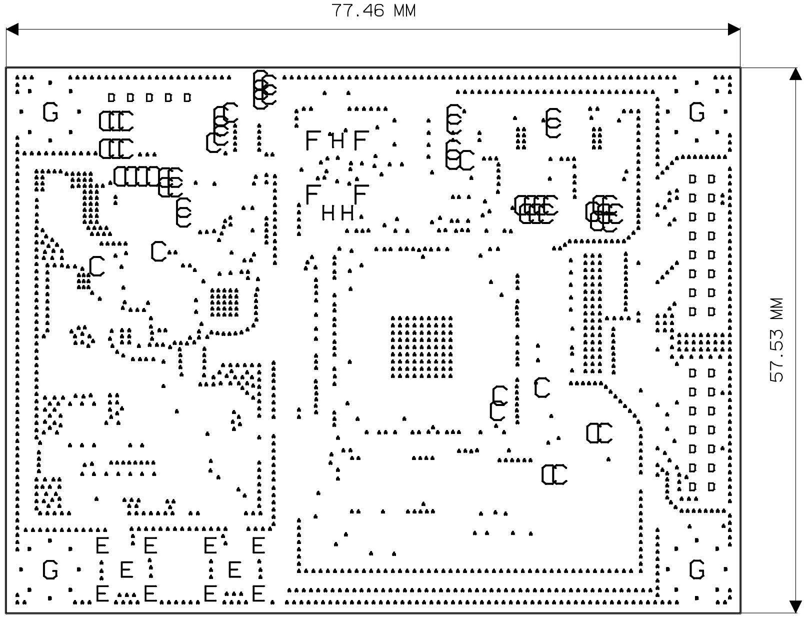
ZONE	REV	DESCRIPTION	DATE	APPROVED
REVISION HISTORY				



SHEET LEGEND:

SHEET 1: Fabrication drawing
SHEET 2: Layer 1(Top signal)
SHEET 3: Layer 2(GND plane)
SHEET 4: Layer 3(PWR plane)
SHEET 5: Layer 1(Bottom signal)
SHEET 6: Top solder mask pattern
SHEET 7: Bottom solder mask pattern
SHEET 8: Top silkscreen pattern
SHEET 9: Bottom silkscreen pattern
SHEET 10: Top mask pattern
SHEET 11: Bottom mask pattern
SHEET 12: Assembly Top drawing
SHEET 13: Assembly Bottom drawing

Notes:

1. Fabricate PCB in accordance with IPC-6012, Class 2; per IPC-6011.

2. Materials:

2.1 Laminate and Prepreg (B-stage) to be in accordance with IPC-4101/21.

2.2 Copper foil to be in accordance with IPC-MF-150. Unless otherwise specified, all copper weight for inner signal layers and inner plane layers to be 35um (1 oz.). For outer layers 25um (0.5 oz + finished copper). Copper weight is to be considered 'finished'.

3. All holes shall be located within 0.2 (0.008") Diameter of True Position. Layer to layer registration shall be within 0.125 (0.005").

4.Finish:

4.1 All exposed conductive pattern areas not covered with solder mask or other plating shall be plated Electroless Nickel Immersion Gold (ENIG) per IPC-4552.

4.2 Apply liquid photo imageable solder mask (color black mate) per IPC-SM-840, class H, to both sides of the board over bare copper. Via holes covered with solder mask do not need to be plugged. Only solder mask images that are the same size as the component pads may be enlarged, and shall not be enlarged beyond 0.08 (0.003" per side or 0.15 (0.006") overall. All other solder mask images shall not be enlarged.

4.3 Silkscreen shall be white, permanent, organic, non-conductive ink. There shall be no silkscreen on any solderable component pad.

5. Marking:

5.1 Board part number and revision letter is rendered in silkscogreen on the top side of the board. Revision letter should be identical to this drawing.

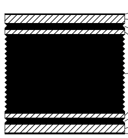
5.2 UL logo, manufactures identification and date code letter shall be rendered in silckscreen on the bottom side of the
board approximately where shown.

6. Test requirements:

6.1 100% net list electrical verification using customer supplied IPC-D-356 net list for opens and shorts.

7. The supplier may add thieving to compensate for low copper density areas on this design. Thieving shall not be added to within 3.8mm (0.150") minimum distance to any existing feature. There shall be no exposed thieving in any areas free of solder mask.

Through Holes						
Symbol	Diameter	Tolerance	Plated	Punched	HoleName	Quantity
A	0.0080		Yes	No	Rnd 8	1605
B	0.0120		Yes	No	Rnd 0.3048 MM	32
C	0.0200		Yes	No	Rnd 20	56
D	0.0315		Yes	No	Rnd 0.8 MM	35
E	0.0630		Yes	No	Rnd 1.6 MM	10
F	0.0945		Yes	No	Rnd 2,4	4
G	0.1575		Yes	No	Rnd 4	4
H	0.0394		No	No	Rnd 1 Non-Plated	3



Dielectric (0.7 th) - Solder_Mask
Layer 1 (1.35 th) - Conductive (Microstrip)
Dielectric (4 th) - Core/Pre-preg
Layer 2 (0.75 th) - Conductive (Plane)
Dielectric (50 th) - Core/Pre-preg
Layer 3 (0.75 th) - Conductive (Plane)
Dielectric (4 th) - Core/Pre-preg
Layer 4 (1.35 th) - Conductive (Microstrip)
Dielectric (0.7 th) - Solder_Mask

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN MILLIMETERS
TOLERANCES ON ANGLE ∠ .XX∼
0 PLACE ∠ X 1 PLACE ∠ .X
INTERPRET DIM AND TOL
PER ASME Y14.5M - 1994

