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| REVISION HISTORY |     |             |      |          |
|------------------|-----|-------------|------|----------|
| ZONE             | REV | DESCRIPTION | DATE | APPROVED |
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## SHEET LEGEND:

SHEET 1: Fabrication drawing  
 SHEET 2: Layer 1(Top signal)  
 SHEET 3: Layer 2(Bottom signal)  
 SHEET 4: Top solder mask pattern  
 SHEET 5: Bottom solder mask pattern  
 SHEET 6: Top silkscreen pattern  
 SHEET 7: Bottom silkscreen pattern  
 SHEET 8: Top mask pattern  
 SHEET 9: Bottom mask pattern  
 SHEET 10: Assembly Top drawing  
 SHEET 11: Assembly Bottom drawing  
 SHEET 12: Mechanical 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 35um (1 oz. + finished copper). Copper weight is to be considered 'finished'. The total thickness of PCB shall be 1.6 mm.

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) 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:

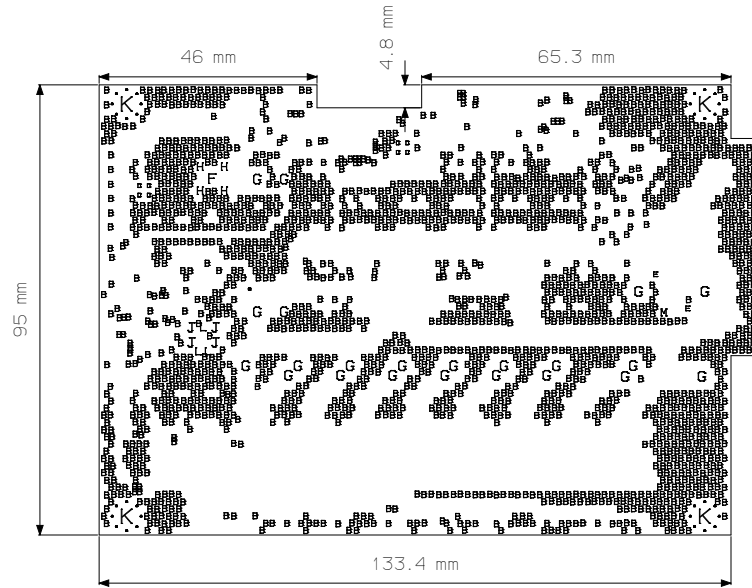
5.1 Board part number and revision letter is rendered in silkscreen on the top side of the board. Revision letter should be identical to this drawing.

5.2 UL logo, manufactures identification and date code letter shall be rendered in silkscreen 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 |          |              |        |       |                            |          |
|---------------|----------|--------------|--------|-------|----------------------------|----------|
| Type(s)       | Diameter | Tolerance    | Plated | Type  | Reference                  | Quantity |
| B             | 0.2120   |              | Yes    | Drill | Rev 1.2                    | 2000     |
| C             | 0.2080   |              | Yes    | Drill | Rev 1.2                    | 1        |
| D             | 0.2315   |              | Yes    | Drill | Rev 1.2                    | 8        |
| E             | 0.2054   |              | Yes    | Drill | Rev 1.2                    | 2        |
| F             | 0.2472   |              | Yes    | Drill | Rev 1.2                    | 1        |
| G             | 0.2612   | $\pm 0.0021$ | Yes    | Drill | Thru 1.30 Hole size plated | 144      |
| H             | 0.2050   |              | Yes    | Drill | Rev 1.42                   | 22       |
| J             | 0.2045   |              | Yes    | Drill | Rev 1.36.HS                | 4        |
| K             | 0.2220   |              | Yes    | Drill | Rev 2.4                    | 4        |
| L             | 0.2054   |              | No     | Drill | Rev 1 Non-Plated           | 3        |
| M             | 0.2054   |              | No     | Drill | Rev 1 Non-Plated           | 1        |

