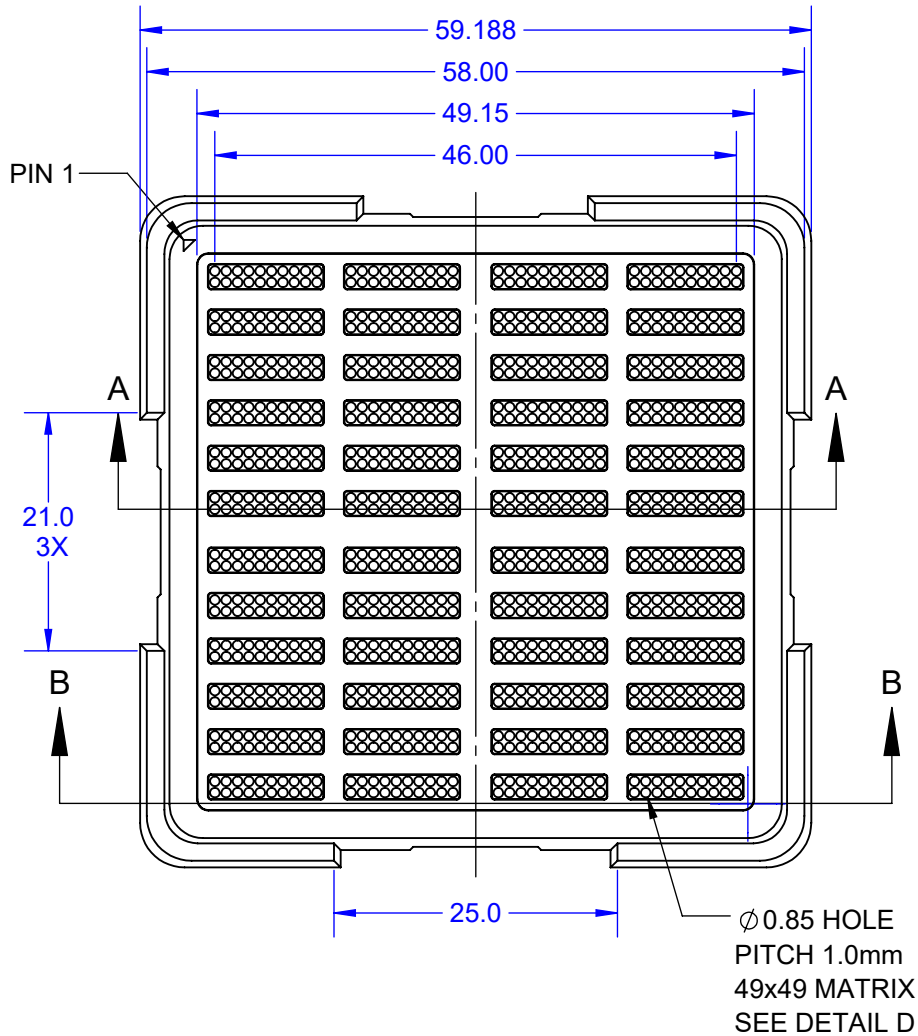
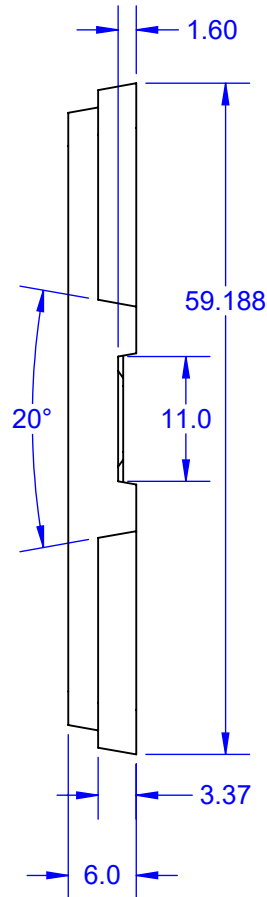


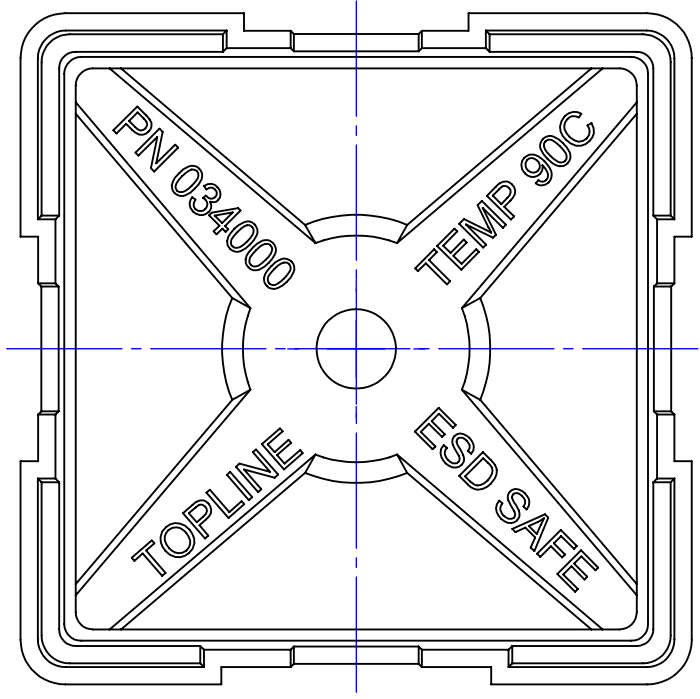
**TOP**



**SIDE**

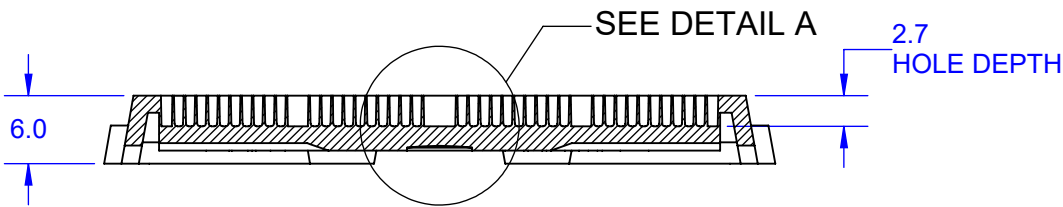


**BOTTOM**



**NOTES:**

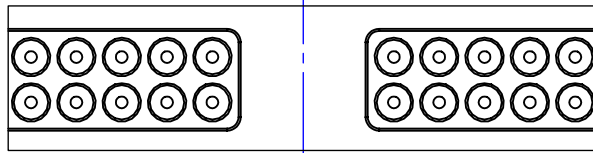
1. DIMENSION MM.
2. MATERIAL: CONDUCTIVE POLYCARBONATE.
3. TEMPERATURE 90°C MAX.
4. COLOR: BLACK.
5. PERMANENT ESD SAFE  
SURFACE RESISTIVITY  $10^4 \sim 10^6 \Omega/SQ.$



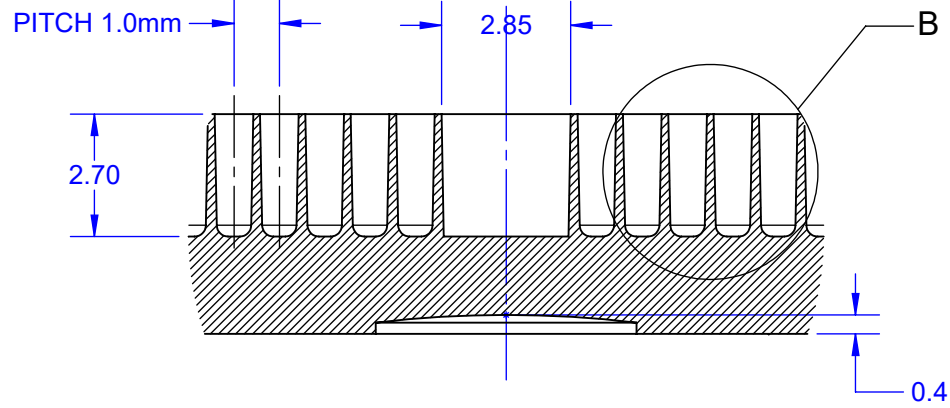
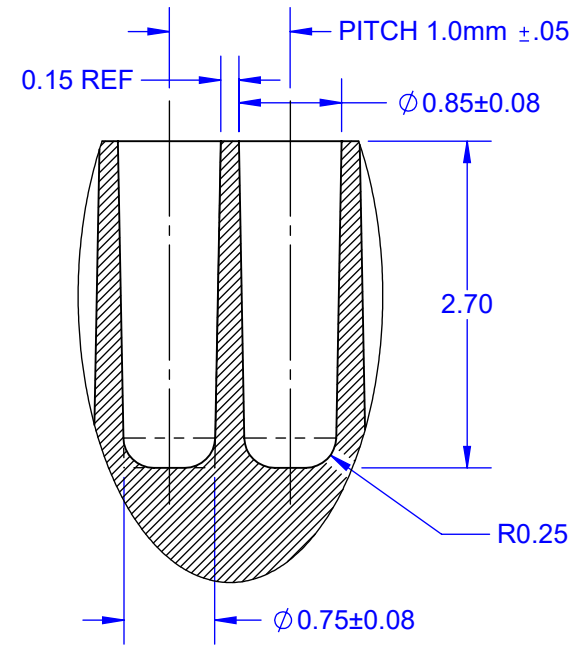
**SECTION A-A**

APPROVALS	DATE	<b>TopLine®</b>			
DRAWN T. Au	5/15/2022				
ENG M. Hart	5/15/2022	TITLE CCGA UNIVERSAL CARRIER PITCH 1.0MM			
TOLERANCE	MFG	SCALE	SIZE	DRAWING NO.	REV
[X] MM	QA	3:2	A	034000	B
X.X = ±0.2	CUST	DO NOT SCALE DRAWING			SHEET 1 OF 19
X.XX = ±0.1	REVISED				

