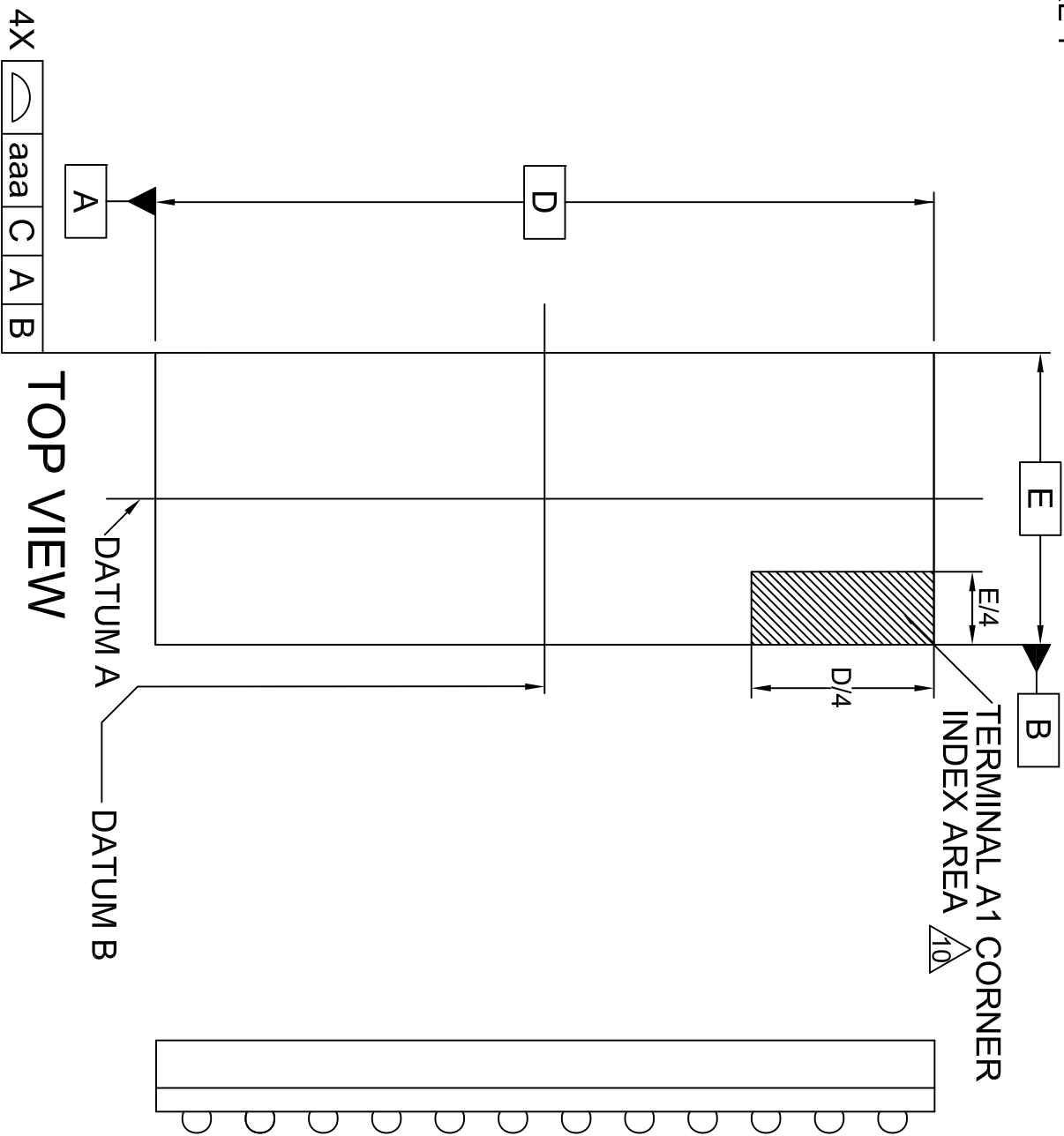


FIGURE 1



REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
00	INITIAL RELEASE	01/02/14	CK LEE

TOLERANCES UNLESS SPECIFIED		TITLE	
DECIMAL	ANGULAR	AVG48 3.00 X 8.00 mm BODY	
XXX±.1	±	0.65MM PITCH CVBGA	
XXXX±.05		DRAWING No. PSC-4476	
XXXX±.030		REV 00	
APPROVALS	DATE	SIZE C	
DRAWN CJK	01/22/14	DO NOT SCALE DRAWING	
CHECKED		SHEET 1 OF 6	