ERMAK

Fabrication drawing  
 P14-E006-22

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

| SIZE | CAGE CODE | DWG NO. | REV |
|------|-----------|---------|-----|
| A2   |           |         | 2.2 |

SCALE 3 SHEET 1 OF 11

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| REVISION HISTORY |     |             |      |          |
|------------------|-----|-------------|------|----------|
| ZONE             | REV | DESCRIPTION | DATE | APPROVED |
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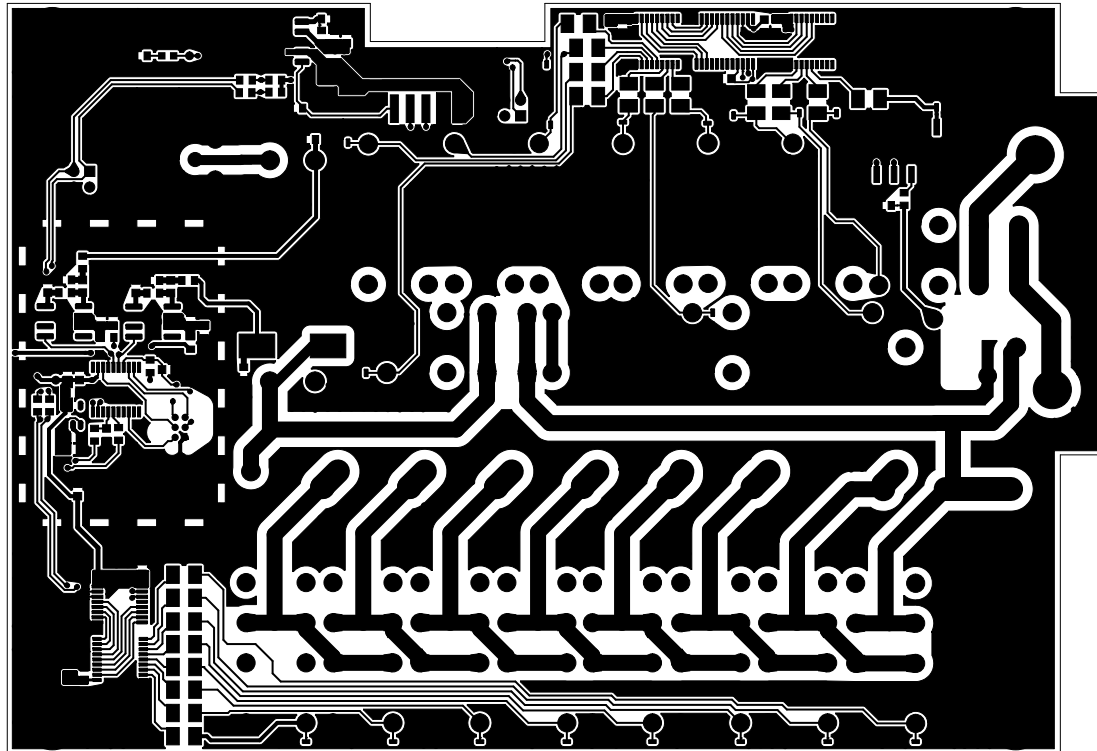
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UNLESS OTHERWISE SPECIFIED  
 DIMENSIONS ARE IN MILLIMETERS  
 TOLERANCES ON ANGLE ± .XX°  
 Ø PLACE ± .1 PLACE ± .X  
 INTERPRET DIM AND TOL  
 PER ASME Y14.5M - 1994

|                                    |               |         |            |
|------------------------------------|---------------|---------|------------|
| ERMAK                              |               |         |            |
| Layer 1(Top signal)<br>P14-E006-22 |               |         |            |
| SIZE<br>A2                         | CAGE CODE     | DWG NO. | REV<br>2.2 |
| SCALE<br>3                         | SHEET 2 OF 11 |         | 1          |

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| REVISION HISTORY |     |             |      |          |
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| ZONE             | REV | DESCRIPTION | DATE | APPROVED |
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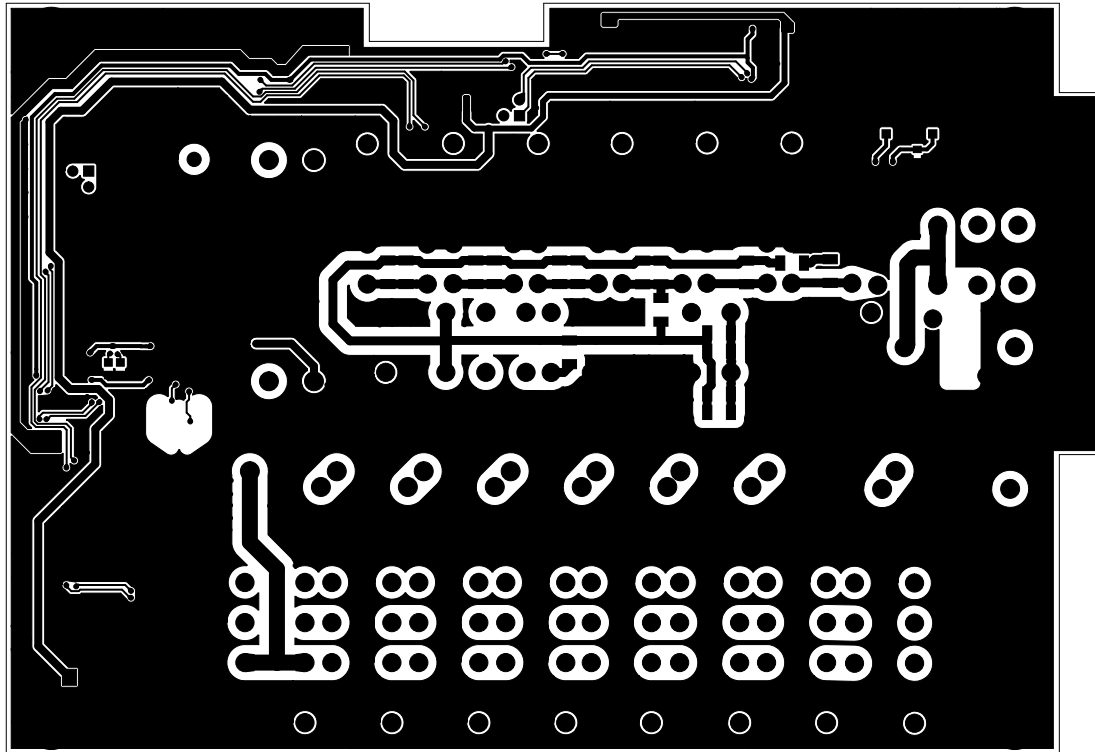
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UNLESS OTHERWISE SPECIFIED  
 DIMENSIONS ARE IN MILLIMETERS  
 TOLERANCES ON ANGLE ± .XX°  
 Ø PLACE ± .1 PLACE ± .X  
 INTERPRET DIM AND TOL  
 PER ASME Y14.5M - 1994