TOP



DETAIL B  
SCALE 16 : 1



DETAIL A

**TopLine**<sup>®</sup>

TITLE CCGA UNIVERSAL CARRIER  
PITCH 1.0MM

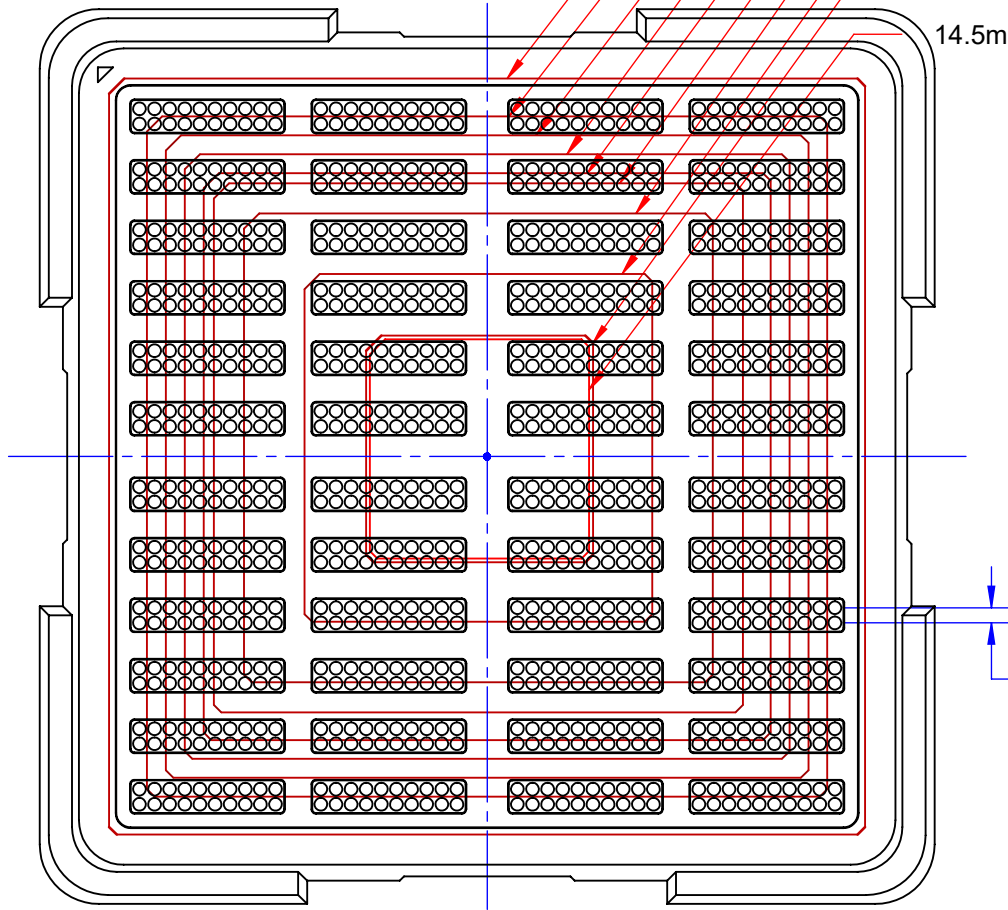
SCALE	SIZE	DRAWING NO.	REV
6:1	A	034000	B

DO NOT SCALE DRAWING

SHEET 2 OF 19

# DETAIL D

- 50mm CCGA2401 MATRIX 49x49
- 45mm CCGA1752 MATRIX 42x42
- 42.5mm CCGA1657 MATRIX 41x41
- 40mm CCGA1509 MATRIX 39x39
- 37.5mm CCGA1272 MATRIX 36x36
- 35mm CCGA1140~1152 MATRIX 34x34
- 31mm CCGA896 MATRIX 30x30
- 23mm CCGA483 MATRIX 22x22
- 15mm CCGA196 MATRIX 14x14
- 14.5mm CCGA143 MATRIX 12x12



PITCH  
1.0mm TYP.

**TopLine**<sup>®</sup>

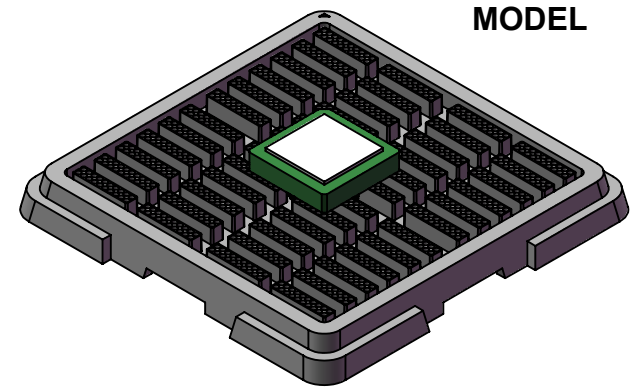
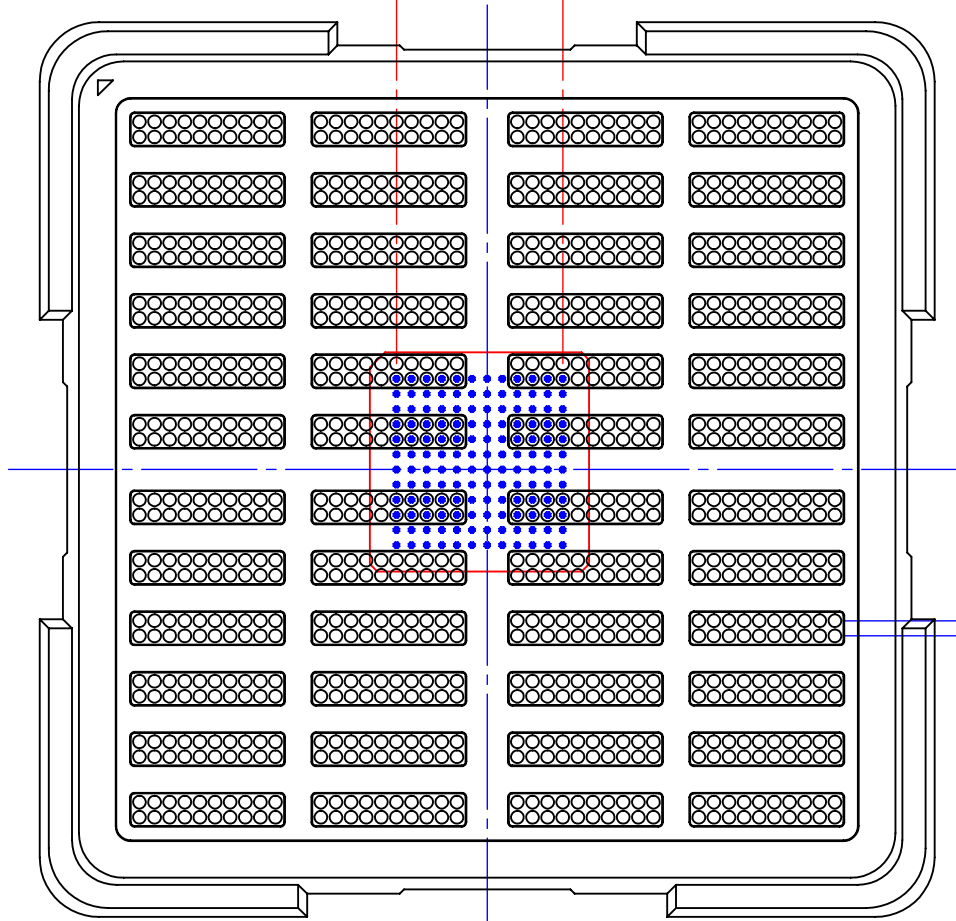
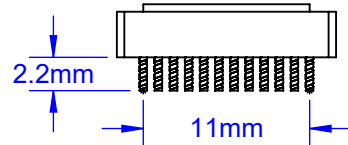
TITLE CCGA UNIVERSAL CARRIER  
PITCH 1.0MM

SCALE 2:1	SIZE A	DRAWING NO. 034000	REV B
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DO NOT SCALE DRAWING

SHEET 3 OF 19

CCGA143  
 COLUMNS 12x12  
 14.5x14.5mm



MODEL

PITCH  
 1.0mm TYP.

