	-2514.6	-2974.8
2	Pin2	-2057.4	-2974.8
3	Pin3	-1600.2	-2974.8
4	Pin4	-1143	-2974.8
5	Pin5	-685.8	-2974.8
6	Pin6	-228.6	-2974.8
7	Pin7	228.6	-2974.8
8	Pin8	685.8	-2974.8
9	Pin9	1143	-2974.8
10	Pin10	1600.2	-2974.8
11	Pin11	2057.4	-2974.8
12	Pin12	2514.6	-2974.8
13	Pin13	2974.8	-2514.6
14	Pin14	2974.8	-2057.4
15	Pin15	2974.8	-1600.2
16	Pin16	2974.8	-1143
17	Pin17	2974.8	-685.8
18	Pin18	2974.8	-228.6
19	Pin19	2974.8	228.6
20	Pin20	2974.8	685.8
21	Pin21	2974.8	1143
22	Pin22	2974.8	1600.2
23	Pin23	2974.8	2057.4
24	Pin24	2974.8	2514.6

PIN#	NAME	X	Y
25	Pin25	2514.6	2974.8
26	Pin26	2057.4	2974.8
27	Pin27	1600.2	2974.8
28	Pin28	1143	2974.8
29	Pin29	685.8	2974.8
30	Pin30	228.6	2974.8
31	Pin31	-228.6	2974.8
32	Pin32	-685.8	2974.8
33	Pin33	-1143	2974.8
34	Pin34	-1600.2	2974.8
35	Pin35	-2057.4	2974.8
36	Pin36	-2514.6	2974.8
37	Pin37	-2974.8	2514.6
38	Pin38	-2974.8	2057.4
39	Pin39	-2974.8	1600.2
40	Pin40	-2974.8	1143
41	Pin41	-2974.8	685.8
42	Pin42	-2974.8	228.6
43	Pin43	-2974.8	-228.6
44	Pin44	-2974.8	-685.8
45	Pin45	-2974.8	-1143
46	Pin46	-2974.8	-1600.2
47	Pin47	-2974.8	-2057.4
48	Pin48	-2974.8	-2514.6

NOTES:  
 1) DIMENSIONS IN MICRON ( $\mu\text{M}$ ).  
 2) X = 0, Y = 0 IS CENTER OF DIE.

<b>TopLine<sup>®</sup></b>			
TITLE FC48-457 $\mu\text{M}$ PITCH FLIP CHIP 6.3 X 6.3 MM			
SCALE 10:1	SIZE A	DRAWING NO. 331400	REV A
DO NOT SCALE DRAWING		SHEET 6 OF 7	

# PART NUMBERING SYSTEM

**FC**

**48**

**D**

**6.3**

**C**

**457**

**- ATTACH -**

**DC**

**- OPTION**

**FLIP CHIP**

FC = STANDARD FLIP CHIP  
 FCW = BUMPED WAFER\*  
 FCN = BUMPLESS CHIP  
 FCWN = BUMPLESS WAFER\*

\* 5-INCH WAFER

**NUMBER BUMPS**

BUMP	DIE ARRAY
48	1X

**BUMP DIAMETER**

DIAM  $\phi$  178 $\mu$ M  
 HEIGHT 140 $\mu$ M

**DIE SIZE**

CODE	MM	MIL
6.3	6.35MM	250

**BUMP MATERIALI**

E = EUTECTIC Sn63  
 C = LEAD FREE SAC  
 A = AI PAD (BUMPLESS)  
 FOR WIREBONDING

**BUMP PITCH**

$\mu$ M

**OPTIONS**

BLANK = STANDARD  
 NON-METAL

M = METAL BACK SIDE  
 FOR EUTECTIC  
 SOLDER

**DIE THINNING**

CODE	$\mu$ M	INCH
NONE	635 $\mu$ M	.025"
BG530	530 $\mu$ M	.021"
BG430	430 $\mu$ M	.017"
BG360	360 $\mu$ M	.014"
BG250	250 $\mu$ M	.010"

**DAISY CHAIN**

**PACKAGING**

BLANK = TRAY (STANDARD)

BUMP	TRAY	QTY
48	2-INCH	25PCS

TR = TAPE & REEL

UVR = UV TAPE  
 WAFER RING

NTR = NON UV TAPE  
 WAFER RING



TITLE				FC48-457 $\mu$ M PITCH FLIP CHIP 6.3 X 6.3 MM			
SCALE	SIZE	DRAWING NO.		REV			
10:1	A	331400		A			
DO NOT SCALE DRAWING						SHEET 7 OF 7	