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| ERMAK                                  |               |         |            |
| Layer 2 (Bottom signal)<br>P14-E006-22 |               |         |            |
| SIZE<br>A2                             | CAGE CODE     | DWG NO. | REV<br>2.2 |
| SCALE<br>3                             | SHEET 3 OF 11 |         | 1          |

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| REVISION HISTORY |     |             |      |          |
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| ZONE             | REV | DESCRIPTION | DATE | APPROVED |
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UNLESS OTHERWISE SPECIFIED  
 DIMENSIONS ARE IN MILLIMETERS  
 TOLERANCES ON ANGLE Z .XX-  
 0 PLACE Z X .1 PLACE Z X  
 INTERPRET DIM AND TOL  
 PER ASME Y14.5M - 1994

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|--|---------------|---------|------------|
| ERMAK                                  |               |         |            |
| Top solder mask pattern<br>P14-E006-22 |               |         |            |
| SIZE<br>A2                             | CAGE CODE     | DWG NO. | REV<br>2.2 |
| SCALE<br>3                             | SHEET 4 OF 11 |         |            |

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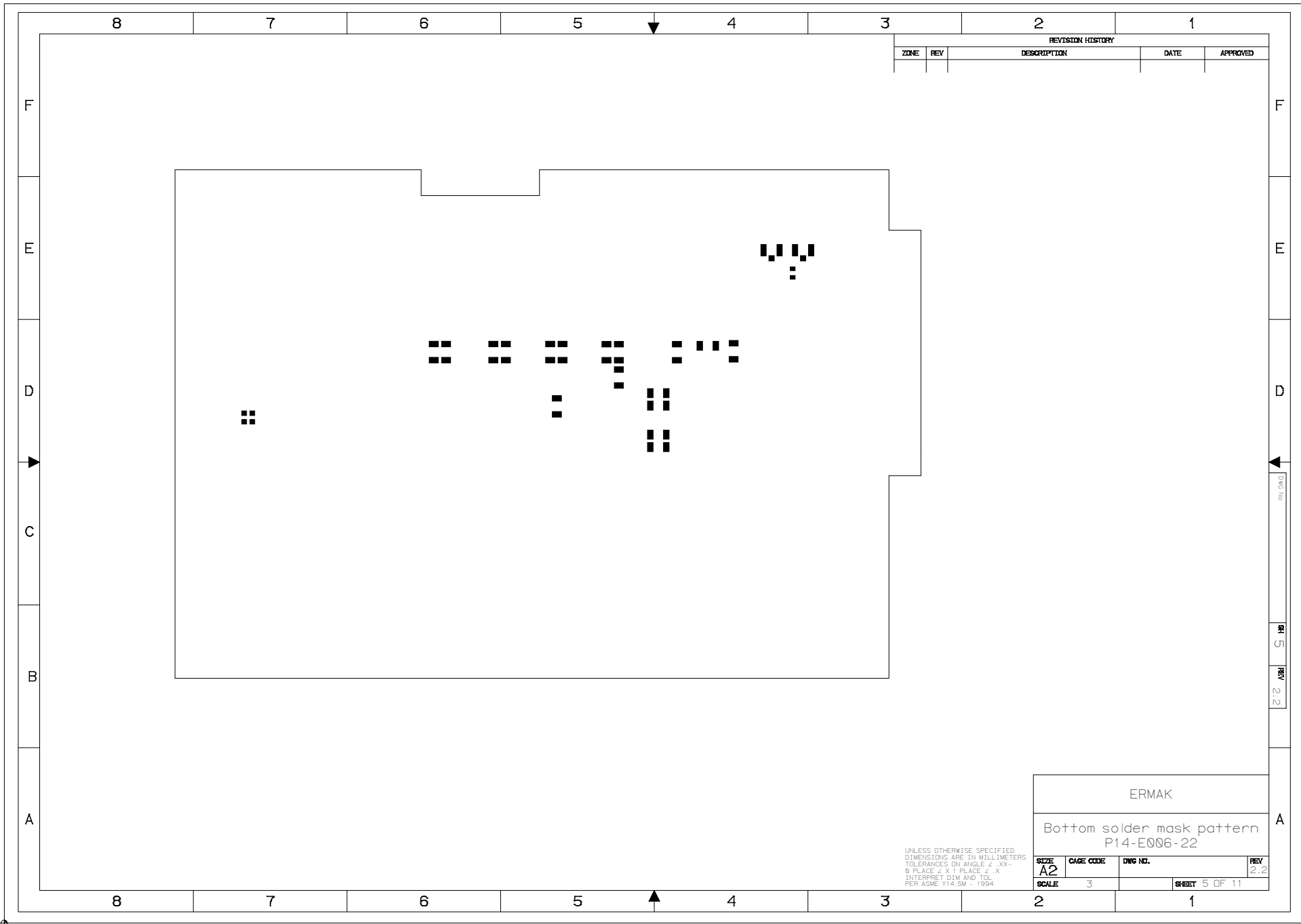
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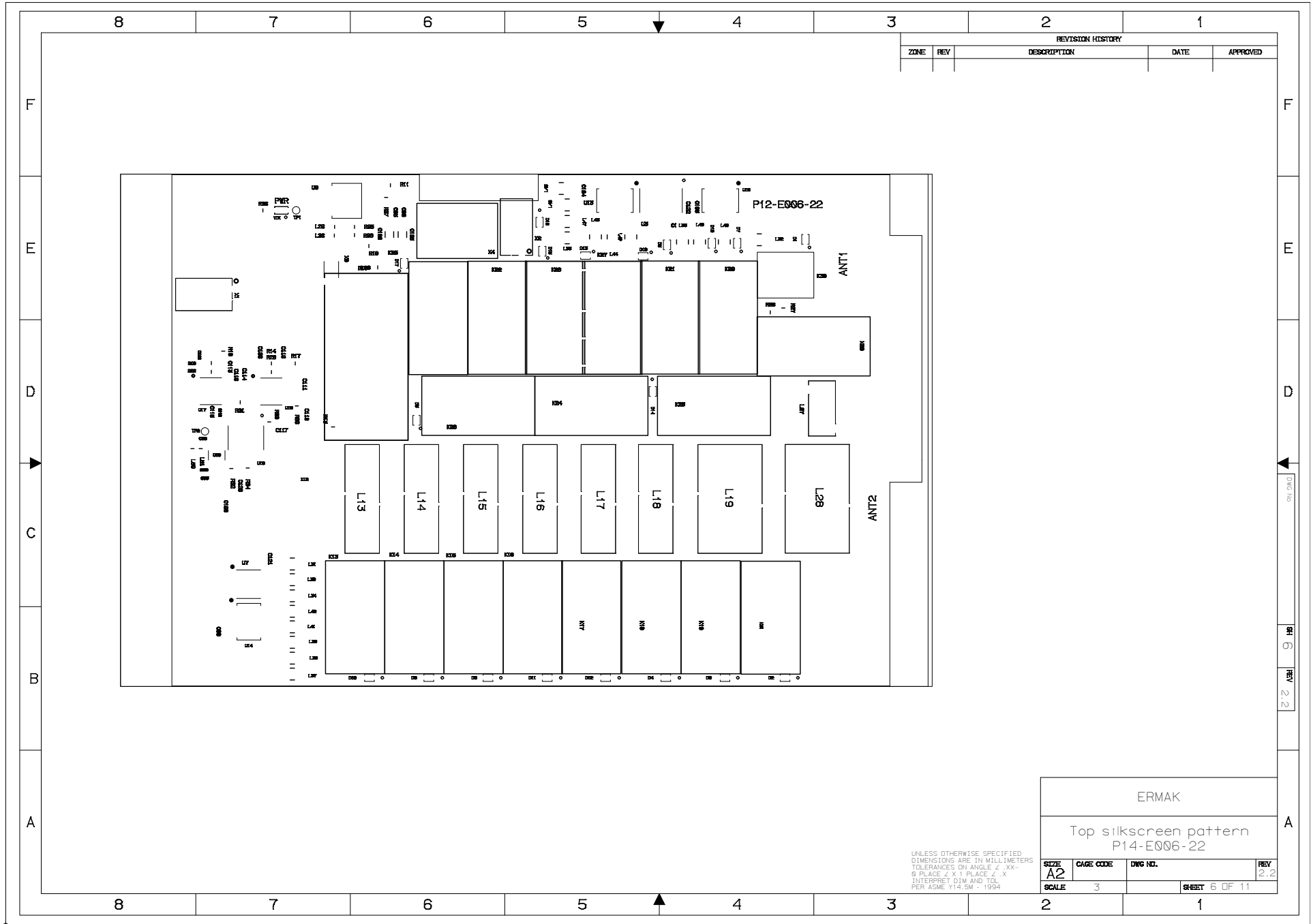
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| REVISION HISTORY |     |             |      |          |
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| ZONE             | REV | DESCRIPTION | DATE | APPROVED |
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| ERMAK                                     |               |         |            |
| Bottom solder mask pattern<br>P14-E006-22 |               |         |            |
| SIZE<br>A2                                | CAGE CODE     | DWG NO. | REV<br>2.2 |
| SCALE<br>3                                | SHEET 5 OF 11 |         |            |