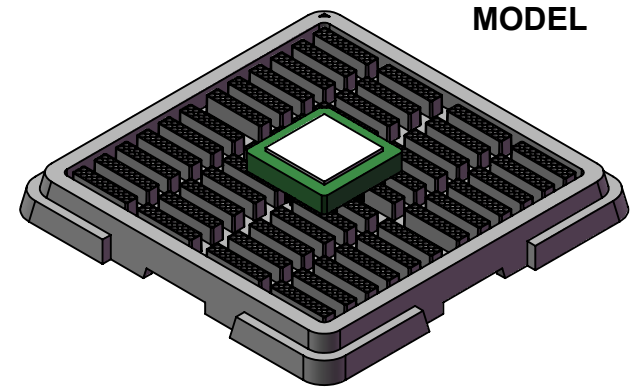
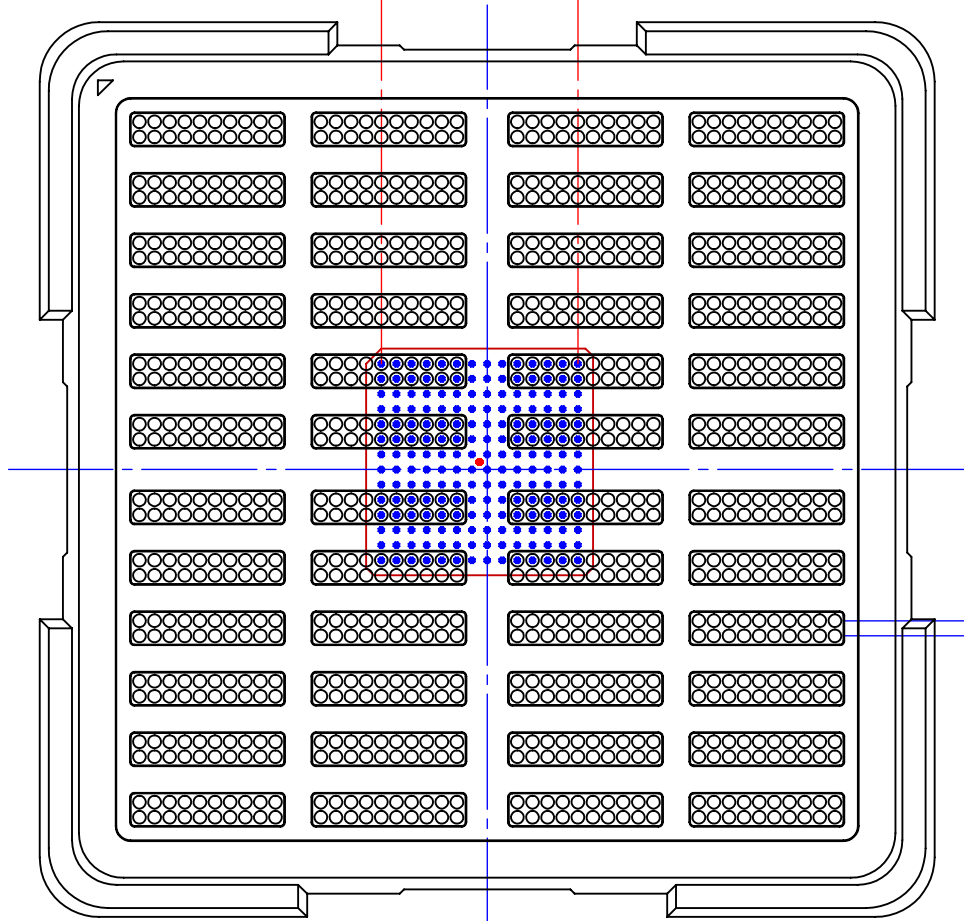
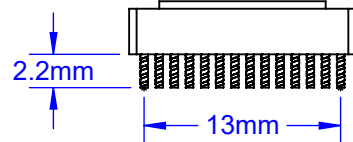
**TopLine**<sup>®</sup>

TITLE CCGA UNIVERSAL CARRIER  
 PITCH 1.0MM

SCALE 2:1	SIZE A	DRAWING NO. 034000	REV B
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DO NOT SCALE DRAWING SHEET 4 OF 19

CCGA196  
 COLUMNS 14x14  
 15x15mm



PITCH  
 1.0mm TYP.

**TopLine**<sup>®</sup>

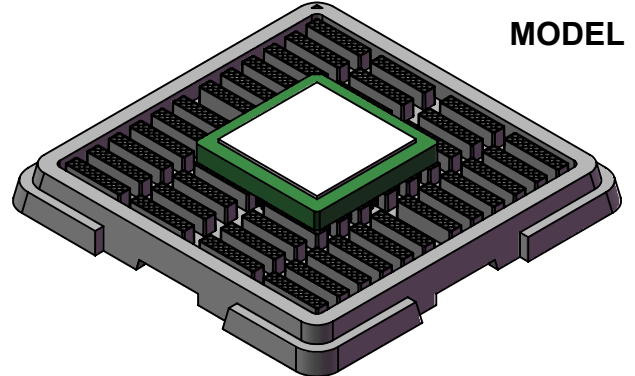
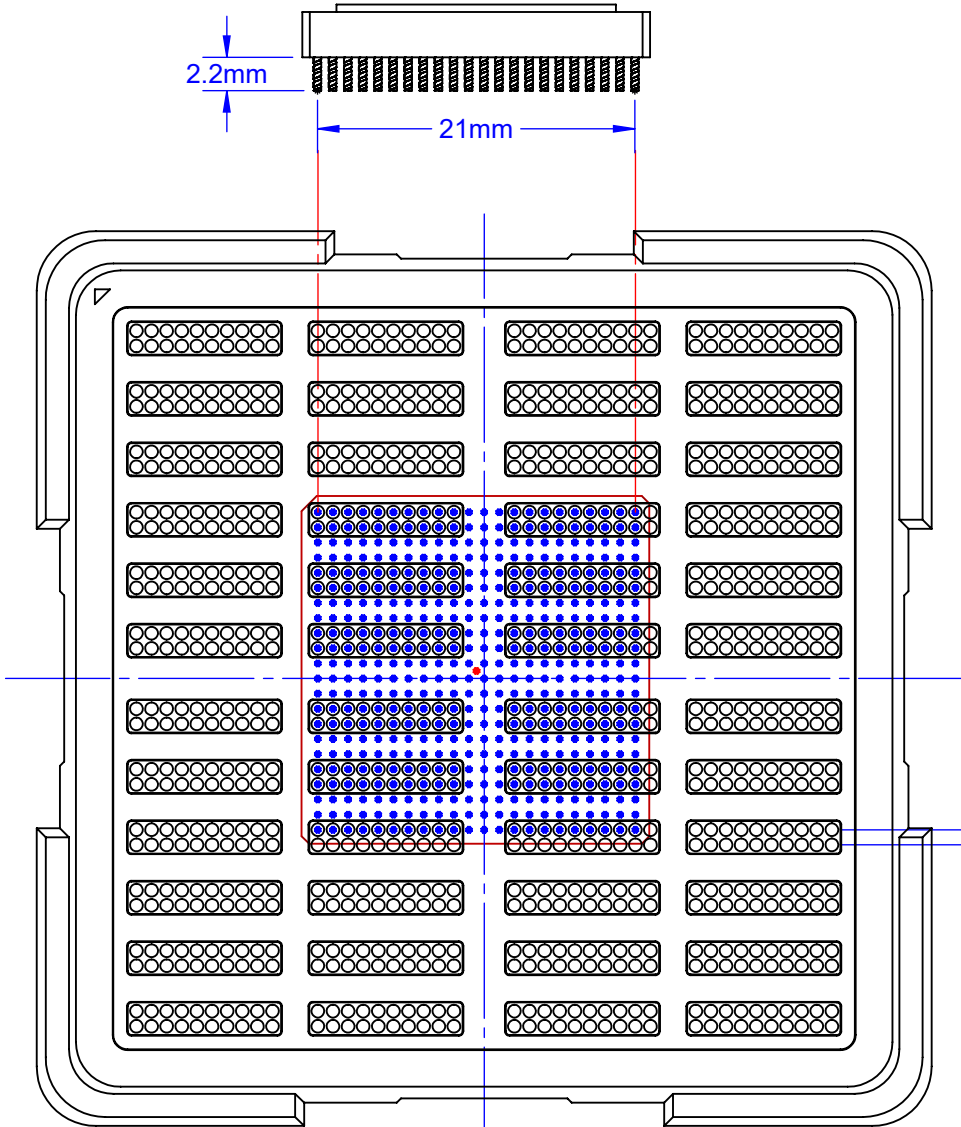
TITLE CCGA UNIVERSAL CARRIER  
 PITCH 1.0MM

SCALE 2:1	SIZE A	DRAWING NO. 034000	REV B
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DO NOT SCALE DRAWING

SHEET 5 OF 19

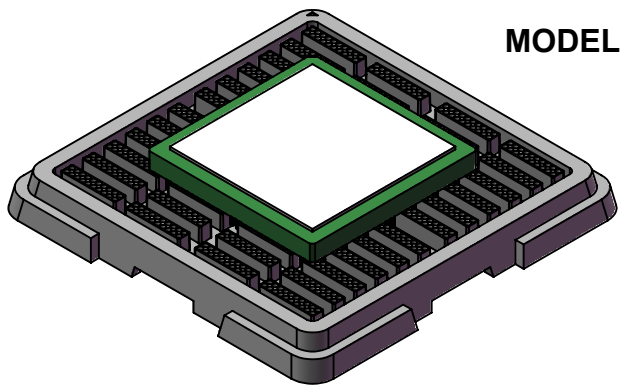
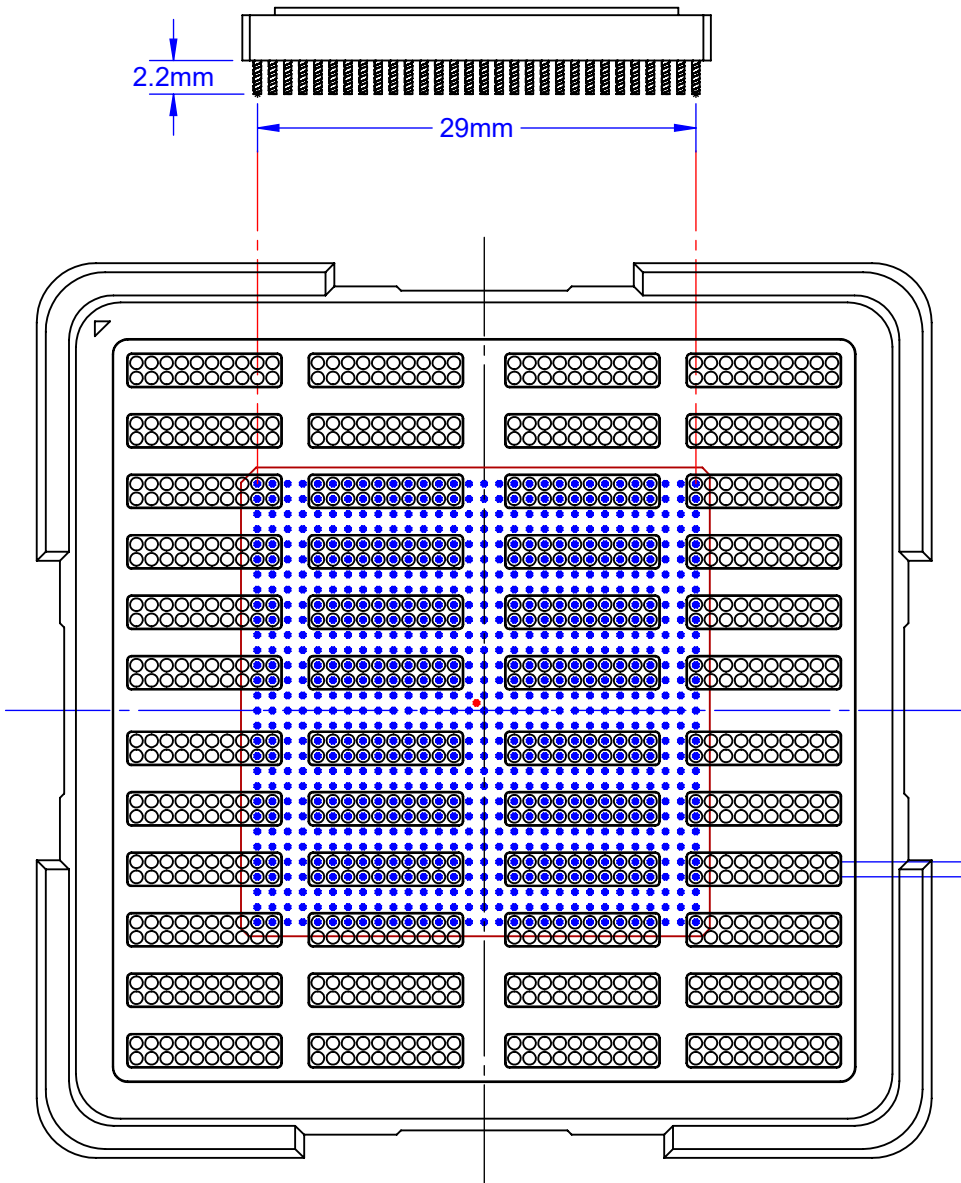
CCGA483  
 COLUMNS 22x22  
 23x23mm



