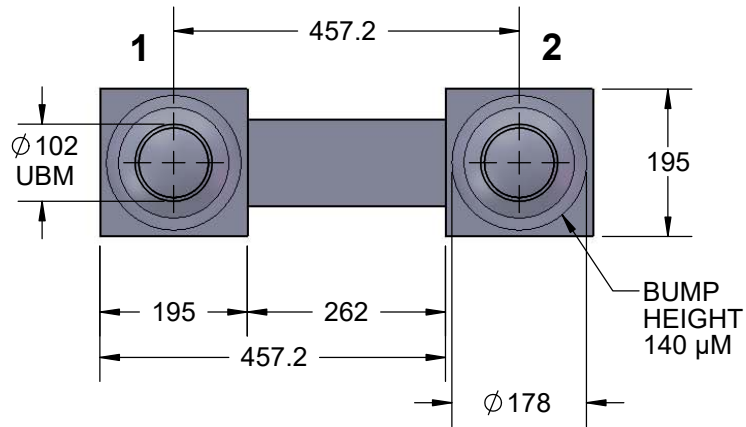
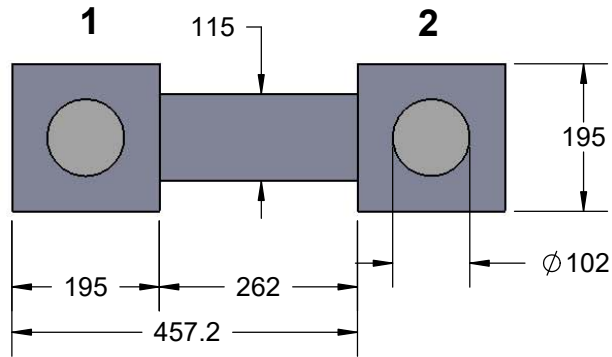