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// bbb C

DETAIL B

TOP VIEW

SEATING PLANE

TERMINAL A1 CORNER INDEX AREA 10

A

D

E

B

4X aaa C A B

8

A

A2

A1

E/4

D/4

DATUM A

DATUM B

10

// bbb C

DETAIL B

TOP VIEW

SEATING PLANE

TERMINAL A1 CORNER INDEX AREA 10

A

D

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B

4X aaa C A B

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SEATING PLANE

TERMINAL A1 CORNER INDEX AREA 10

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D/4

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DETAIL B

TOP VIEW

SEATING PLANE

TERMINAL A1 CORNER INDEX AREA 10

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DATUM A

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SEATING PLANE

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DATUM A

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// bbb C

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TOP VIEW

SEATING PLANE

TERMINAL A1 CORNER INDEX AREA 10

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4X aaa C A B

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DATUM A

DATUM B

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// bbb C

DETAIL B

TOP VIEW

SEATING PLANE

TERMINAL A1 CORNER INDEX AREA 10

A

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E/4

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DATUM A

DATUM B

10

// bbb C

DETAIL B

TOP VIEW

SEATING PLANE

TERMINAL A1 CORNER INDEX AREA 10

A

D

E

B

4X aaa C A B

8

A

A2

A1

E/4

D/4

DATUM A

DATUM B

10

// bbb C

DETAIL B

TOP VIEW

SEATING PLANE

TERMINAL A1 CORNER INDEX AREA 10

A

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E

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4X aaa C A B

8

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E/4

D/4

DATUM A

DATUM B

10