MODEL

<b>TopLine®</b>			
TITLE CCGA UNIVERSAL CARRIER PITCH 1.0MM			
SCALE 2:1	SIZE A	DRAWING NO. 034000	REV B
DO NOT SCALE DRAWING		SHEET 6 OF 19	

CCGA896  
 COLUMNS 30x30  
 31x31mm

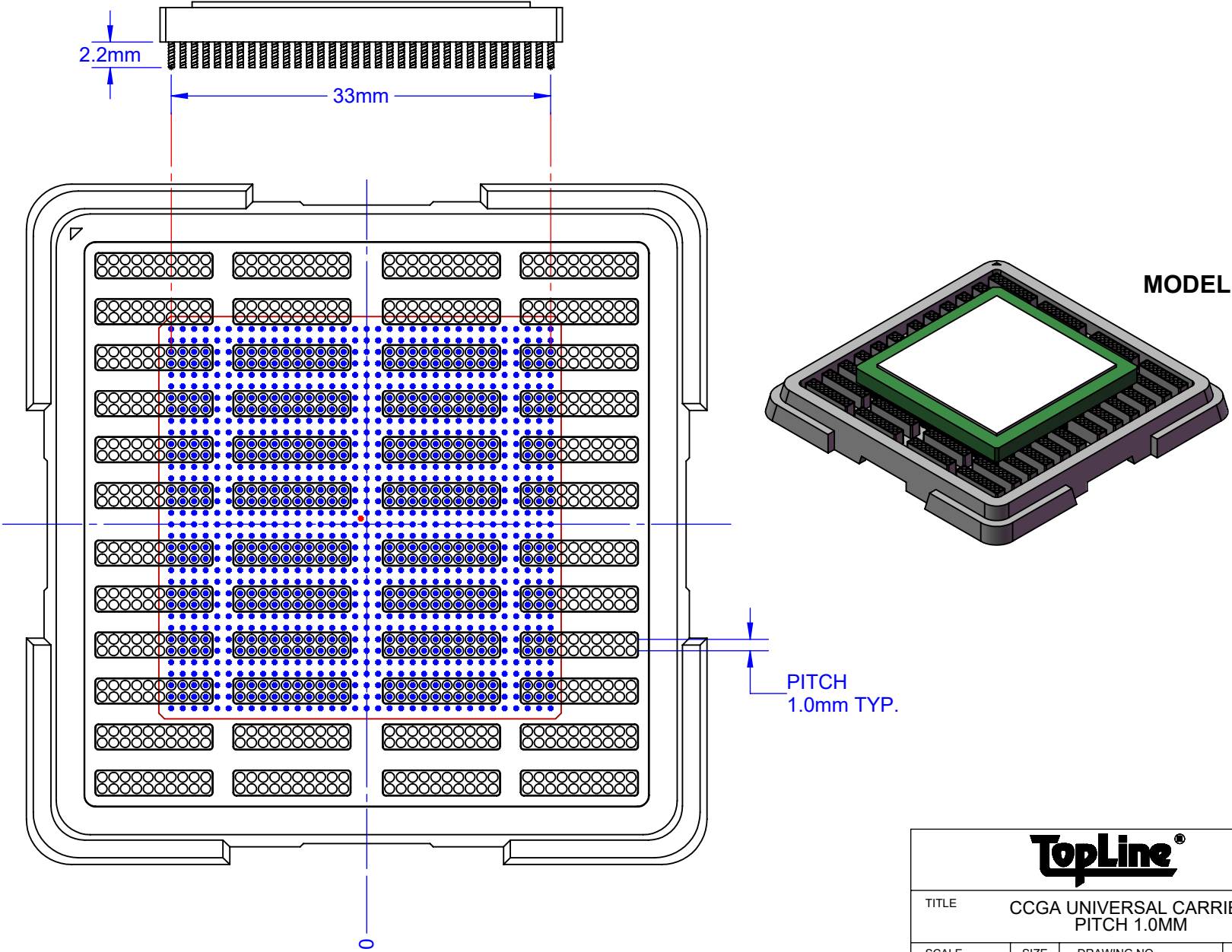


MODEL

PITCH  
 1.0mm TYP.

<b>TopLine®</b>			
TITLE CCGA UNIVERSAL CARRIER PITCH 1.0MM			
SCALE 2:1	SIZE A	DRAWING NO. 034000	REV B
DO NOT SCALE DRAWING		SHEET 7 OF 19	

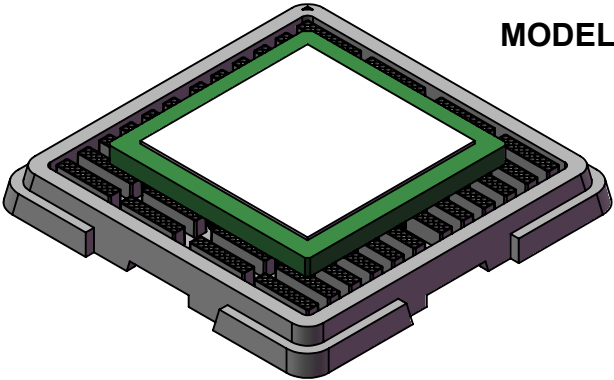
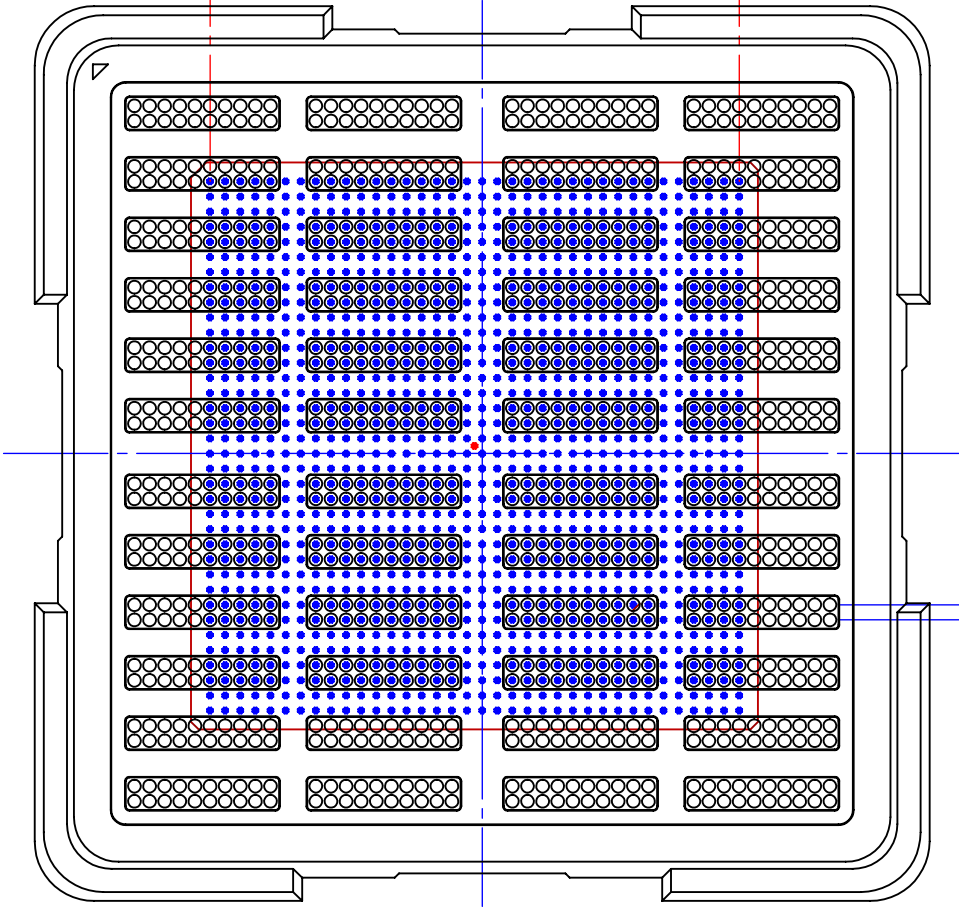
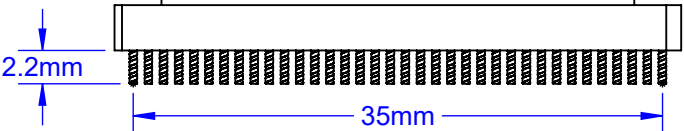
CCGA1140~1152  
 COLUMNS 34x34  
 35x35mm