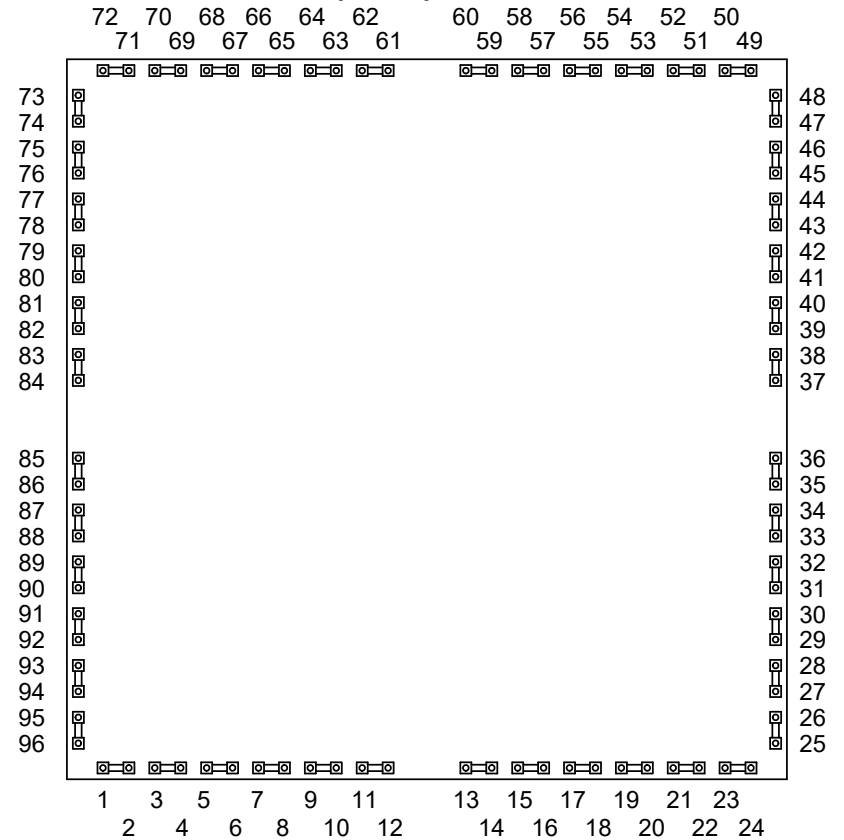
### SOLDER BUMP PAD DETAIL 1



### 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

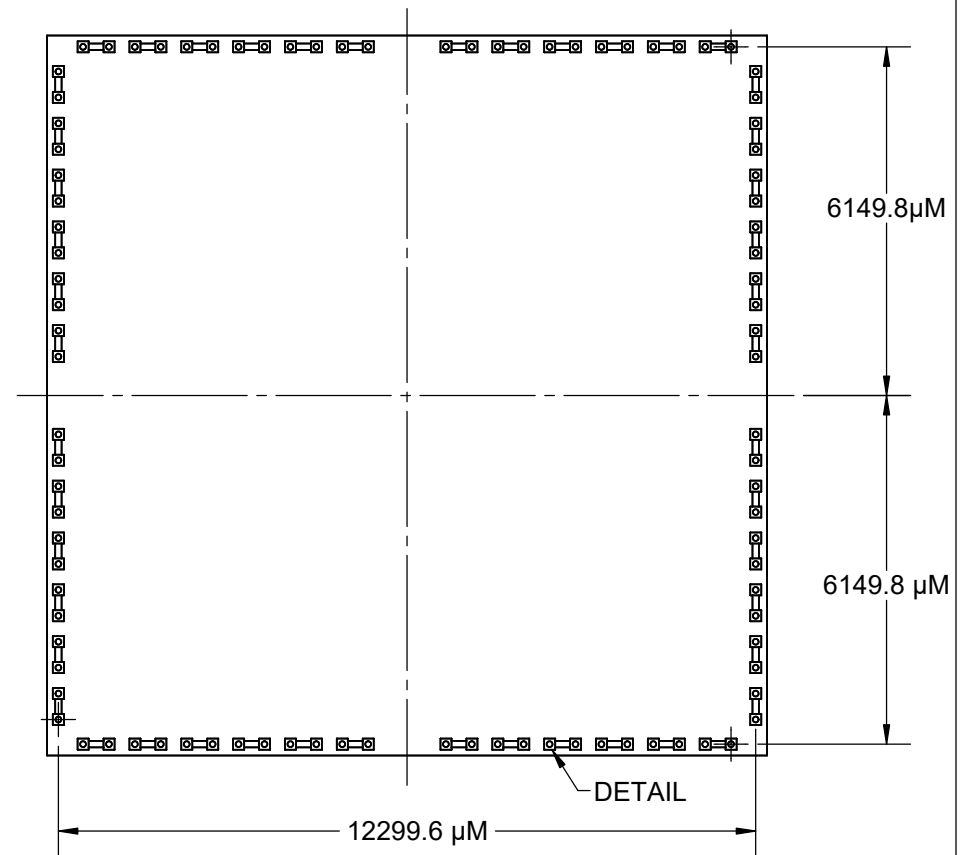