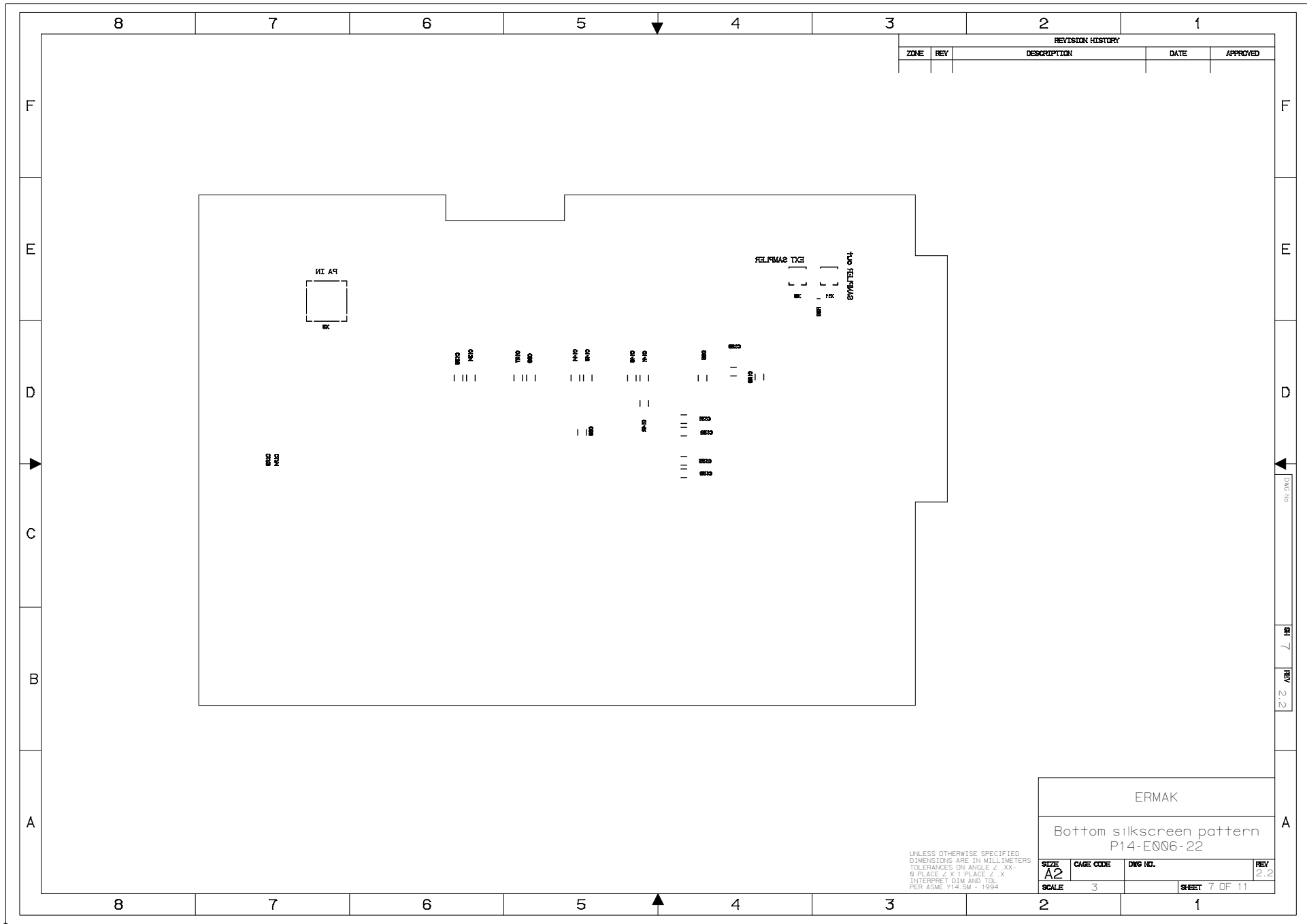
UNLESS OTHERWISE SPECIFIED  
 DIMENSIONS ARE IN MILLIMETERS  
 TOLERANCES ON ANGLE ± .XX°  
 Ø PLACE ± .1 PLACE ± .X  
 INTERPRET DIM AND TOL  
 PER ASME Y14.5M - 1994



| REVISION HISTORY |     |             |      |          |
|------------------|-----|-------------|------|----------|
| ZONE             | REV | DESCRIPTION | DATE | APPROVED |
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|---------------------------------------|---------------|---------|------------|
| ERMAK                                 |               |         |            |
| Top silkscreen pattern<br>P14-E006-22 |               |         |            |
| SIZE<br>A2                            | CAGE CODE     | DWG NO. | REV<br>2.2 |
| SCALE<br>3                            | SHEET 6 OF 11 |         | 1          |

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



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

| REVISION HISTORY |     |             |      |          |
|------------------|-----|-------------|------|----------|
| ZONE             | REV | DESCRIPTION | DATE | APPROVED |
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|--|---------------|---------|------------|
| ERMAK                                    |               |         |            |
| Bottom silkscreen pattern<br>P14-E006-22 |               |         |            |
| SIZE<br>A2                               | CAGE CODE     | DWG NO. | REV<br>2.2 |
| SCALE<br>3                               | SHEET 7 OF 11 |         |            |