<b>TopLine®</b>			
TITLE CCGA UNIVERSAL CARRIER PITCH 1.0MM			
SCALE 2:1	SIZE A	DRAWING NO. 034000	REV B
DO NOT SCALE DRAWING		SHEET 8 OF 19	



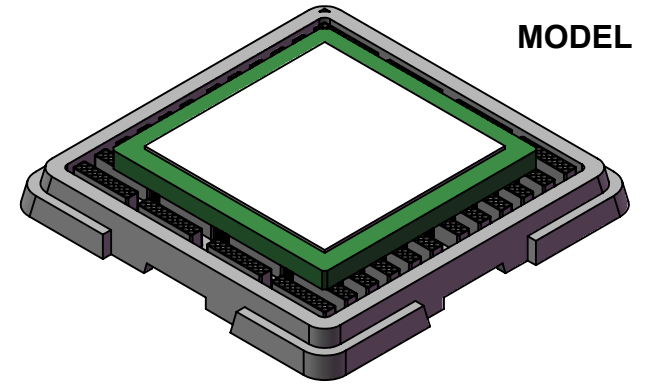
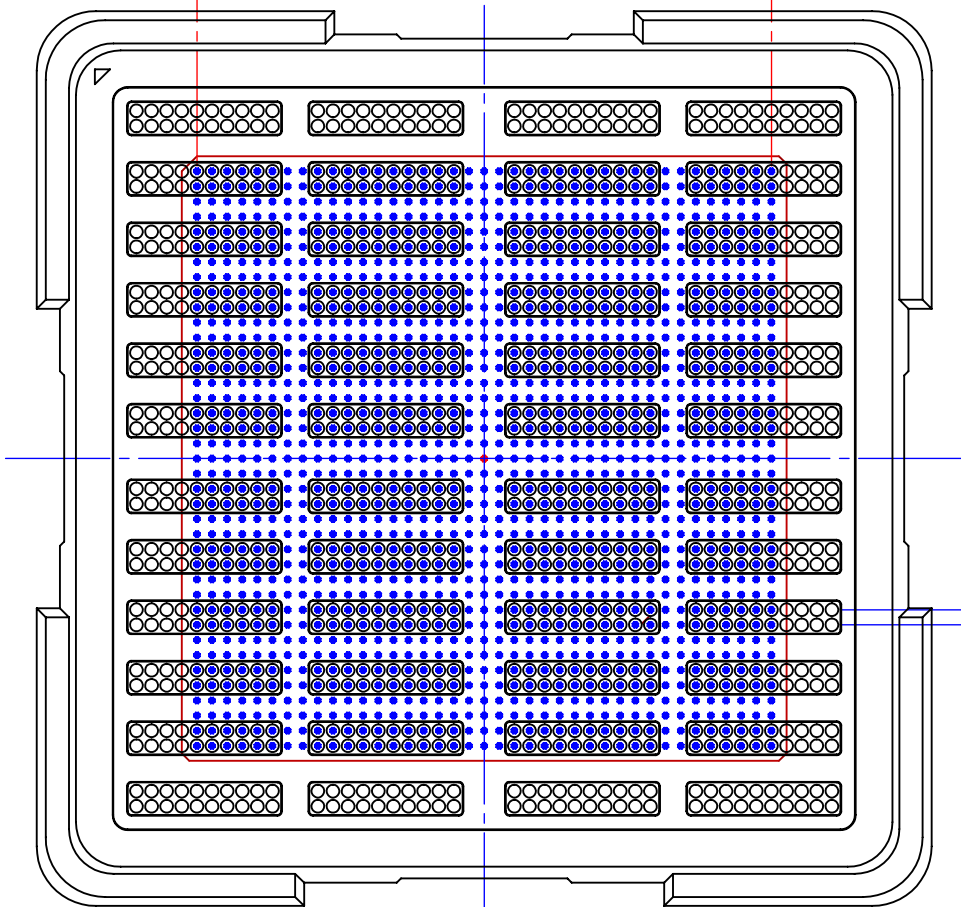
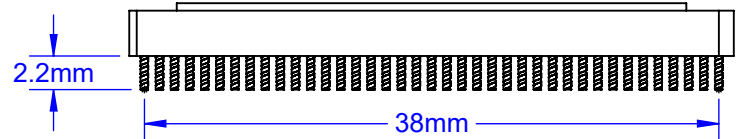
CCGA1272  
 COLUMNS 36x36  
 37.5x37.5mm



PITCH  
 1.0mm TYP.

<b>TopLine®</b>			
TITLE CCGA UNIVERSAL CARRIER PITCH 1.0MM			
SCALE 2:1	SIZE A	DRAWING NO. 034000	REV B
DO NOT SCALE DRAWING		SHEET 9 OF 19	

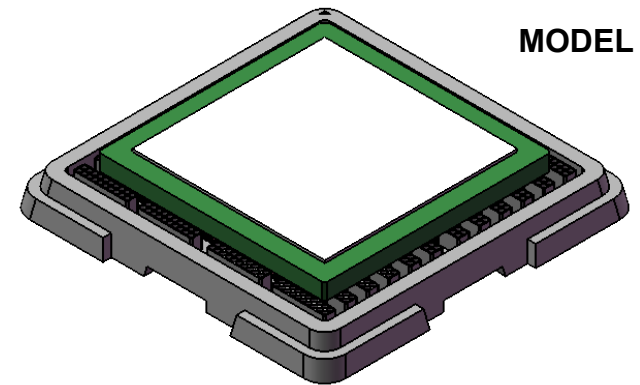
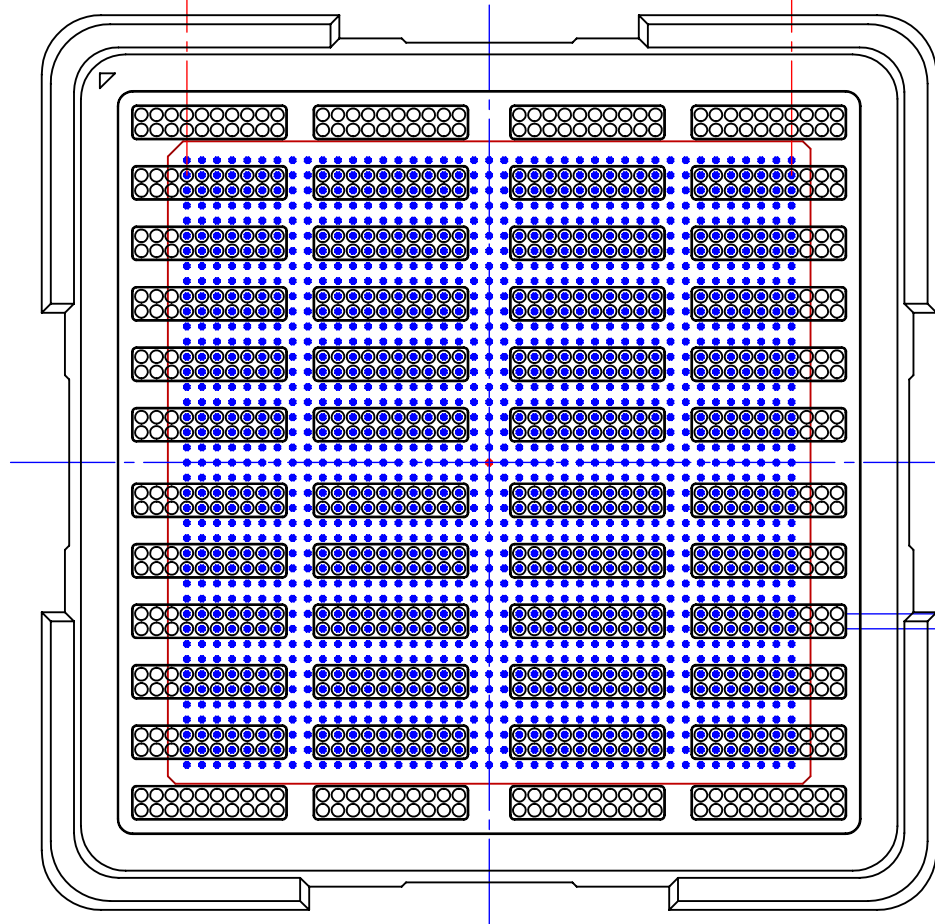
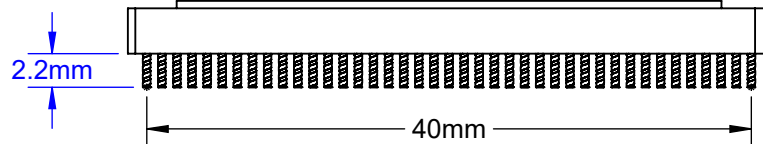
CCGA1509~1517  
 COLUMNS 39x39  
 40x40mm



PITCH  
 1.0mm TYP.