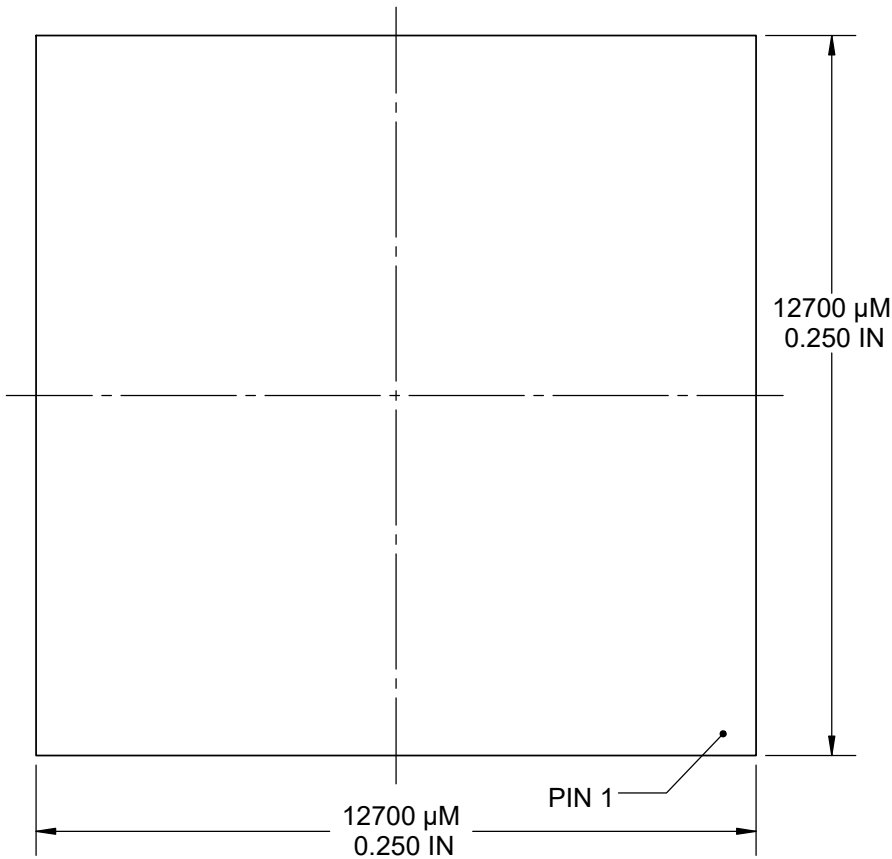
PART NUMBER	BUMP ALLOY	Pb-Free	BUMP	DETAIL
FC96D12.7C457-DC	SAC - SnAgCu	YES	YES	1
FC96D12.7E457-DC	SnPb Eutectic	NO	YES	1
FCN96D12.7A457-DC	Al - BUMPLESS	YES	NO	2