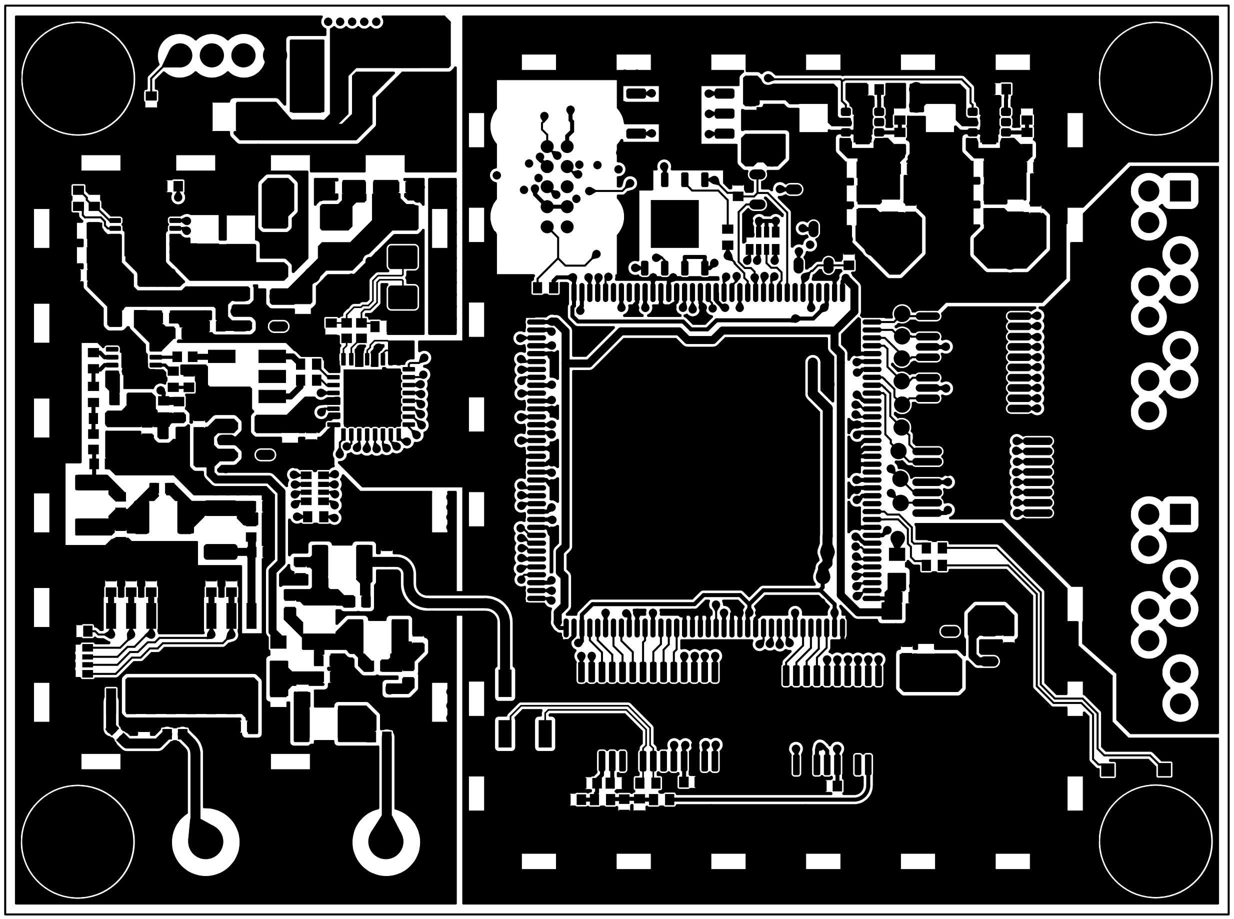
Ermak

Fabrication drawing
Ermak frontend

SIZE	CAGE CODE	DWG NO.	REV
A2			1.0
SCALE 3:1		SHEET 1 OF 13	

DWG No
SH 1
REV 1.0

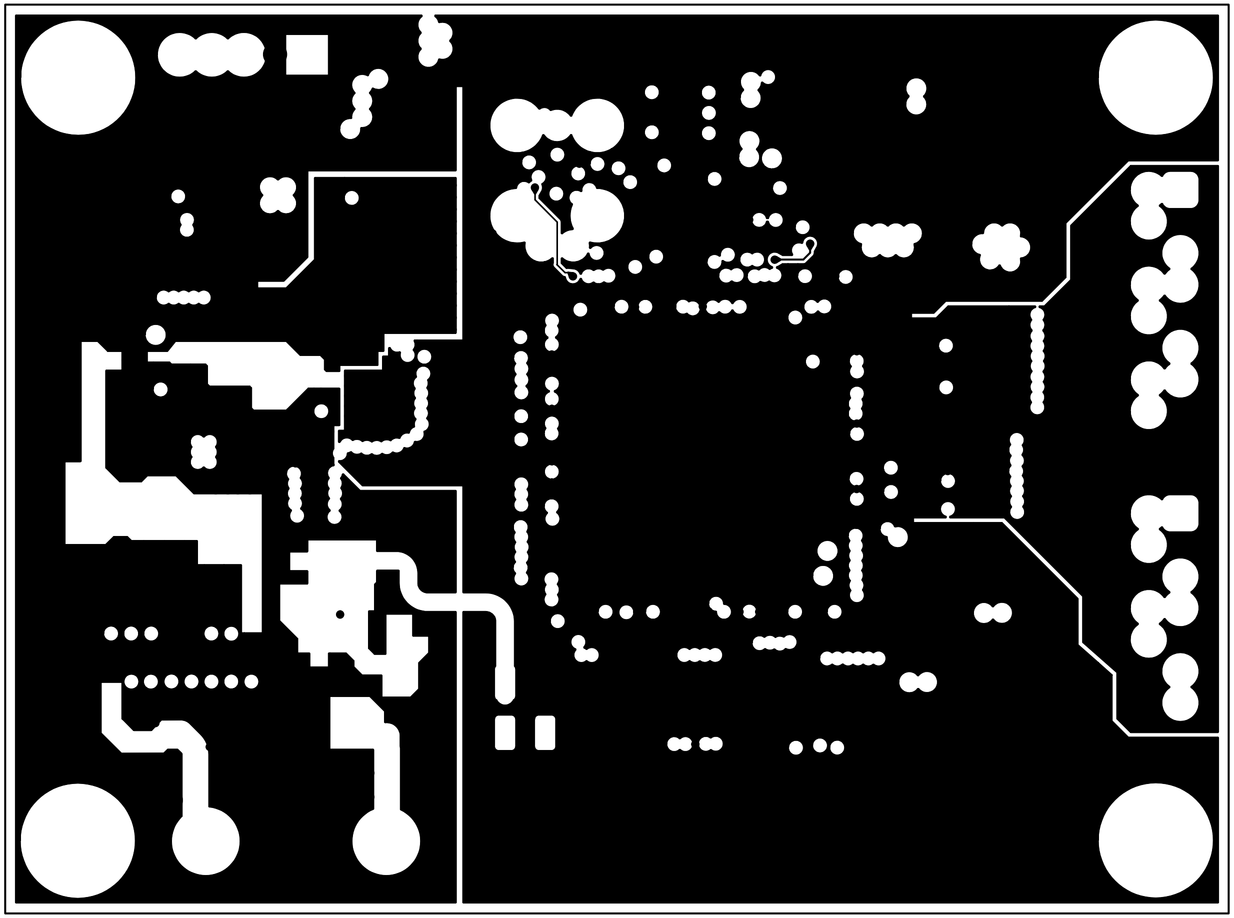
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN MILLIMETERS
TOLERANCES ON ANGLE ∠ .XX~
0 PLACE ∠ X 1 PLACE ∠ .X
INTERPRET DIM AND TOL
PER ASME Y14.5M - 1994

Ermak			
Layer 1(Top signal) Ermak frontend			
SIZE A2	CAGE CODE	DWG NO.	REV 1.0
SCALE 5:1		SHEET 2 OF 13	