<b>TopLine®</b>			
TITLE CCGA UNIVERSAL CARRIER PITCH 1.0MM			
SCALE 2:1	SIZE A	DRAWING NO. 034000	REV B
DO NOT SCALE DRAWING			SHEET 10 OF 19

CCGA1657  
 COLUMNS 41x41  
 42.5x42.5mm



PITCH  
 1.0mm TYP.

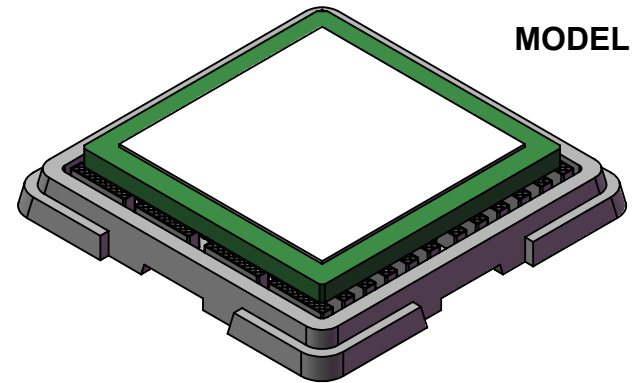
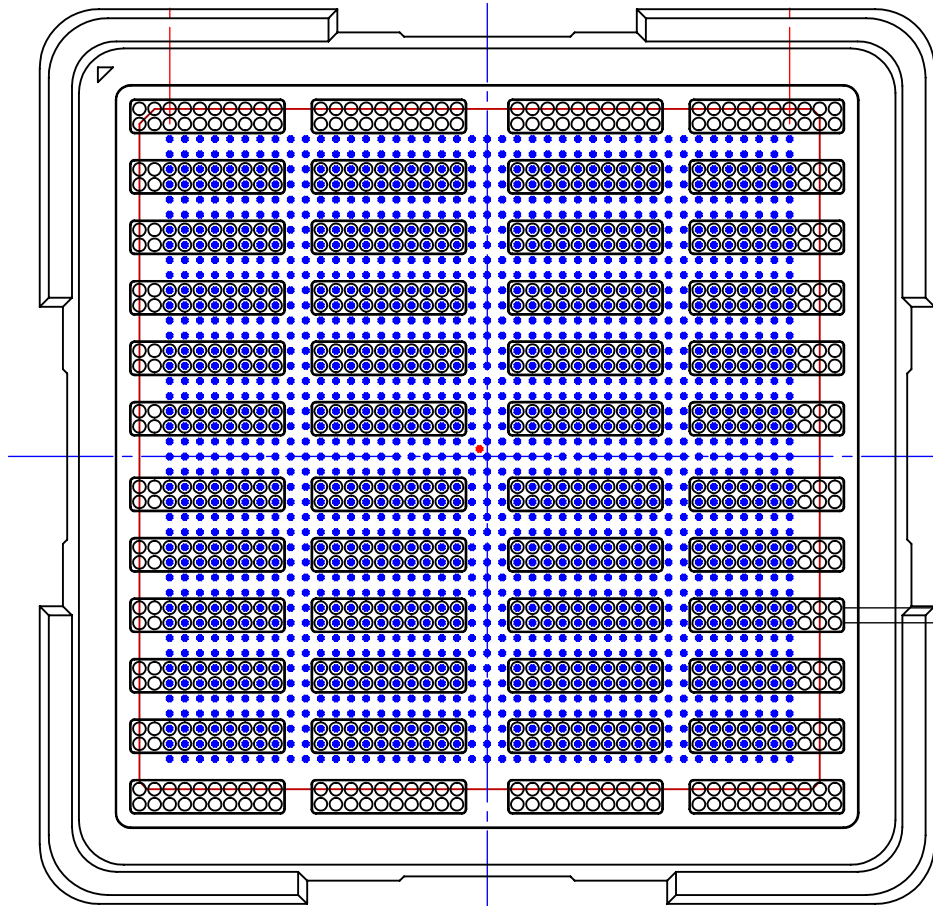
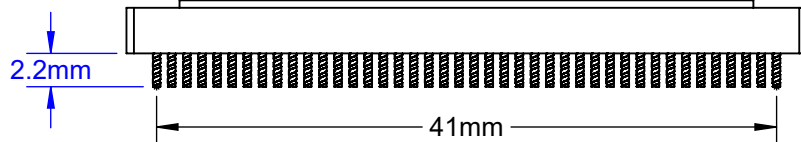
**TopLine**<sup>®</sup>

TITLE CCGA UNIVERSAL CARRIER  
 PITCH 1.0MM

SCALE 2:1	SIZE A	DRAWING NO. 034000	REV B
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DO NOT SCALE DRAWING SHEET 11 OF 19

CCGA1752  
 COLUMNS 42x42  
 45x45mm



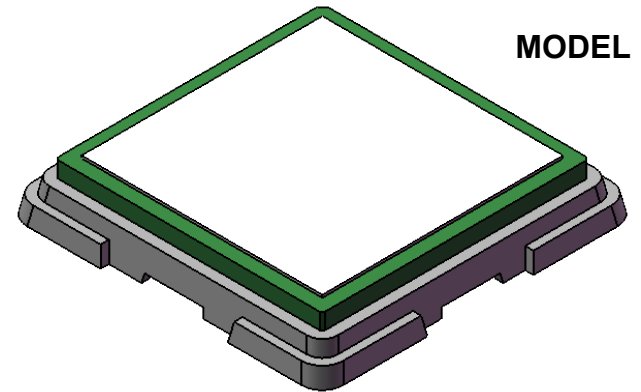
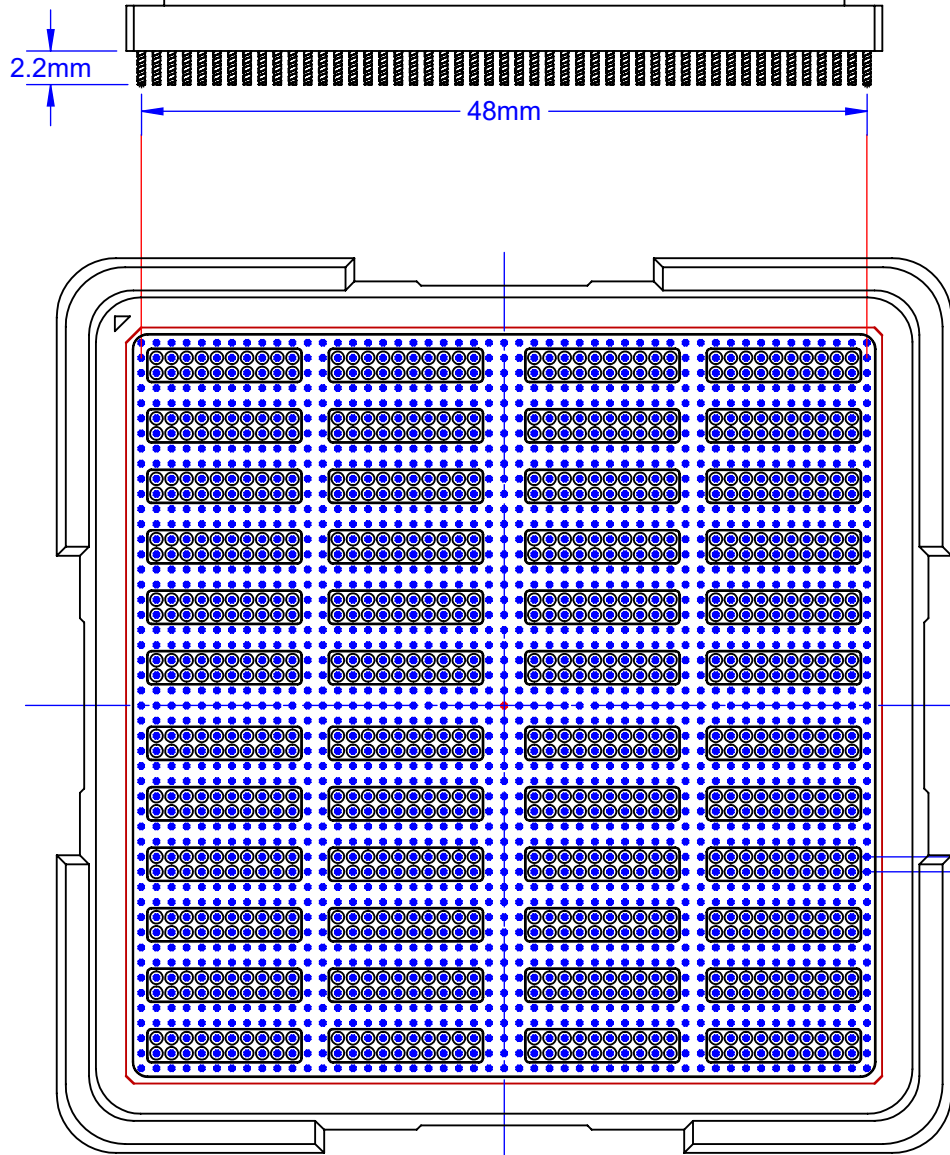
PITCH  
 1.0mm TYP.