APPROVALS	DATE				
DRAWN J. Hines	11/11/2016	TITLE FC96-457 $\mu\text{M}$ PITCH FLIP CHIP 12.7 X 12.7 MM			
ENG M. Hart	11/11/2016				
MFG		SCALE 7.5:1	SIZE A	DRAWING NO. 332890	REV A
QA		DO NOT SCALE DRAWING			SHEET 1 OF 7
CUST					
REVISED					

# OUTLINE DIMENSIONS

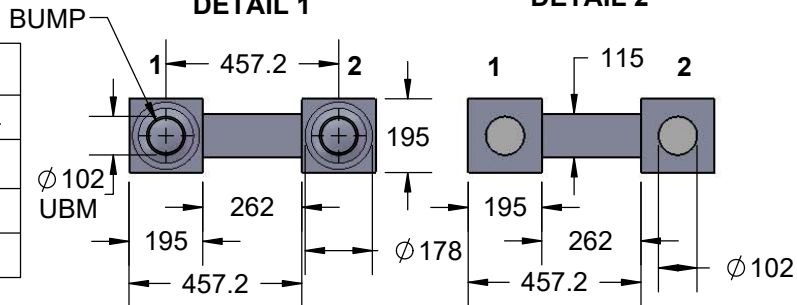
DIE SIDE

BUMP SIDE



SOLDER BUMP PAD  
DETAIL 1

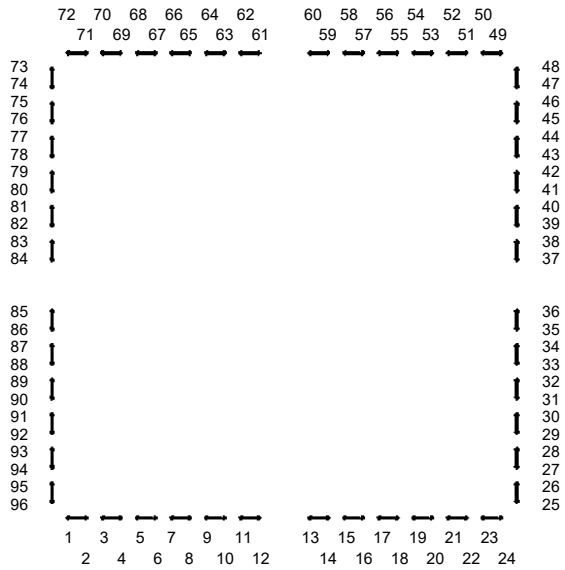
WIRE BONDING PAD  
DETAIL 2



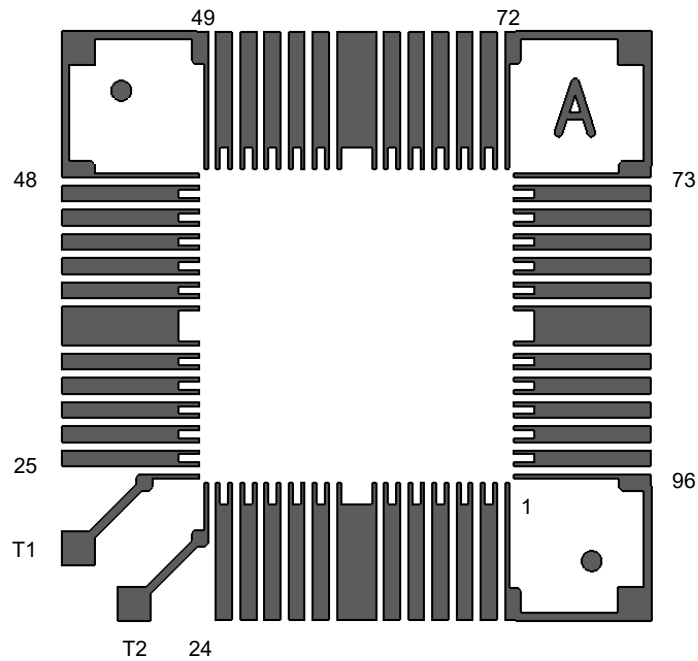
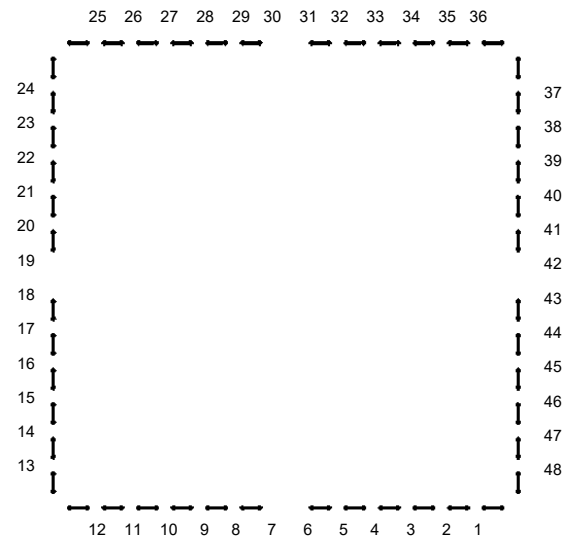
PART NUMBER TABLE				
PART NUMBER	BUMP ALLOY	Pb-Free	BUMP	DETAIL
FC96D12.7C457-DC	SAC - SnAgCu	YES	YES	1
FC96D12.7E457-DC	SnPb Eutectic	NO	YES	1
FC96D12.7A457-DC	Al - BUMPLESS	YES	NO	2

<b>TopLine</b>			
TITLE FC96-457μM PITCH FLIP CHIP 12.7 X 12.7 MM			
SCALE 7.5:1	SIZE A	DRAWING NO. 332890	REV A
DO NOT SCALE DRAWING			SHEET 2 OF 7