DWG No
SH 2
REV 1.0



REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED

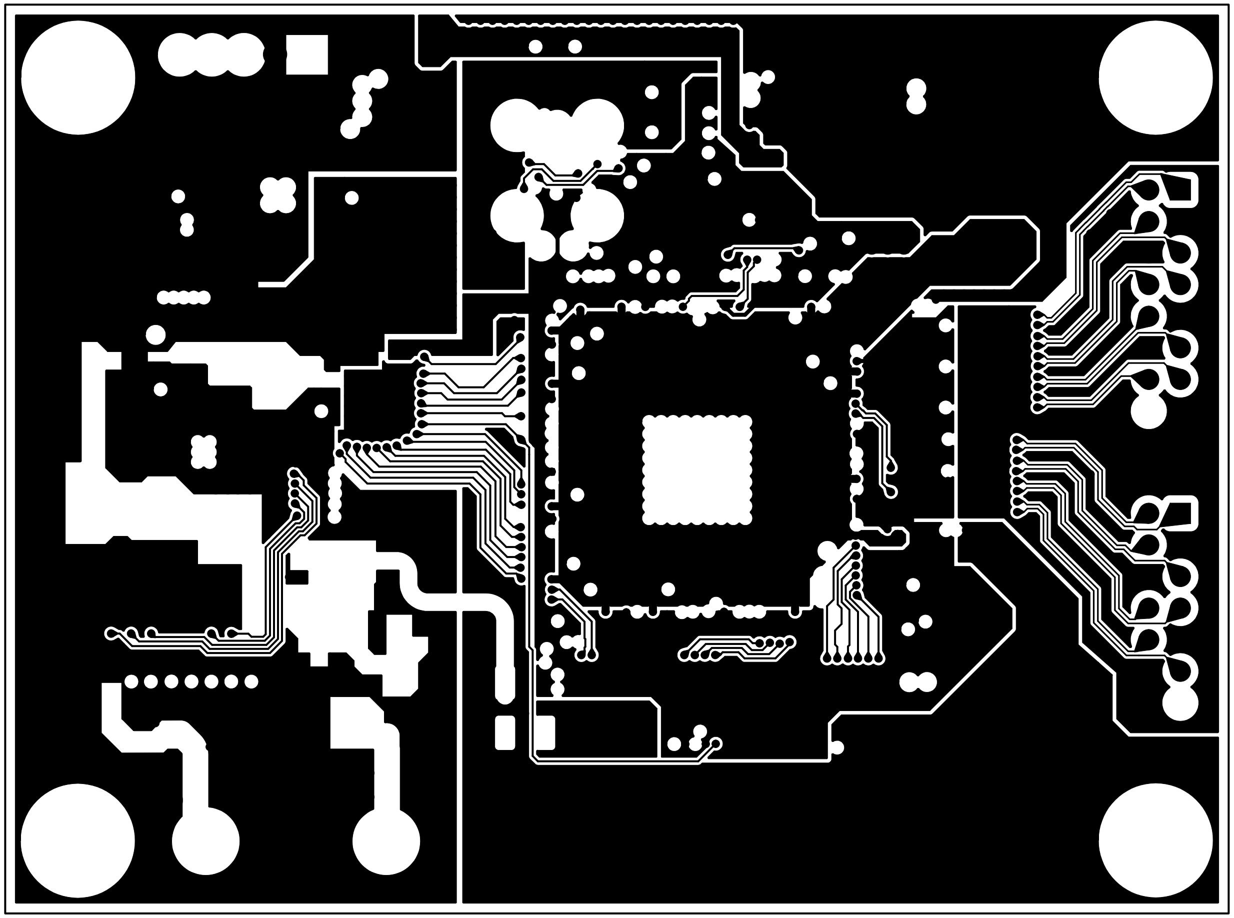
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN MILLIMETERS
TOLERANCES ON ANGLE ∠ .XX~
0 PLACE ∠ X 1 PLACE ∠ .X
INTERPRET DIM AND TOL
PER ASME Y14.5M - 1994

Ermak

Layer 2 (GND Plane)
Ermak frontend

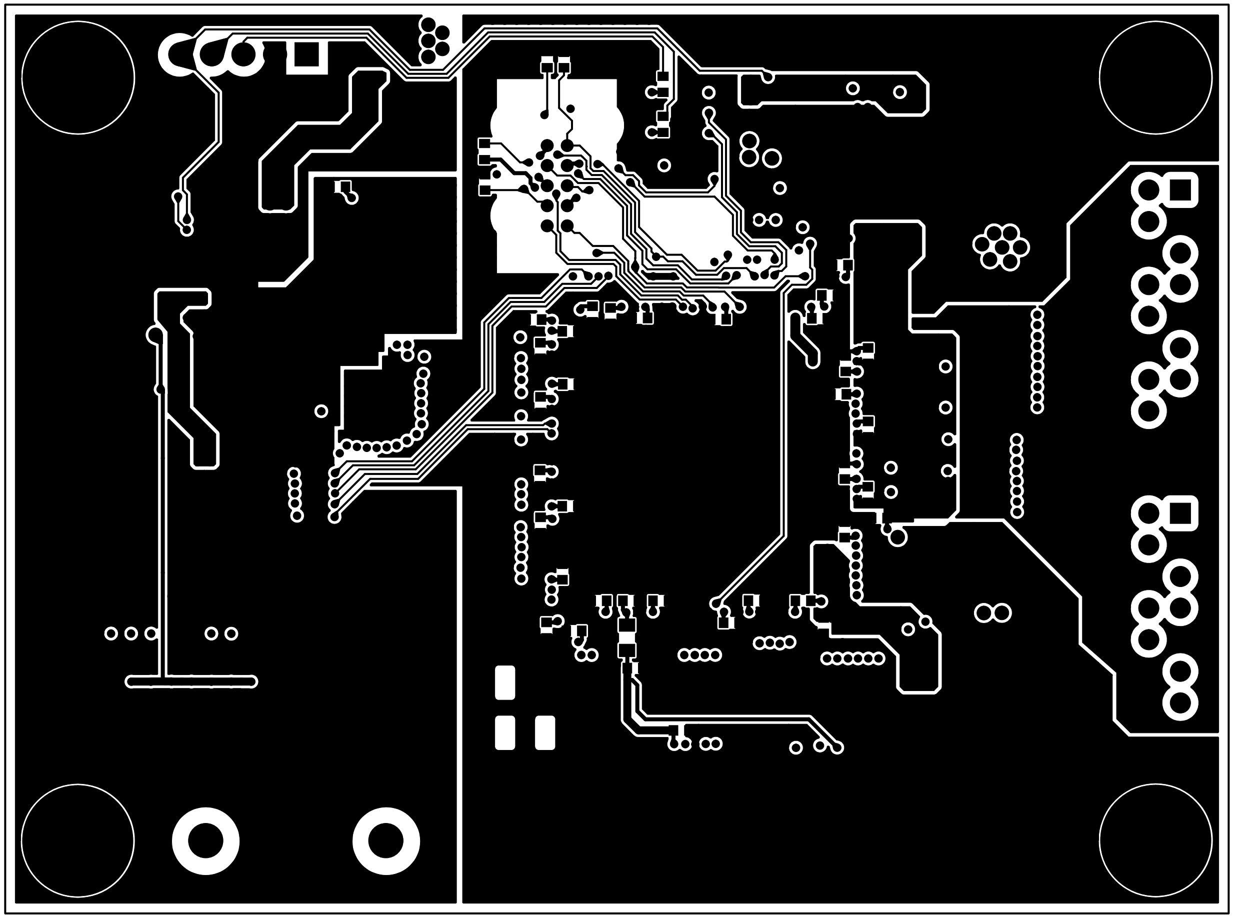
SIZE	CAGE CODE	DWG NO.	REV
A2			1.0
SCALE 5:1		SHEET 3 OF 13	