**TopLine**<sup>®</sup>

TITLE CCGA UNIVERSAL CARRIER  
 PITCH 1.0MM

SCALE 2:1	SIZE A	DRAWING NO. 034000	REV B
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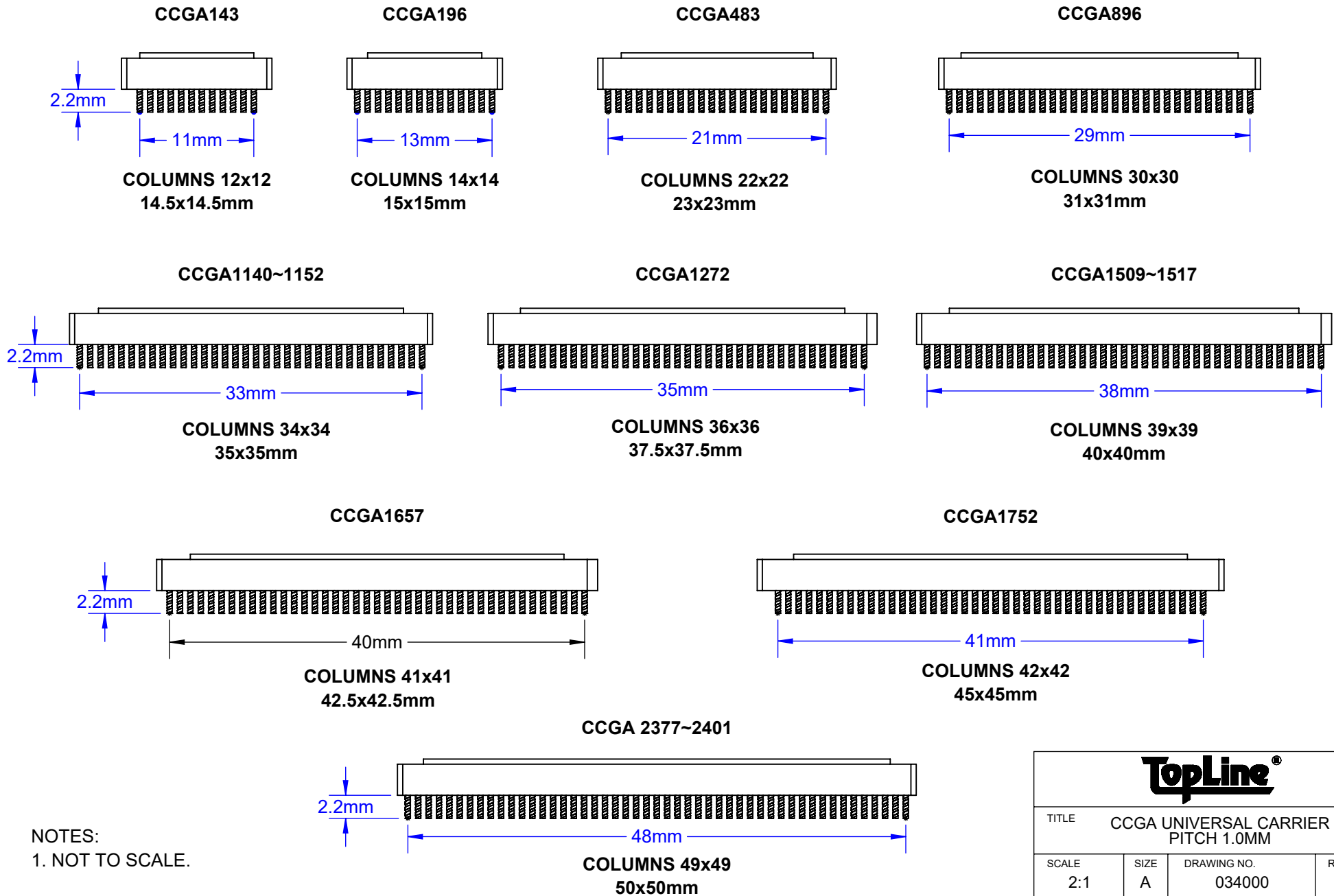
CCGA2377~2401  
 COLUMNS 49x49  
 50x50mm



PITCH  
 1.0mm TYP.

<b>TopLine®</b>			
TITLE CCGA UNIVERSAL CARRIER PITCH 1.0MM			
SCALE 2:1	SIZE A	DRAWING NO. 034000	REV B
DO NOT SCALE DRAWING			SHEET 13 OF 19

# SIDE VIEW SEATING OF CCGA ON CARRIER



NOTES:  
1. NOT TO SCALE.

<b>TopLine®</b>			
TITLE CCGA UNIVERSAL CARRIER PITCH 1.0MM			
SCALE 2:1	SIZE A	DRAWING NO. 034000	REV B
DO NOT SCALE DRAWING			SHEET 14 OF 19

**CCGA SIZE TABLE  
COLUMN MATRIX AND TYPICAL SIZE (MM)**

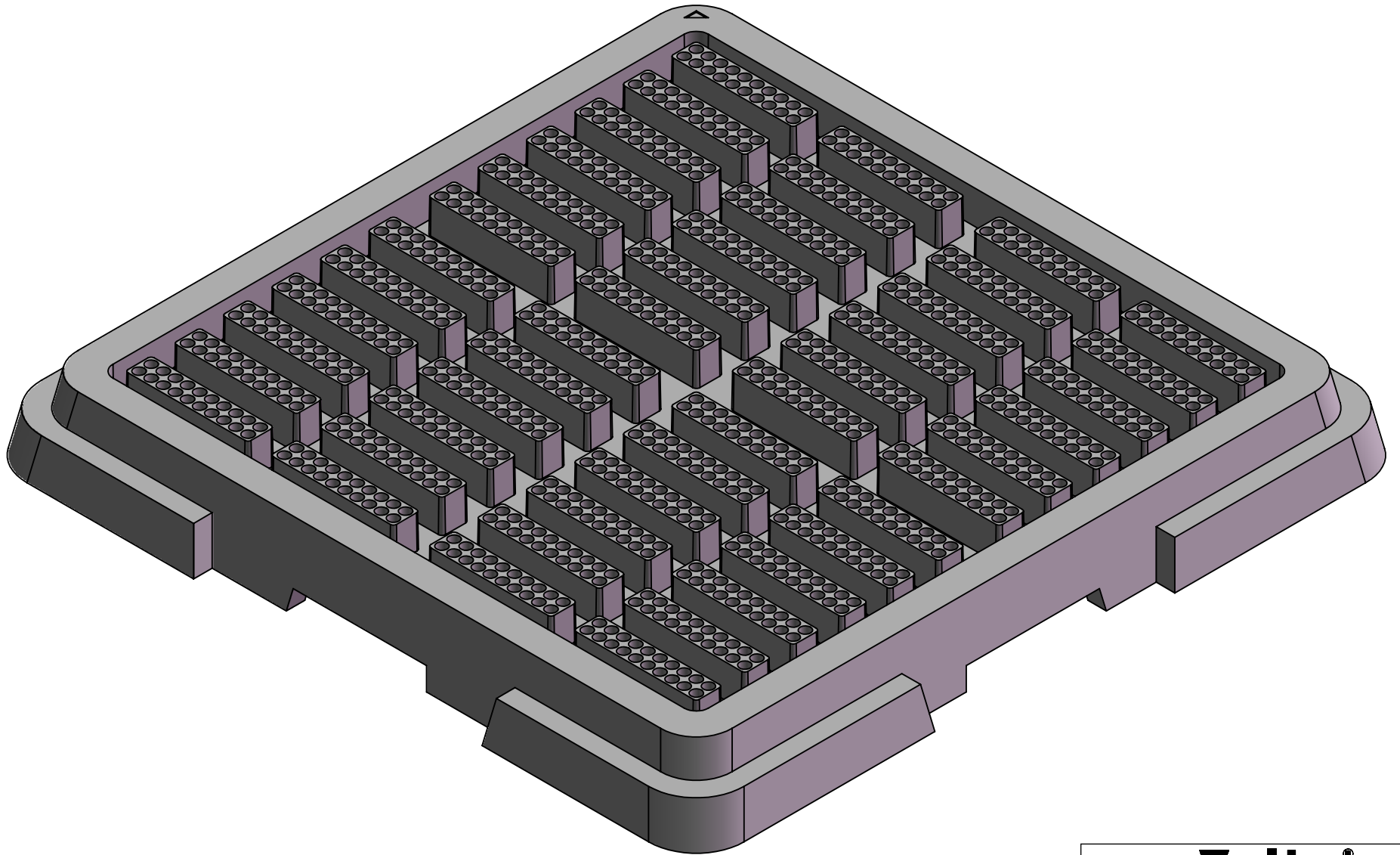
MATRIX		COLUMNS		SIZE
X	Y	Nominal	Maximum	Nominal
12	12	143	144	14.5mm
13	13	169	169	14.5mm
14	14	196	196	15mm
15	15		225	16mm
16	16		256	17mm
17	17	289	289	18mm
18	18		324	19mm
19	19	361	361	21mm
20	20	399	400	21mm
21	21		441	23mm
22	22	483	484	23mm
23	23		529	25mm
24	24	572	576	25mm
25	25		625	27mm
26	26		676	29mm
27	27		729	29mm
28	28		784	31mm
29	29		841	31mm
30	30	896	900	31mm

MATRIX		COLUMNS		SIZE
X	Y	Nominal	Maximum	Nominal
31	31		961	33mm
32	32		1024	33mm
33	33		1089	35mm
34	34	1140~1152	1156	35mm
35	35		1225	37.5mm
36	36	1272	1296	37.5mm
37	37		1369	40mm
38	38		1444	40mm
39	39	1509	1521	40mm
40	40		1600	40mm
41	41	1657	1681	42.5mm
42	42	1752	1764	45mm
43	43		1849	45mm
44	44		1936	45mm
45	45		2025	47.5mm
46	46	2104	2116	47.5mm
47	47		2209	50mm
48	48		2304	50mm
49	49	2377	2401	50mm

**NOTES:**  
**1. CONTACT TOPLINE FOR OTHER SIZES.**

<b>TopLine®</b>			
TITLE CCGA UNIVERSAL CARRIER PITCH 1.0MM			
SCALE 6:1	SIZE A	DRAWING NO. 034000	REV B
DO NOT SCALE DRAWING		SHEET 15 OF 19	