// bbb C

DETAIL B

TOP VIEW

SEATING PLANE

TERMINAL A1 CORNER INDEX AREA 10

A

D

E

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4X aaa C A B

8

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A2

A1

E/4

D/4

DATUM A

DATUM B

10

// bbb C

DETAIL B

TOP VIEW

SEATING PLANE

TERMINAL A1 CORNER INDEX AREA 10

A

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4X aaa C A B

8

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A2

A1

E/4

D/4

DATUM A

DATUM B

10

// bbb C

DETAIL B

TOP VIEW

SEATING PLANE

TERMINAL A1 CORNER INDEX AREA 10

A

D

E

B

4X aaa C A B

8

A

A2

A1

E/4

D/4

DATUM A

DATUM B

10

// bbb C

DETAIL B

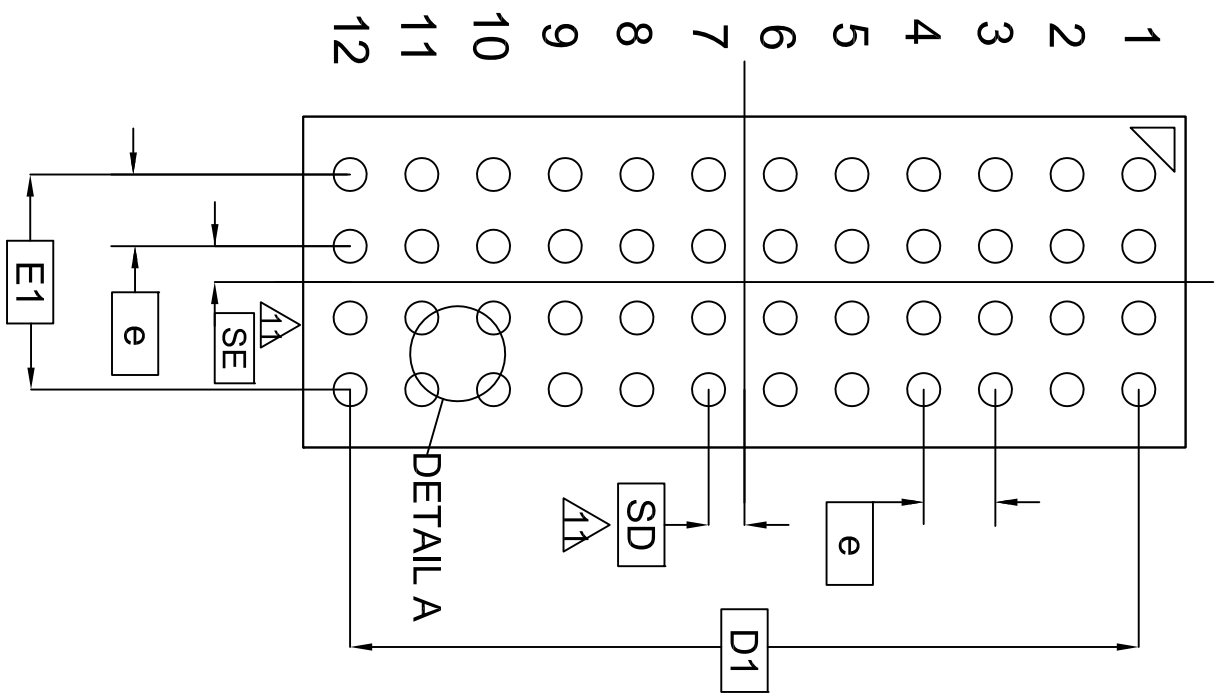
TOP VIEW

SEATING PLANE

TERMINAL A1 CORNER INDEX AREA 10

FIGURE 2

A B C D



BOTTOM VIEW
(BALL SIDE VIEW)

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
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TOLERANCES UNLESS SPECIFIED		TITLE	
DECIMAL	ANGULAR	AVC48 3.00 X 8.00 mm BODY	
XXXX±.05	±	0.65MM PITCH CVBGA	
XXXX±.030		DRAWING No. PSC-4476	
APPROVALS		DATE	REV
DRAWN	CJK	01/22/14	00
CHECKED			
DO NOT SCALE DRAWING		SHEET 2 OF 6	

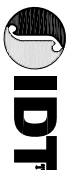
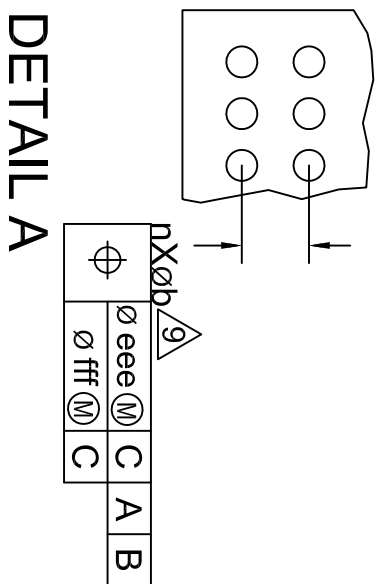
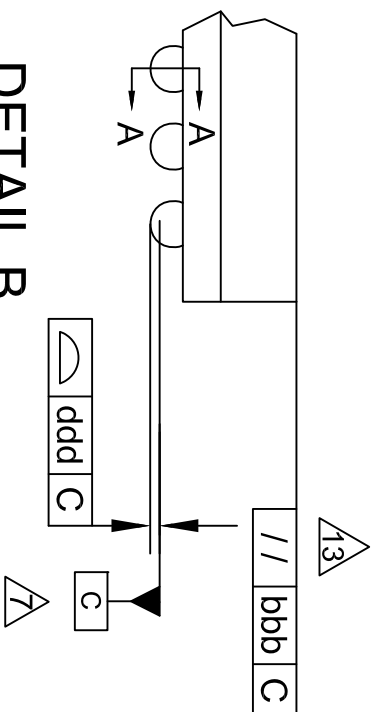

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FIGURE 3

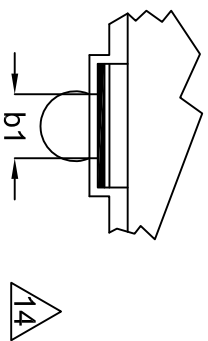
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
00	INITIAL RELEASE	01/02/14	CK LEE



DETAIL A



DETAIL B



SECTION A-A

TOLERANCES UNLESS SPECIFIED		TITLE	
DECIMAL	ANGULAR	AVG48 3.00 X 8.00 mm BODY	
±	±	0.65MM PITCH CVBGA	
XXXX±.05		www.IDT.com	
XXXX±.030		6024 Silver Creek Valley Rd	
APPROVALS	DATE	San Jose, CA 95138	
DRAWN CJK	01/22/14	PHONE: (408) 284-8200	
CHECKED		FAX: (408) 284-2775	
SIZE	DRAWING No.	REV	
C	PSC-4476	00	
DO NOT SCALE DRAWING		SHEET 3 OF 6	