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN MILLIMETERS
TOLERANCES ON ANGLE ∠ .XX~
0 PLACE ∠ X 1 PLACE ∠ .X
INTERPRET DIM AND TOL
PER ASME Y14.5M - 1994

Ermak			
Layer 3 (PWR Plane) Ermak frontend			
SIZE A2	CAGE CODE	DWG NO.	REV 1.0
SCALE 5:1		SHEET 4 OF 13	



REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN MILLIMETERS
TOLERANCES ON ANGLE ∠ .XX~
0 PLACE ∠ X 1 PLACE ∠ .X
INTERPRET DIM AND TOL
PER ASME Y14.5M - 1994

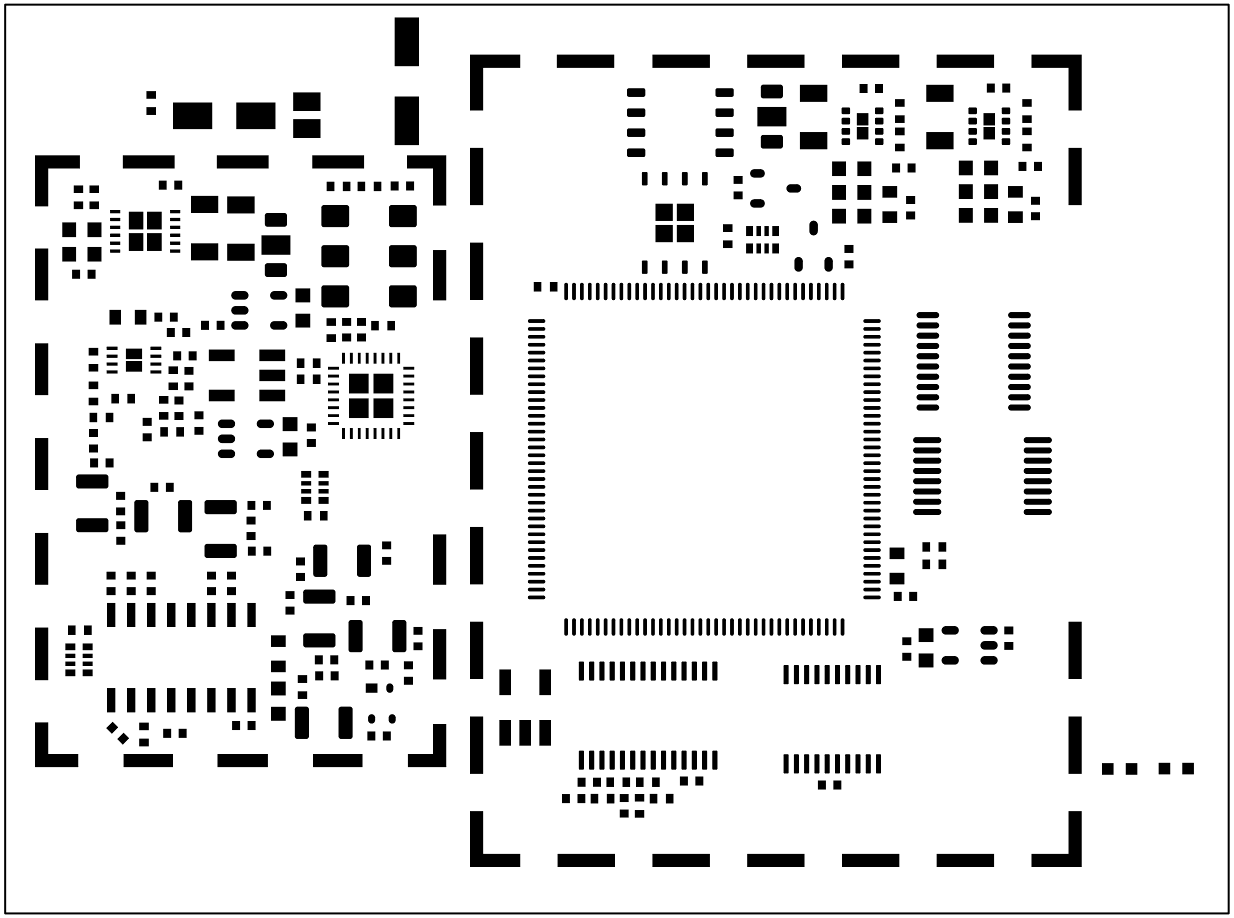
Ermak

Layer 4 (Botom signal)
Ermak frontend

SIZE	CAGE CODE	DWG NO.	REV
A2			1.0
SCALE 5:1		SHEET 5 OF 13	

DWG No
SH 5
REV 1.0

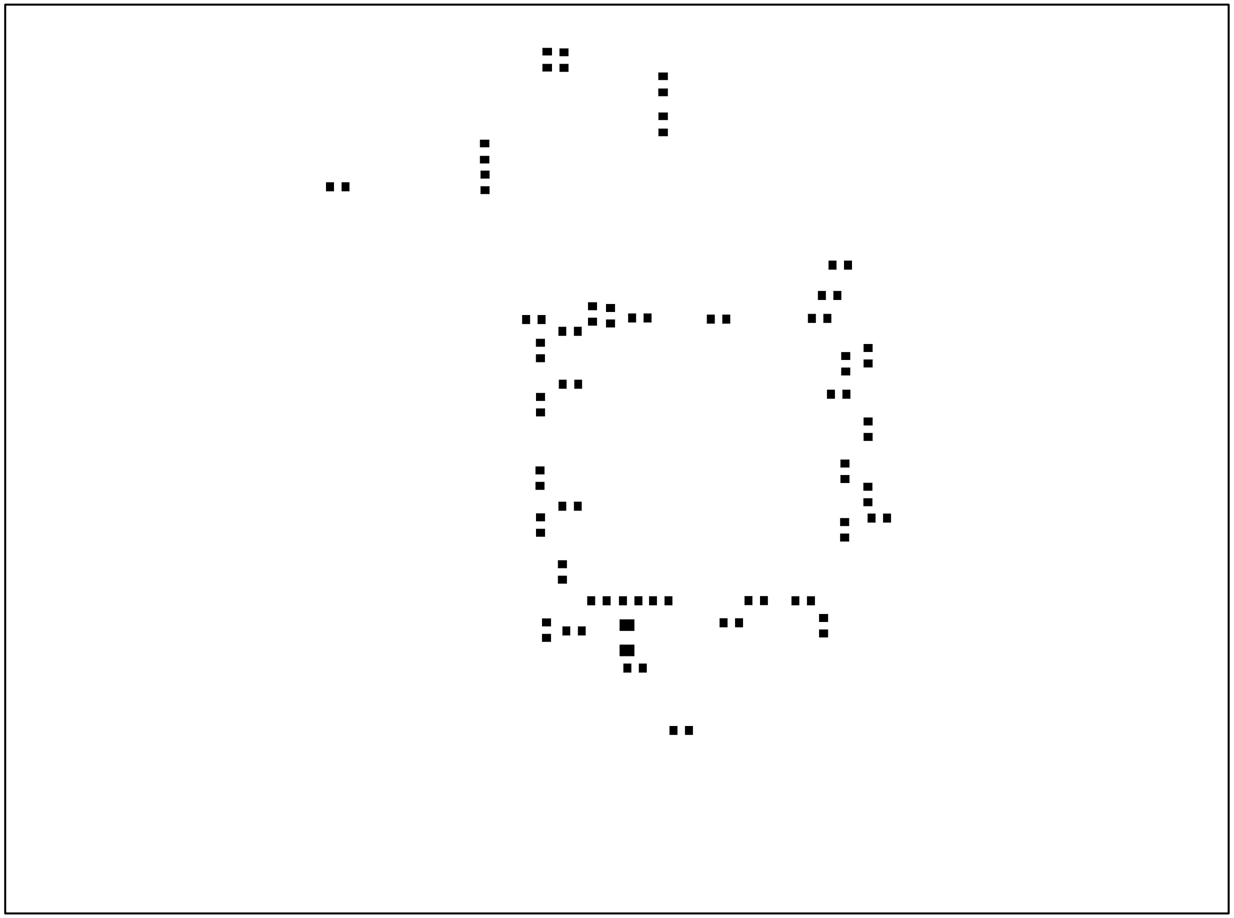
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN MILLIMETERS
TOLERANCES ON ANGLE ∠ .XX-
0 PLACE ∠ X 1 PLACE ∠ .X
INTERPRET DIM AND TOL
PER ASME Y14.5M - 1994

Ermak			
Top solder mask pattern Ermak frontend			
SIZE A2	CAGE CODE	DWG NO.	REV 1.0
SCALE 5:1		SHEET 6 OF 13	

SH 6 REV 1.0



ZONE	REV	DESCRIPTION	DATE	APPROVED

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN MILLIMETERS
TOLERANCES ON ANGLE ∠ .XX~
0 PLACE ∠ X 1 PLACE ∠ .X
INTERPRET DIM AND TOL
PER ASME Y14.5M - 1994