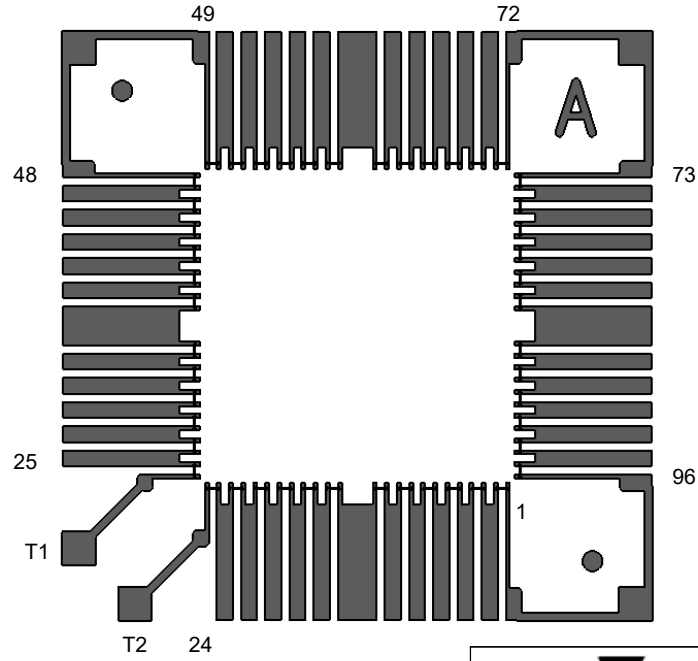
### BUMP VIEW



### X-RAY VIEW



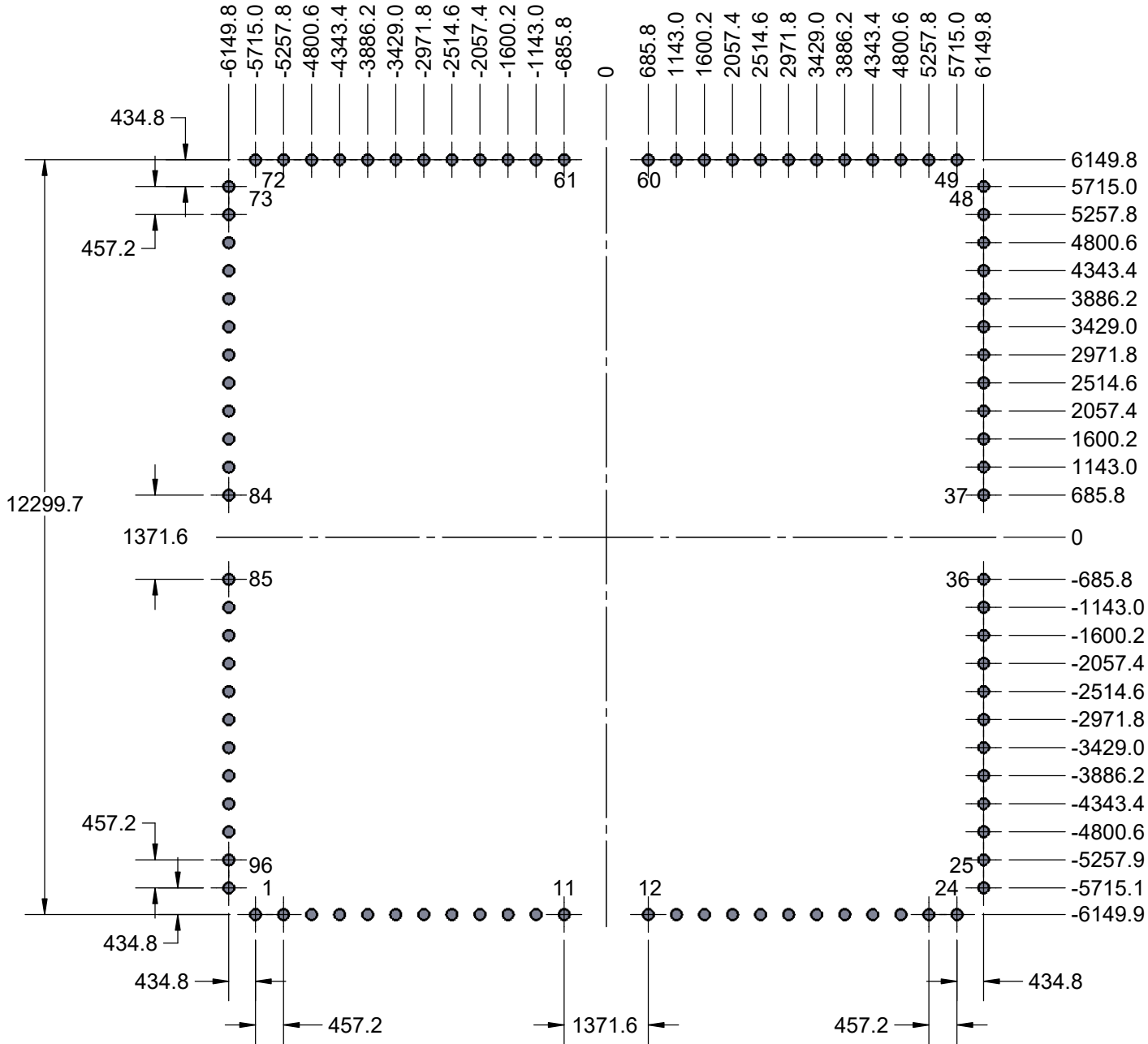
**PCB VIEW**  
SCALE: 3.5/1



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

<b>TopLine</b> <sup>®</sup>			