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| REVISION HISTORY |     |             |      |          |
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| ZONE             | REV | DESCRIPTION | DATE | APPROVED |
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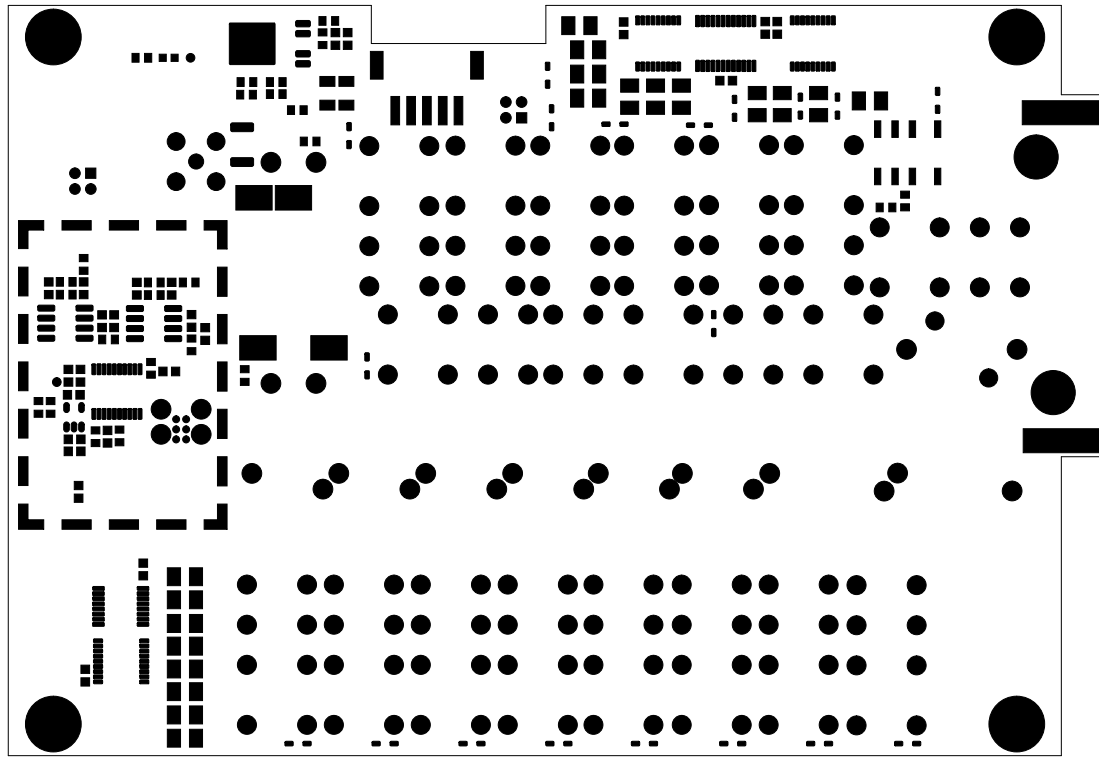
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UNLESS OTHERWISE SPECIFIED  
 DIMENSIONS ARE IN MILLIMETERS  
 TOLERANCES ON ANGLE ± .XX°  
 Ø PLACE Z X .1 PLACE Z X  
 INTERPRET DIM AND TOL  
 PER ASME Y14.5M - 1994

|                                 |               |         |            |
|---------------------------------|---------------|---------|------------|
| ERMAK                           |               |         |            |
| Top mask pattern<br>P14-E006-22 |               |         |            |
| SIZE<br>A2                      | CAGE CODE     | DWG NO. | REV<br>2.2 |
| SCALE<br>3                      | SHEET 8 OF 11 |         | 1          |