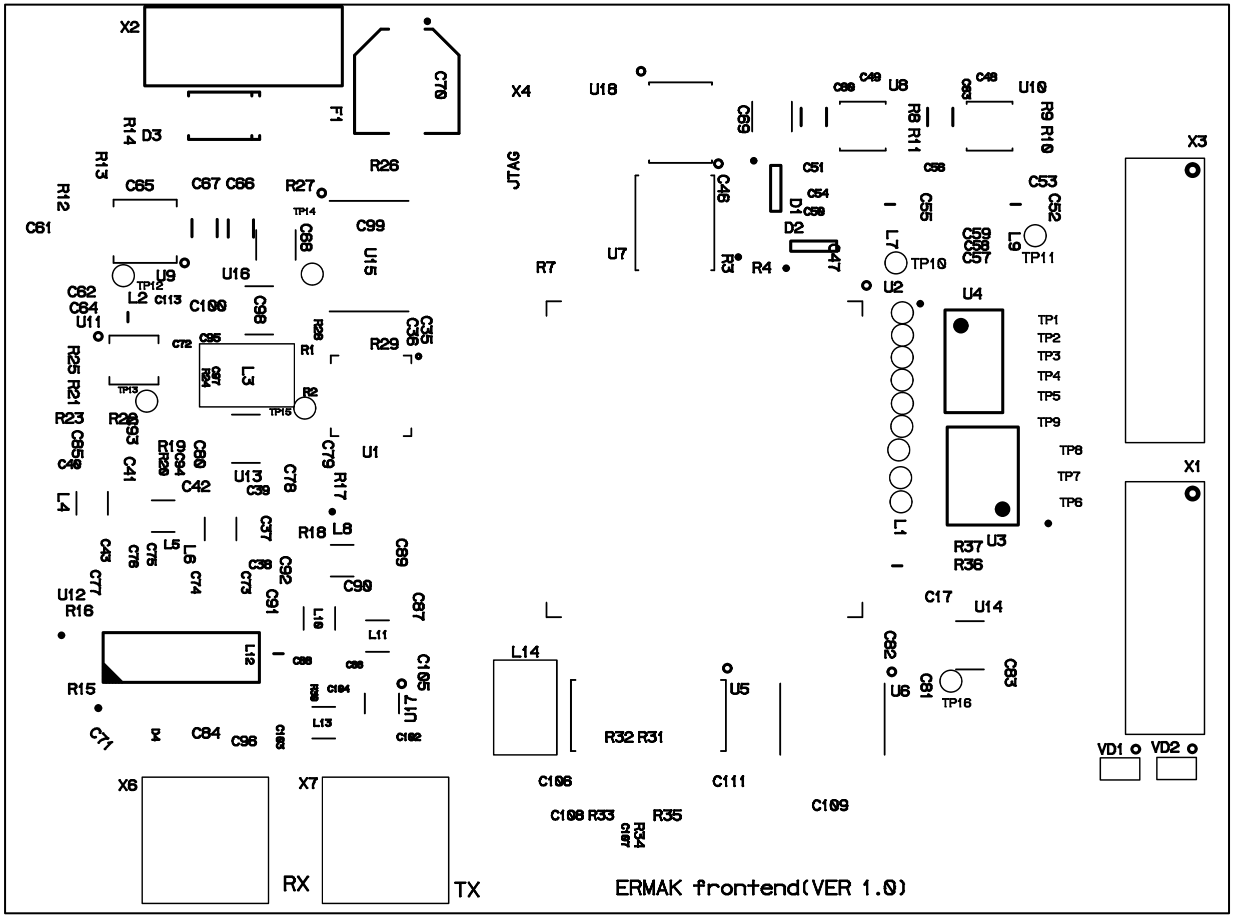
Ermak

Bottom solder mask pattern
Ermak frontend

SIZE	CAGE CODE	DWG NO.	REV
A2			1.0
SCALE 5:1		SHEET 7 OF 13	

ZONE	REV	DESCRIPTION	DATE	APPROVED

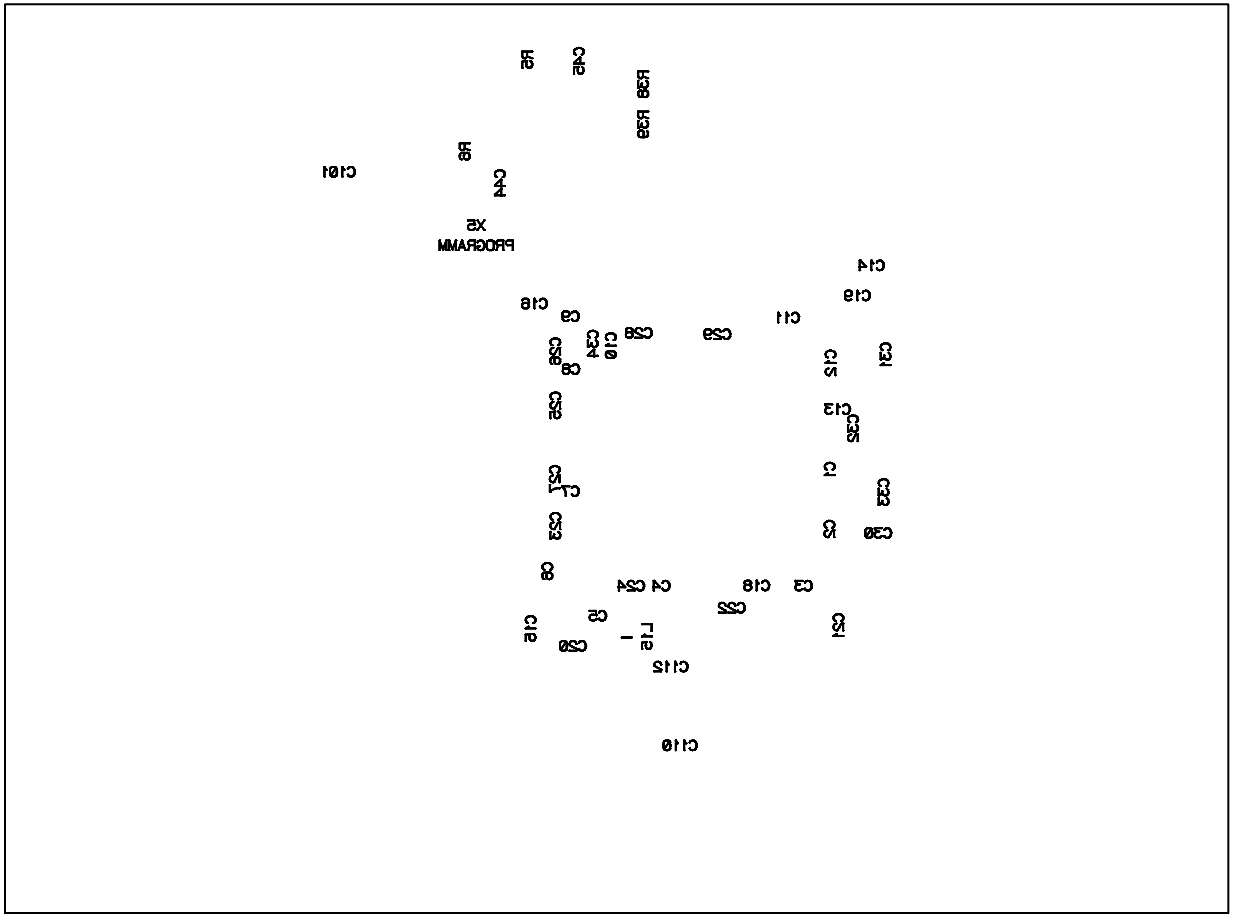
REVISION HISTORY



UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN MILLIMETERS
TOLERANCES ON ANGLE ∠ .XX-
0 PLACE ∠ X 1 PLACE ∠ .X
INTERPRET DIM AND TOL
PER ASME Y14.5M - 1994

Ermak			
Top silkscreen pattern Ermak frontend			
SIZE A2	CAGE CODE	DWG NO.	REV 1.0
SCALE 5:1		SHEET 8 OF 13	

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN MILLIMETERS
TOLERANCES ON ANGLE ∠ .XX∼
0 PLACE ∠ X 1 PLACE ∠ .X
INTERPRET DIM AND TOL
PER ASME Y14.5M - 1994