TITLE FC96-457μM PITCH FLIP CHIP 12.7 X 12.7 MM			
SCALE 5:1	SIZE A	DRAWING NO. 332890	REV A
DO NOT SCALE DRAWING		SHEET 3 OF 7	

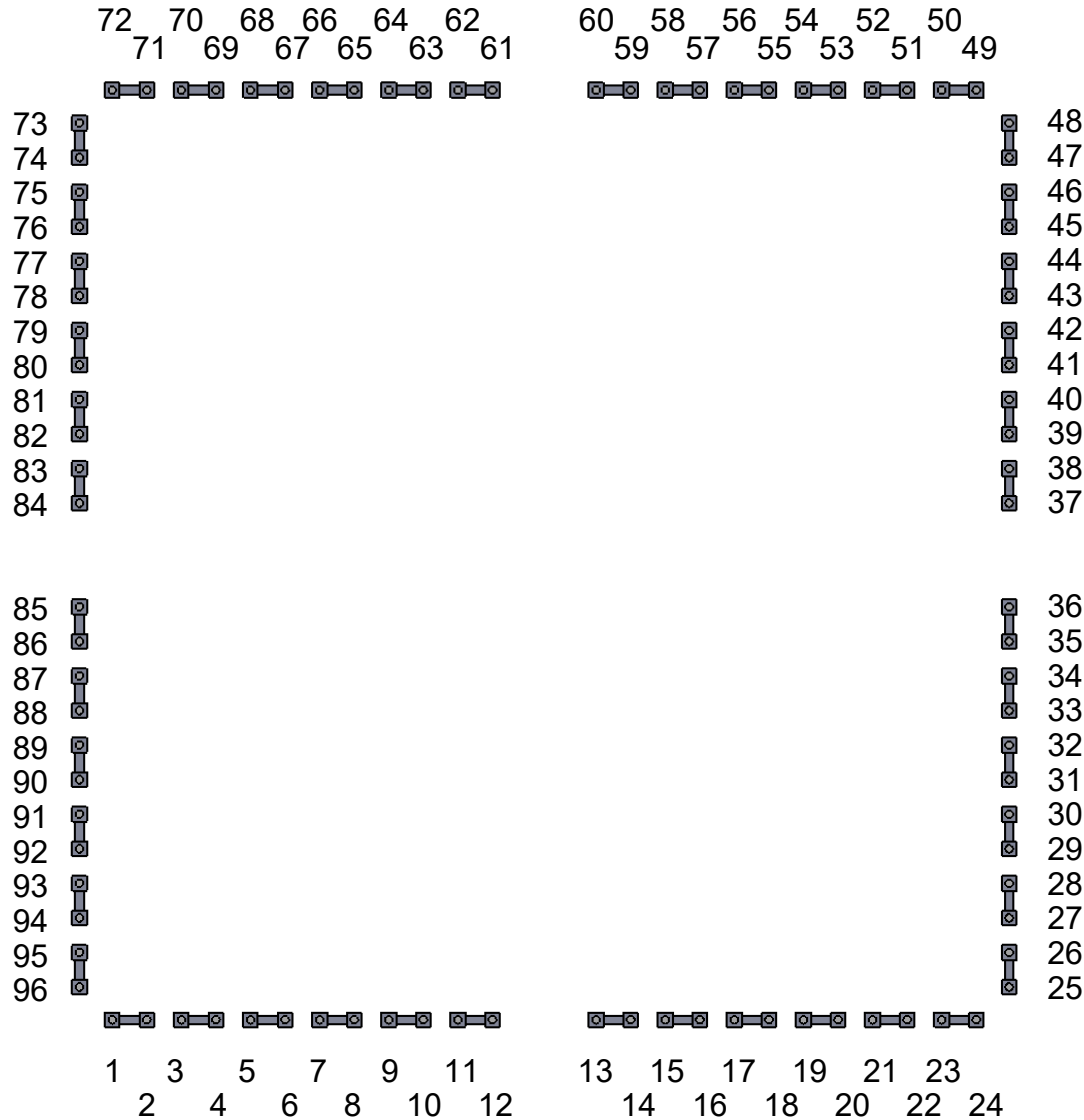
**PAD LOCATION  
SHOWN BUMP VIEW  
DIMENSION IN MICRON ( $\mu\text{M}$ )**