MODEL  
TOP



**TopLine**<sup>®</sup>

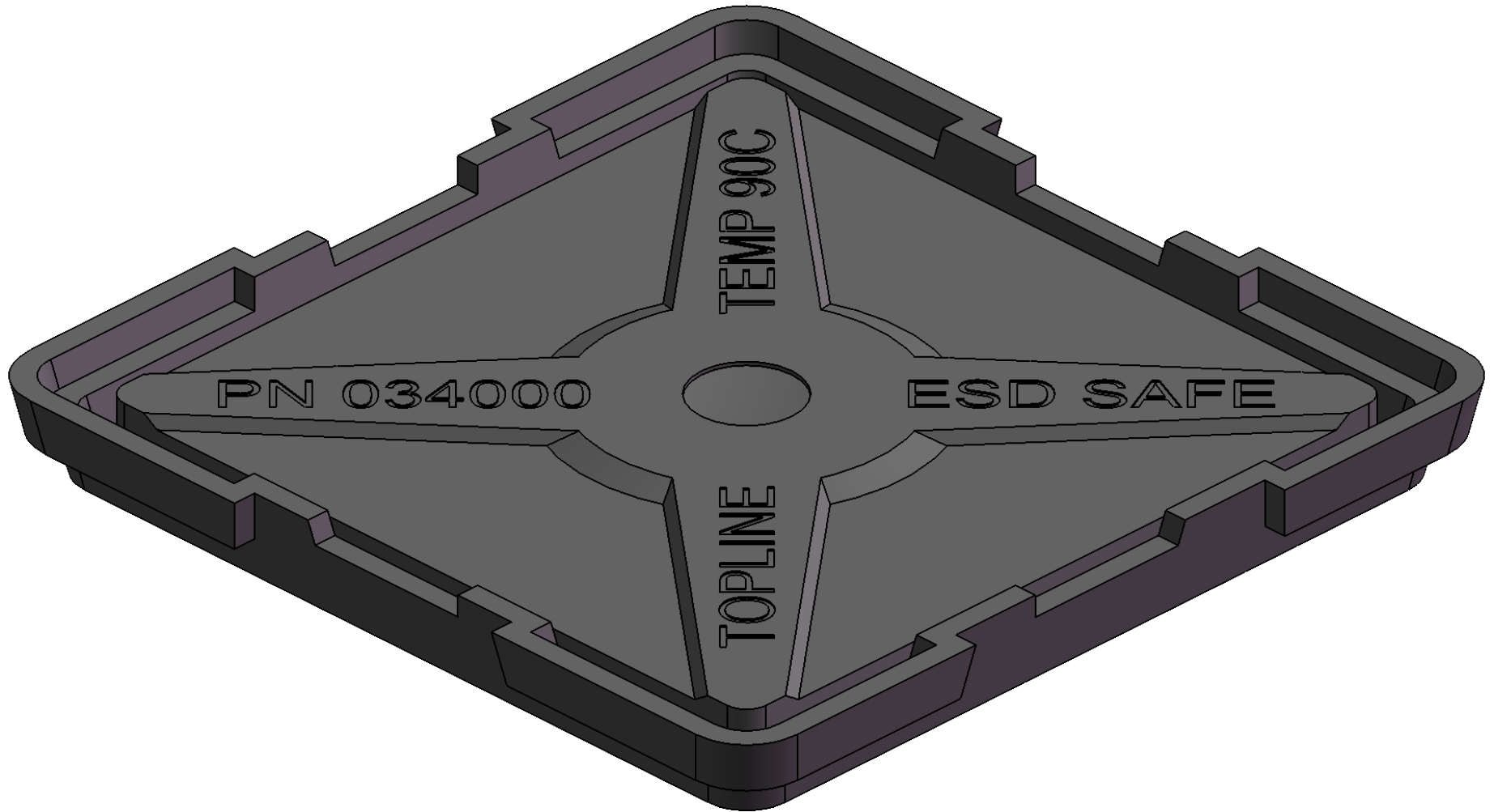
TITLE CCGA UNIVERSAL CARRIER  
PITCH 1.0MM

SCALE 3:1	SIZE A	DRAWING NO. 034000	REV B
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DO NOT SCALE DRAWING SHEET 16 OF 19



MODEL  
BOTTOM



**TopLine®**

TITLE CCGA UNIVERSAL CARRIER  
PITCH 1.0MM

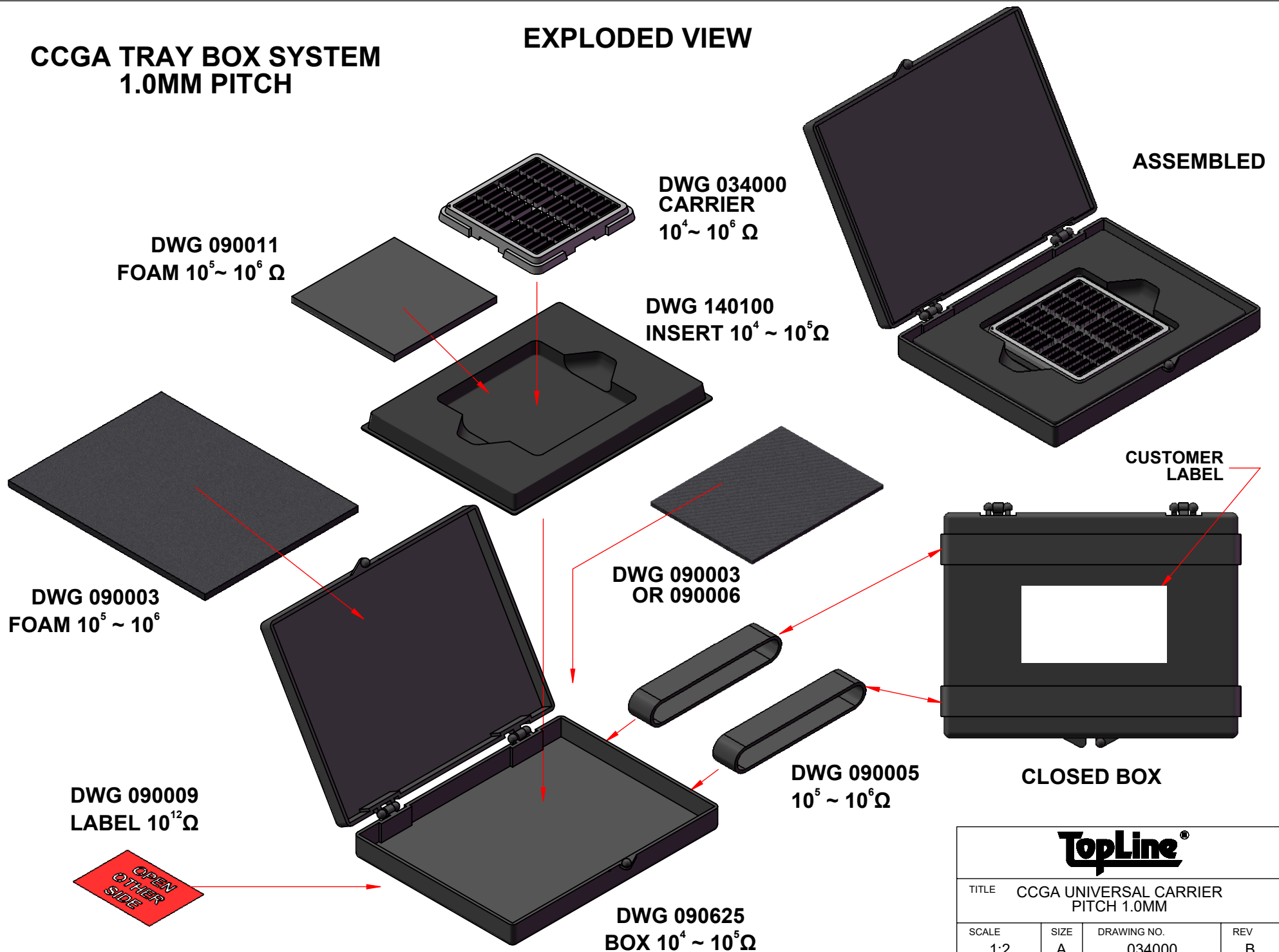
SCALE 3:1	SIZE A	DRAWING NO. 034000	REV B
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DO NOT SCALE DRAWING

SHEET 17 OF 19

# CCGA TRAY BOX SYSTEM 1.0MM PITCH

## EXPLODED VIEW



<b>TopLine®</b>			
TITLE CCGA UNIVERSAL CARRIER PITCH 1.0MM			
SCALE 1:2	SIZE A	DRAWING NO. 034000	REV B
DO NOT SCALE DRAWING		SHEET 18 OF 19	

# EXPLODED SIDE VIEW

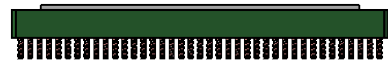
CUSTOMER LABEL



DWG 090625 BOX TOP



DWG 090003 TOP FOAM



CCGA COMPONENT



DWG 034000 CARRIER



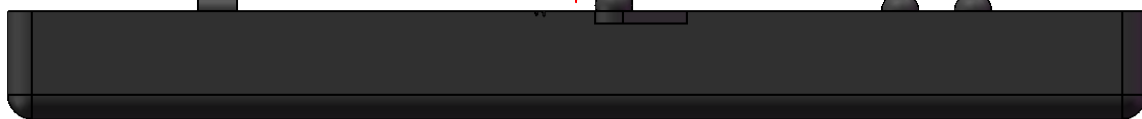
DWG 090011 FOAM



DWG 140110 INSERT



DWG 090003 FOAM (LOW PROFILE CCGA)  
 DWG 090006 FOAM (HIGH PROFILE CCGA)



DWG 090625  
 BOX BOTTOM

DWG 090009 LABEL



TITLE CCGA UNIVERSAL CARRIER  
 PITCH 1.0MM

SCALE 1:2	SIZE A	DRAWING NO. 034000	REV B
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DO NOT SCALE DRAWING

SHEET 19 OF 19