Ermak

Bottom silkscreen pattern
Ermak frontend

SIZE	CAGE CODE	DWG NO.	REV
A2			1.0
SCALE 5:1		SHEET 9 OF 13	

DWG No

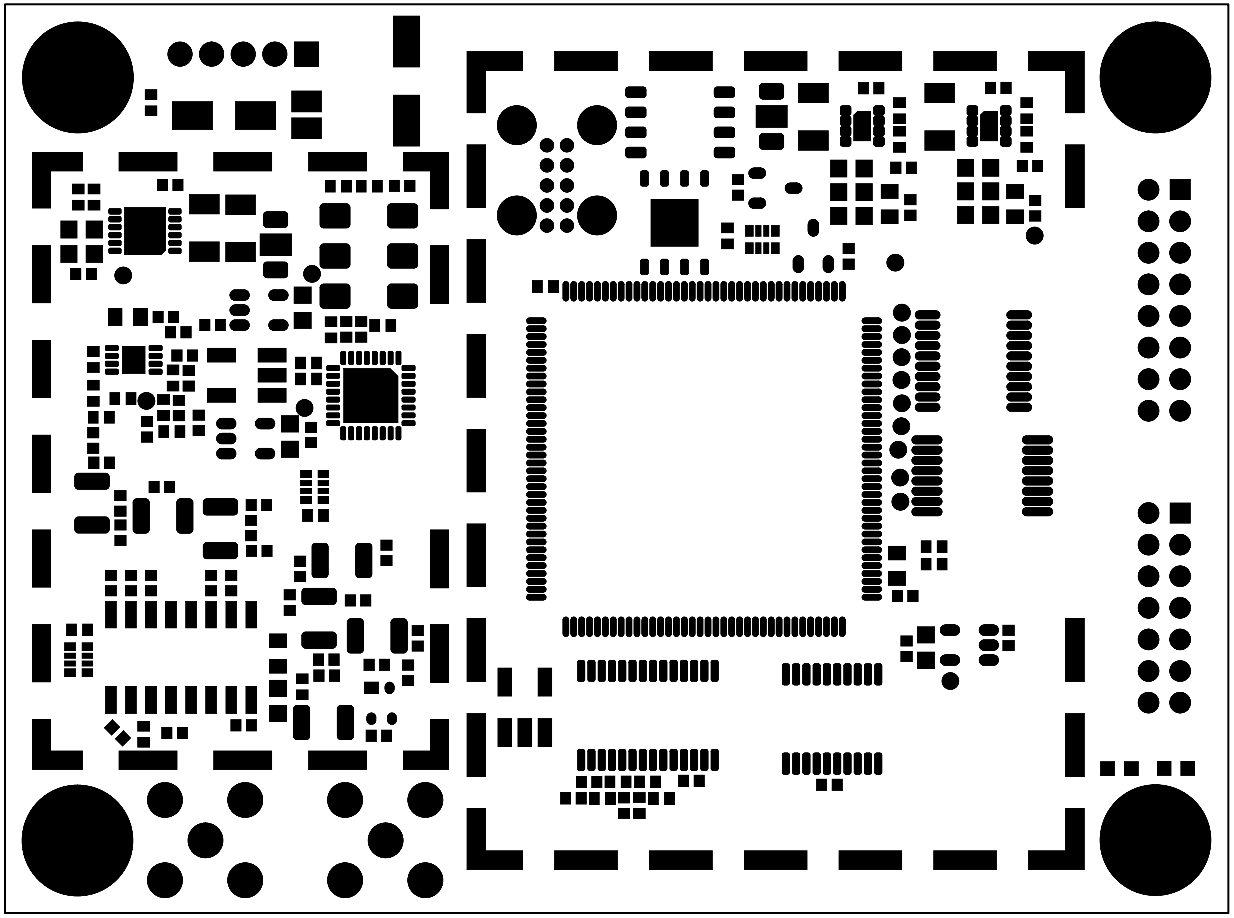
SH 9

REV 1.0

8	7	6	5	4	3	2	1

REVISION HISTORY

ZONE	REV	DESCRIPTION	DATE	APPROVED



UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN MILLIMETERS
TOLERANCES ON ANGLE ∠ .XX~
0 PLACE ∠ X 1 PLACE ∠ .X
INTERPRET DIM AND TOL
PER ASME Y14.5M - 1994