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| REVISION HISTORY |     |             |      |          |
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| ZONE             | REV | DESCRIPTION | DATE | APPROVED |
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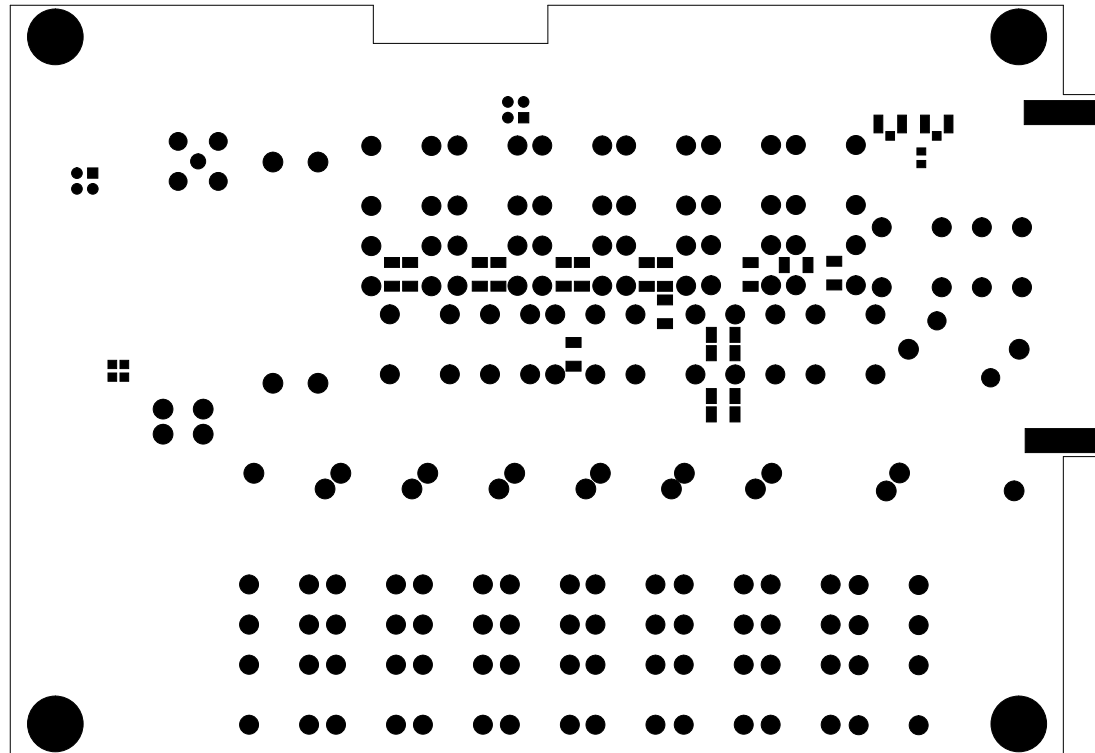
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UNLESS OTHERWISE SPECIFIED  
 DIMENSIONS ARE IN MILLIMETERS  
 TOLERANCES ON ANGLE ± .XX°  
 Ø PLACE Z X .11 PLACE Z X  
 INTERPRET DIM AND TOL  
 PER ASME Y14.5M - 1994

|                                    |               |         |            |
|------------------------------------|---------------|---------|------------|
| ERMAK                              |               |         |            |
| Bottom mask pattern<br>P14-E006-22 |               |         |            |
| SIZE<br>A2                         | CAGE CODE     | DWG NO. | REV<br>2.2 |
| SCALE<br>3                         | SHEET 9 OF 11 |         |            |