- 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<sup>®</sup></b>			
TITLE FC96-457 $\mu\text{M}$ PITCH FLIP CHIP 12.7 X 12.7 MM			
SCALE 10:1	SIZE A	DRAWING NO. 332890	REV A
DO NOT SCALE DRAWING			SHEET 4 OF 7

# BONDING MAP SEE NET LIST (PAGES 6)



<b>TopLine<sup>®</sup></b>			
TITLE    FC96-457μM PITCH FLIP CHIP 12.7 X 12.7 MM			
SCALE 10:1	SIZE A	DRAWING NO. 332890	REV A
DO NOT SCALE DRAWING			SHEET 5 OF 7


PIN#	NAME	X	Y
1	Pin1	-5689.6	6149.8
2	Pin2	-5232.4	6149.8
3	Pin3	-4775.2	6149.8
4	Pin4	-4318	6149.8
5	Pin5	-3860.8	6149.8
6	Pin6	-3403.6	6149.8
7	Pin7	-2946.4	6149.8
8	Pin8	-2489.2	6149.8
9	Pin9	-2032	6149.8
10	Pin10	-1574.8	6149.8
11	Pin11	-1117.6	6149.8
12	Pin12	-660.4	6149.8
13	Pin13	660.4	6149.8
14	Pin14	1117.6	6149.8
15	Pin15	1574.8	6149.8
16	Pin16	2032	6149.8
17	Pin17	2489.2	6149.8
18	Pin18	2946.4	6149.8
19	Pin19	3403.6	6149.8
20	Pin20	3860.8	6149.8
21	Pin21	4318	6149.8
22	Pin22	4775.2	6149.8
23	Pin23	5232.4	6149.8
24	Pin24	5689.6	6149.8
25	Pin25	6149.8	5689.6
26	Pin26	6149.8	5232.4
27	Pin27	6149.8	4775.2
28	Pin28	6149.8	4318
29	Pin29	6149.8	3860.8
30	Pin30	6149.8	3403.6
31	Pin31	6149.8	2946.4
32	Pin32	6149.8	2489.2