Ermak

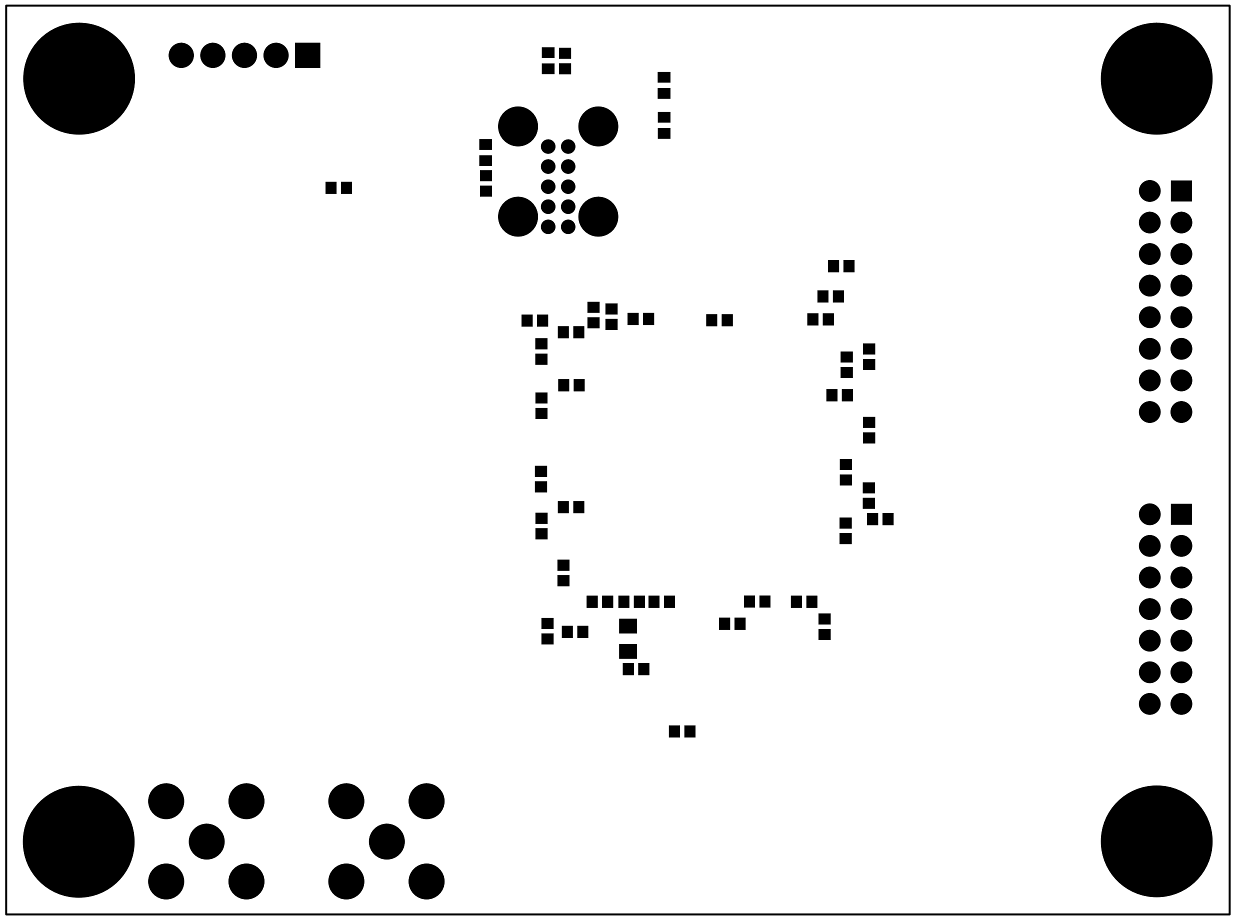
Top mask pattern
Ermak frontend

SIZE	CAGE CODE	DWG NO.	REV
A2			1.0
SCALE 5:1		SHEET 10 OF 13	

DWG No
SH 10
REV 1.0

REVISION HISTORY

ZONE	REV	DESCRIPTION	DATE	APPROVED

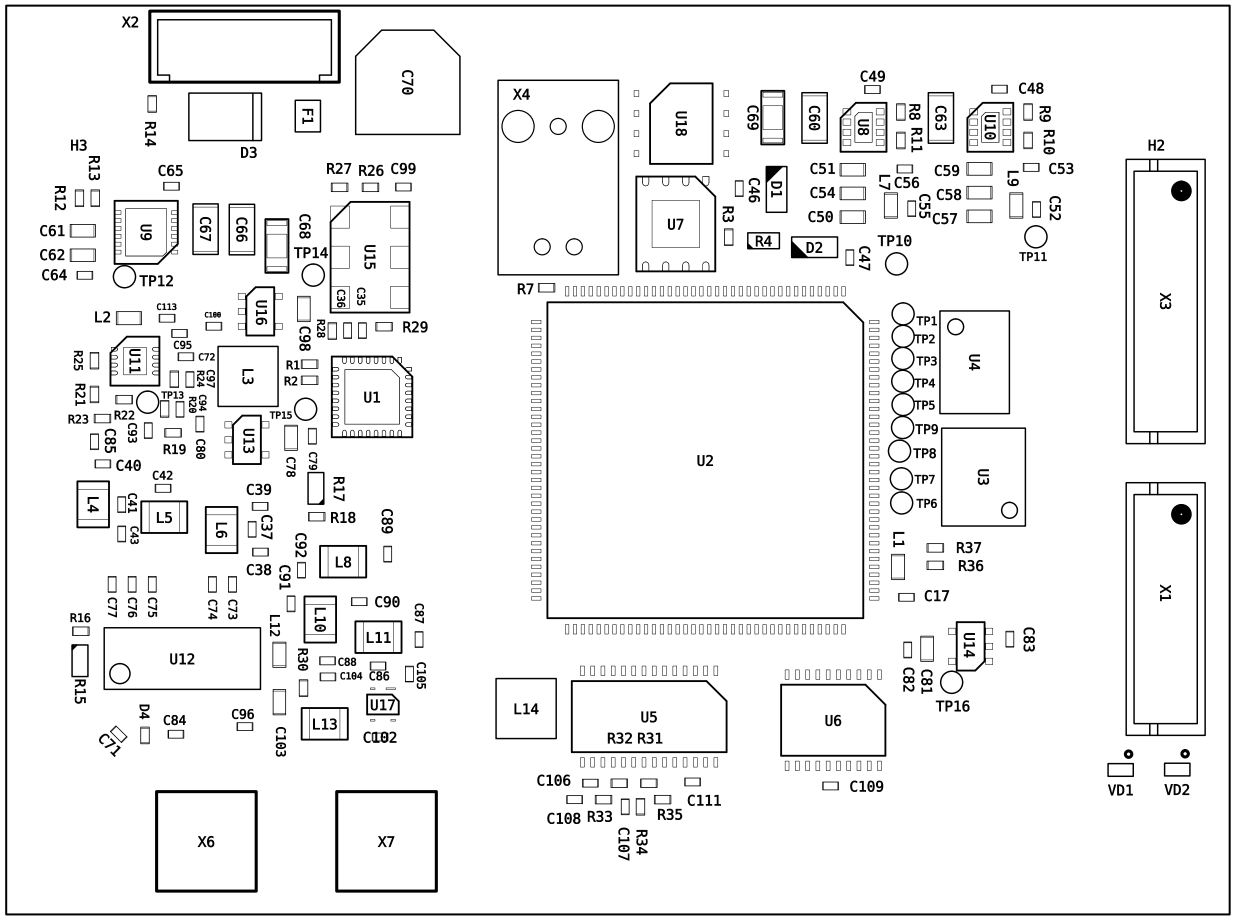


UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN MILLIMETERS
TOLERANCES ON ANGLE ∠ .XX~
0 PLACE ∠ X 1 PLACE ∠ .X
INTERPRET DIM AND TOL
PER ASME Y14.5M - 1994

Ermak			
Bottom mask pattern Ermak frontend			
SIZE A2	CAGE CODE	DWG NO.	REV 1.0
SCALE 5:1		SHEET 11 OF 13	

DWG No SH 11 REV 1.0

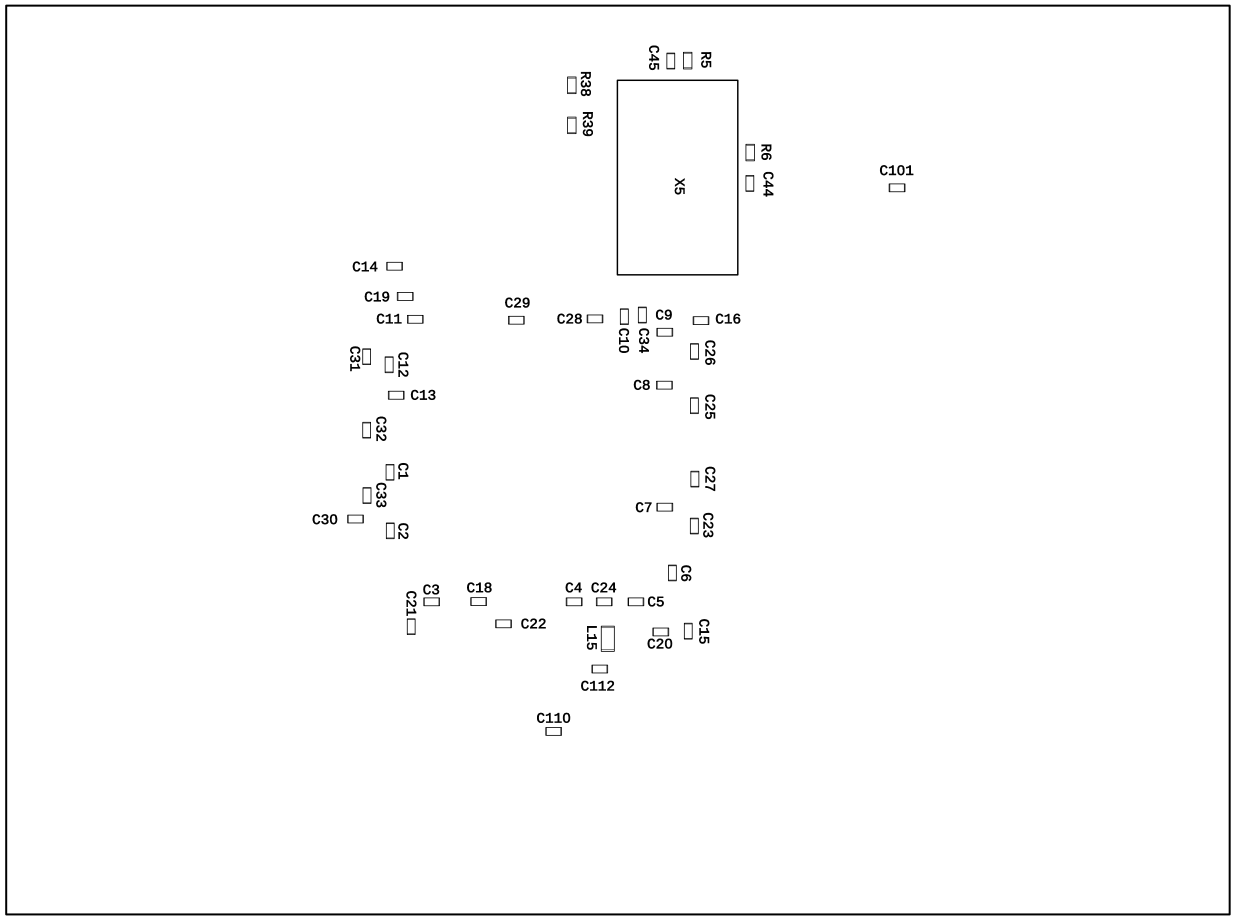
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN MILLIMETERS
TOLERANCES ON ANGLE ∠ .XX~
0 PLACE ∠ X 1 PLACE ∠ .X
INTERPRET DIM AND TOL
PER ASME Y14.5M - 1994

Ermak			
Assembly Top drawing Ermak frontend			
SIZE A2	CAGE CODE	DWG NO.	REV 1.0
SCALE 5:1		SHEET 12 OF 13	

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



UNLESS OTHERWISE SPECIFIED
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TOLERANCES ON ANGLE ∠ .XX~
0 PLACE ∠ X 1 PLACE ∠ .X
INTERPRET DIM AND TOL
PER ASME Y14.5M - 1994

Ermak			
Assembly Bottom drawing Ermak frontend			
SIZE A2	CAGE CODE	DWG NO.	REV 1.0
SCALE 5:1		SHEET 13 OF 13	