REVISIONS			
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TABLE 3


VARIATION TABLE		
VARIATION SYMBOLS	AN	NOTES
A	MIN	0.994
	NOM	1.074
	MAX	1.154
A1	MIN	0.19
	NOM	0.24
	MAX	0.29
A2	MIN	0.82
	NOM	0.88
	MAX	1.00
D BSC	8.00	
D1 BSC	7.15	
E BSC	3.00	
E1 BSC	1.95	
MD	12	4, 12
ME	4	4, 12
n	48	5, 12
SD	0.325	11
SE	0.325	11
NOTE	1, 2	
ITEM	11-XXXX	
ISSUE	-	

TABLE 1

COMMON DIMENSIONS				
SYMBOLS †	MIN	NOM	MAX	NOTE
b	0.25	0.30	0.35	9
b1	0.225	0.275	0.325	14
e	0.65 BSC			
NOTES	1, 2			
REF	11.11-756			
ISSUE	A			

TABLE 2

TOLERANCES OF FORM AND POSITION	
SYMBOLS	TOLERANCE
aaa	0.15
bbb	0.20
ddd	0.08
eee	0.15
fff	0.05
NOTES	1, 2
REF	11.11-756
ISSUE	A

TOLERANCES UNLESS SPECIFIED		6024 Silver Creek Valley Rd San Jose, CA 95138	
DECIMAL	ANGULAR	PHONE: (408) 284-8200	
XX.X	±	FAX: (408) 284-2775	
XXXX.05		 www.IDT.com	
XXXX.030			
APPROVALS	DATE	TITLE	
DRAWN CJK	01/22/14	AVC48 3.00 X 8.00 mm BODY	
CHECKED		0.65MM PITCH CVBGA	
SIZE	DRAWING No.	REV	
C	PSC-4476	00	
DO NOT SCALE DRAWING		SHEET 4 OF 6	