PIN#	NAME	X	Y
33	Pin33	6149.8	2032
34	Pin34	6149.8	1574.8
35	Pin35	6149.8	1117.6
36	Pin36	6149.8	660.4
37	Pin37	6149.8	-660.4
38	Pin38	6149.8	-1117.6
39	Pin39	6149.8	-1574.8
40	Pin40	6149.8	-2032
41	Pin41	6149.8	-2489.2
42	Pin42	6149.8	-2946.4
43	Pin43	6149.8	-3403.6
44	Pin44	6149.8	-3860.8
45	Pin45	6149.8	-4318
46	Pin46	6149.8	-4775.2
47	Pin47	6149.8	-5232.4
48	Pin48	6149.8	-5689.6
49	Pin49	5689.6	-6149.8
50	Pin50	5232.4	-6149.8
51	Pin51	4775.2	-6149.8
52	Pin52	4318	-6149.8
53	Pin53	3860.8	-6149.8
54	Pin54	3403.6	-6149.8
55	Pin55	2946.4	-6149.8
56	Pin56	2489.2	-6149.8
57	Pin57	2032	-6149.8
58	Pin58	1574.8	-6149.8
59	Pin59	1117.6	-6149.8
60	Pin60	660.4	-6149.8
61	Pin61	-660.4	-6149.8
62	Pin62	-1117.6	-6149.8
63	Pin63	-1574.8	-6149.8
64	Pin64	-2032	-6149.8

PIN#	NAME	X	Y
65	Pin65	-2489.2	-6149.8
66	Pin66	-2946.4	-6149.8
67	Pin67	-3403.6	-6149.8
68	Pin68	-3860.8	-6149.8
69	Pin69	-4318	-6149.8
70	Pin70	-4775.2	-6149.8
71	Pin71	-5232.4	-6149.8
72	Pin72	-5689.6	-6149.8
73	Pin73	-6149.8	-5689.6
74	Pin74	-6149.8	-5232.4
75	Pin75	-6149.8	-4775.2
76	Pin76	-6149.8	-4318
77	Pin77	-6149.8	-3860.8
78	Pin78	-6149.8	-3403.6
79	Pin79	-6149.8	-2946.4
80	Pin80	-6149.8	-2489.2
81	Pin81	-6149.8	-2032
82	Pin82	-6149.8	-1574.8
83	Pin83	-6149.8	-1117.6
84	Pin84	-6149.8	-660.4
85	Pin85	-6149.8	660.4
86	Pin86	-6149.8	1117.6
87	Pin87	-6149.8	1574.8
88	Pin88	-6149.8	2032
89	Pin89	-6149.8	2489.2
90	Pin90	-6149.8	2946.4
91	Pin91	-6149.8	3403.6
92	Pin92	-6149.8	3860.8
93	Pin93	-6149.8	4318
94	Pin94	-6149.8	4775.2
95	Pin95	-6149.8	5232.4
96	Pin96	-6149.8	5689.6

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

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

			
TITLE FC96-457 $\mu\text{M}$ PITCH FLIP CHIP 12.7 X 12.7 MM			
SCALE 10:1	SIZE A	DRAWING NO. 332890	REV A
DO NOT SCALE DRAWING			SHEET 6 OF 7

# PART NUMBERING SYSTEM

**FC**

**96**

**D**

**12.7**

**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
9	1X

**BUMP DIAMETER**

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

**DIE SIZE**

CODE	MM	MIL
12.7	12.7MM	500

**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
9	4-INCH	25PCS
	2-INCH	9PCS

TR = TAPE & REEL

UVR = UV TAPE  
 WAFER RING

NTR = NON UV TAPE  
 WAFER RING



TITLE FC96-457 $\mu$ M PITCH  
 FLIP CHIP 12.7 X 12.7 MM

SCALE	SIZE	DRAWING NO.	REV
10:1	A	332890	A

DO NOT SCALE DRAWING

SHEET 7 OF 7