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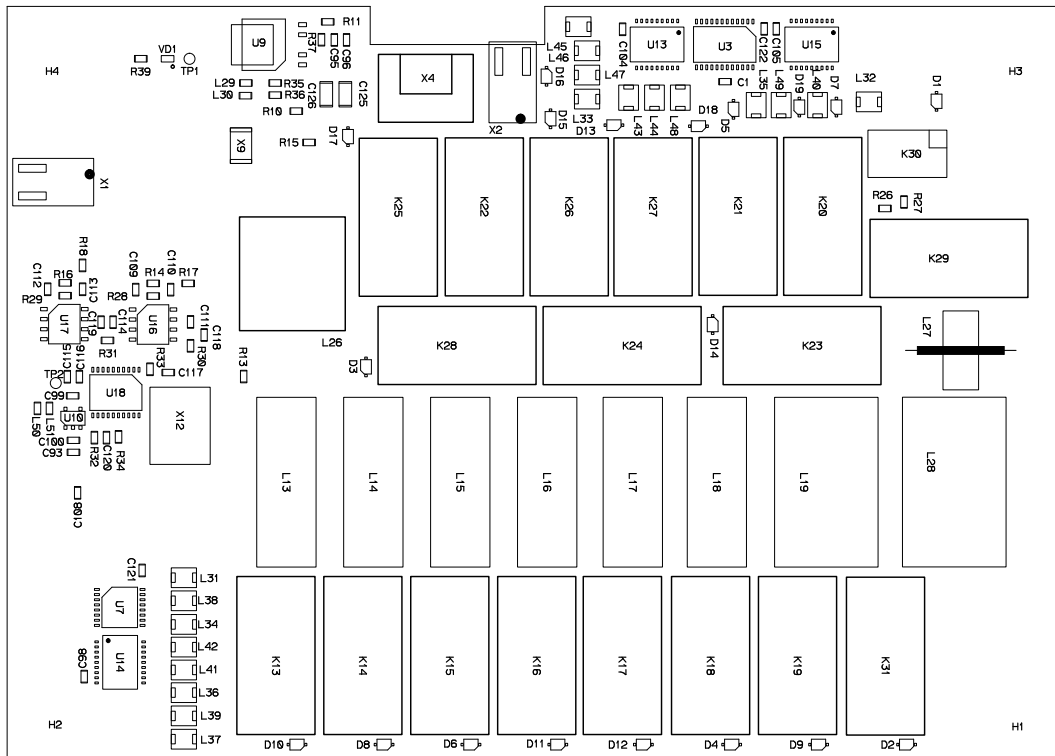
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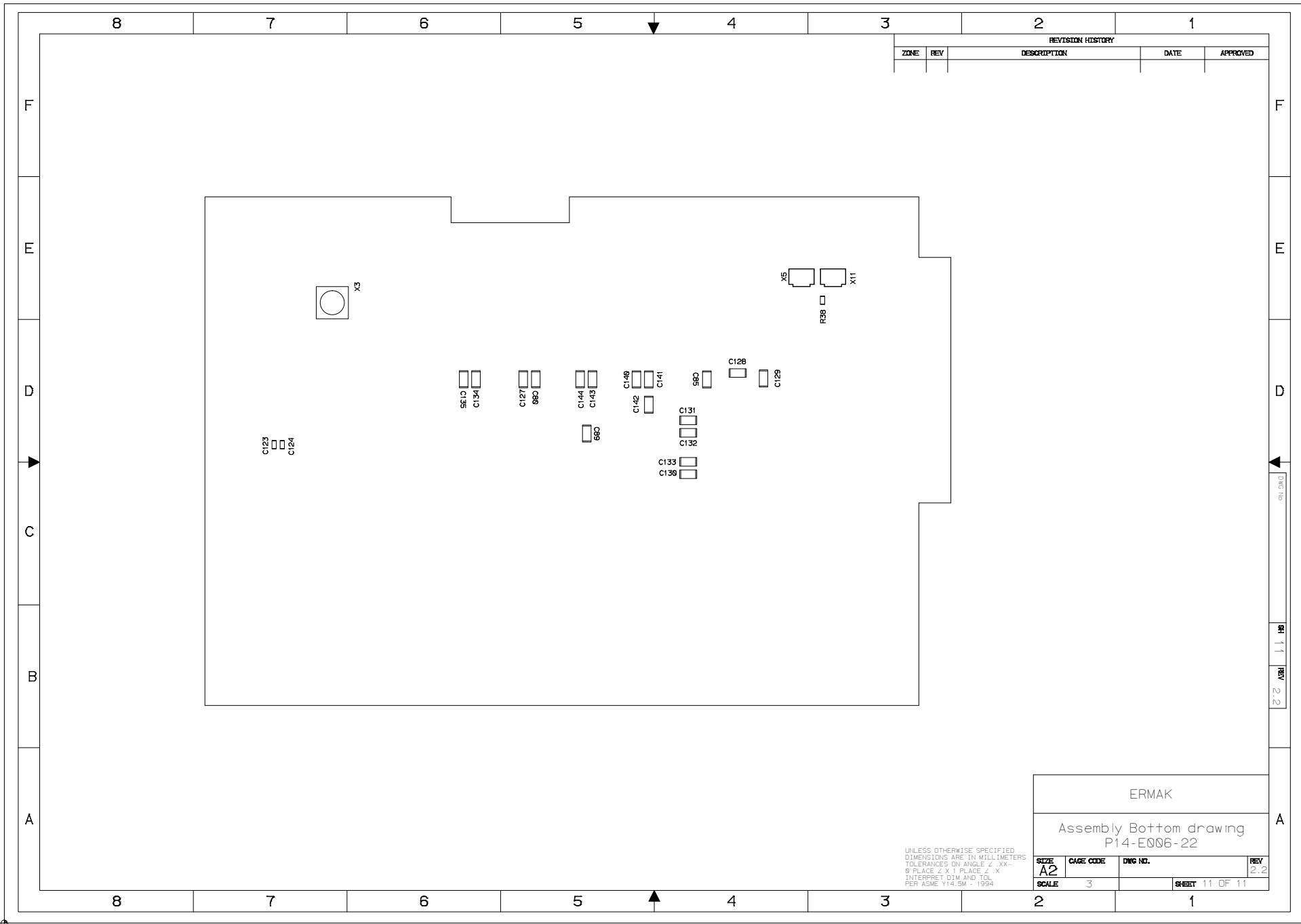
| REVISION HISTORY |     |             |      |          |
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| ZONE             | REV | DESCRIPTION | DATE | APPROVED |
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|-------------------------------------|----------------|---------------------------|------------|
| ERMAK                               |                |                           |            |
| Assembly Top drawing<br>P14-E006-22 |                |                           |            |
| SIZE<br>A2                          | CAGE CODE<br>3 | DWG NO.<br>SHEET 10 OF 11 | REV<br>2.2 |

UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN MILLIMETERS  
TOLERANCES ON ANGLE ± .XX°  
Ø PLACE ± .X | PLACE ± .X  
INTERPRET DIM AND TOL  
PER ASME Y14.5M - 1994

DWG NO. REV 10 2.2



| REVISION HISTORY |     |             |      |          |
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| ZONE             | REV | DESCRIPTION | DATE | APPROVED |
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|--|----------------|----------|------------|
| ERMAK                                  |                |          |            |
| Assembly Bottom drawing<br>P14-E006-22 |                |          |            |
| SIZE<br><b>A2</b>                      | CAGE CODE      | DWG. NO. | REV<br>2.2 |
| SCALE<br>3                             | SHEET 11 OF 11 |          |            |

UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN MILLIMETERS  
TOLERANCES ON ANGLE ± .XX°  
Ø PLACE ± .X1 PLACE ± .X  
INTERPRET DIM AND TOL  
PER ASME Y14.5M - 1994

DWG No. 11 REV 2.2