NOTES

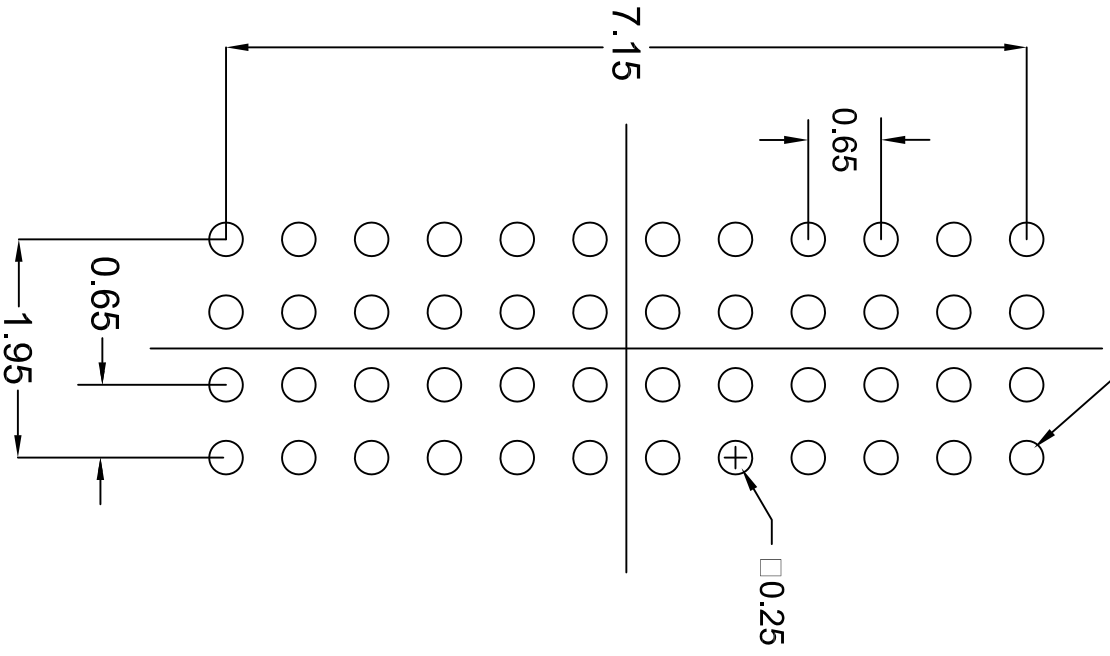
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994. THIS OUTLINE CONFORMS TO JEP95, SECTION 4.6.
2. DIMENSIONS ARE IN MILLIMETERS.
3. BALL DESIGNATIONS PER JEP95, SECTION 3, SPP-020.
4. MD AND ME REPRESENT THE MAXIMUM MATRIX SIZE CORRESPONDING TO THE D AND E DIRECTIONS, RESPECTIVELY.
5. n REPRESENTS THE NUMBER OF BALLS POPULATED ON THE BOTTOM SIDE FOR EACH VARIATION.
 6. A 14X14 PERIPHERAL MATRIX IS SHOWN FOR ILLUSTRATION ONLY.
 7. DATUM C (SEATING PLANE) IS DEFINED BY THE CROWNS OF THE BALLS.
 8. PACKAGE PROFILE HEIGHT (A) INCLUDES STAND-OFF HEIGHT (A1) AND BODY THICKNESS (A2).
 9. DIMENSION b IS MEASURED AT THE MAXIMUM BALL DIAMETER IN A PLANE PARALLEL TO DATUM C.
 10. THE CORNER A1 MUST BE IDENTIFIED ON BOTH THE BOTTOM AND TOP SIDES OF THE PACKAGE. THE IDENTIFICATION FEATURE CAN BE MADE USING INK OR METALIZED MARKINGS, INDENTATIONS, OR OTHER FEATURES. THE EXACT SHAPE OF EACH CORNER IS OPTIONAL.
 11. DIMENSIONS SD AND SE ARE MEASURED WITH RESPECT TO DATUMS A AND B AND DEFINE THE POSITION OF THE CENTERMOST BALLS IN THE OUTER ROW FOR A FULLY POPULATED MD X ME. WHEN THERE IS AN ODD NUMBER OF BALLS IN THE OUTER ROW, SD AND SE = 0, WHEN THERE IS AN EVEN NUMBER OF BALLS IN THE OUTER ROW, SD AND SE = e/2.
 12. THE BALL ARRAY MAY BE DEPOPULATED IN ANY PATTERN. DEPOPULATION IS THE OMISSION OF BALLS FROM A FULL MD X ME MATRIX.
 13. PARALLELISM (bbb) APPLIES ONLY TO THE SURFACE DIRECTLY ABOVE THE DIE AREA FOR GLOB TOP, OVER MOLDED AND / OR FLIP CHIP CONFIGURATIONS. THE PARALLELISM SPECIFICATION WILL NOT APPLY TO ANY FILLET OR SLOPED REGION OF THE ENCAPSULANT.
 14. THE SOLDERABLE SURFACE MAY BE DEFINED BY AN OPENING IN THE SOLDER RESIST LAYER. IT MAY BE ELLIPTICAL, PROVIDED THE RATIO OF MAJOR TO MINOR AXIS IS NO GREATER THAN 2/1, AND THE SURFACE AREA IS NO LESS THAN THE MINIMUM FOR A CIRCULAR PAD.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
00	INITIAL RELEASE	01/02/14	CK LEE

TOLERANCES UNLESS SPECIFIED		TITLE	
DECIMAL	ANGULAR	AVG48 3.00 X 8.00 mm BODY	
XXX±.1	±	0.65MM PITCH CVBGA	
XXXX±.05		DRAWING No. PSC-4476	
XXXX±.030		REV 00	
APPROVALS	DATE	SIZE C	
DRAWN CX	01/22/14	DO NOT SCALE DRAWING	
CHECKED		SHEET 5 OF 6	



A1 CORNER



RECOMMENDED LAND PATTERN

NOTE:

- 1) ALL dimensions are in mm, Angles in degrees.
- 2) Top down view, as view on PCB.
- 3) NSMD Land Pattern Assumed
- 4) Land Pattern Recommendation as per IPC-7351B generic requirement for surface mount design and Land Pattern.

REVISIONS			
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00	INITIAL RELEASE	01/02/14	CK LEE

TOLERANCES UNLESS SPECIFIED		6024 Silver Creek Valley Rd	
DECIMAL	ANGULAR	San Jose, CA 95138	
XXX.X	±	PHONE: (408) 284-8200	
XXXX.X		WWW.IDT.COM FAX: (408) 284-2775	
XXXXX.X			
APPROVALS		TITLE	
DRAWN	DATE	AVG48 3.00 X 8.00 mm BODY	
CYT	01/27/14	0.65MM PITCH CVBGA	
CHECKED			
SIZE	DRAWING NO.	REV	
C	PSC-4476	00	
DO NOT SCALE DRAWING			
		SHEET	6 OF 6