

NOTES:

1. ALL DIMENSIONING AND TOLERANCING CONFORM TO ASME Y14.5M-1994.
2. DATUM PLANE [H] LOCATED AT MOLD PARTING LINE AND COINCIDENT WITH LEAD, WHERE LEAD EXITS PLASTIC BODY AT BOTTOM OF PARTING LINE.
3. DATUMS [A-B] AND [D] TO BE DETERMINED AT CENTERLINE BETWEEN LEADS WHERE LEAD EXITS PLASTIC BODY AT DATUM PLANE [H].
4. TO BE DETERMINED AT SEATING PLANE [C].
5. DIMENSIONS D1 AND E1 DO NOT INCLUDE MOLD PROTRUSION, ALLOWABLE MOLD PROTRUSION IS 0.254 MM ON D1 AND E1.
6. N° IS THE TOTAL NUMBER OF TERMINALS.
7. THESE DIMENSIONS TO BE DETERMINED AT DATUM PLANE [H].
8. PACKAGE TOP DIMENSIONS ARE SMALLER THAN BOTTOM DIMENSIONS AND TOP OF PACKAGE WILL NOT OVERHANG BOTTOM OF PACKAGE.
9. DIMENSION b DOES NOT INCLUDE DAMBAR PROTRUSION, ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.08mm TOTAL IN EXCESS OF THE b DIMENSION AT MAXIMUM MATERIAL CONDITION, DAMBAR CANNOT BE LOCATED ON THE LOWER RADIUS OR THE FOOT.
10. CONTROLLING DIMENSION: MILLIMETER.
11. MAXIMUM ALLOWABLE DIE THICKNESS TO BE ASSEMBLED IN THIS PACKAGE FAMILY IS 0.38 MILLIMETERS.
12. THIS OUTLINE CONFORMS TO JEDEC PUBLICATION 95 REGISTRATION MS-026, VARIATION BEB, BEC, BED, & BEE.
13. AT IS DEFINED AS THE DISTANCE FROM THE SEATING PLANE TO THE LOWEST POINT OF THE PACKAGE BODY.
14. DIMENSION D2 AND E2 REPRESENT THE SIZE OF THE LEADFRAME DRAWING THE ACTUAL DIMENSIONS ARE SPECIFIED ON THE LEADFRAME DRAWING.

| JEDEC VARIATION ALL DIMENSIONS IN MILLIMETERS | | | | |
|---|------|------|------|------|
| S | X | Y | Z | W |
| A | A1 | A2 | A3 | A4 |
| MIN. | 0.05 | 1.40 | 1.60 | 1.60 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 0.15 | 1.45 | 1.60 | 1.60 |
| 13 | | | | |
| D | D1 | D2 | D3 | D4 |
| MIN. | 1.40 | 1.40 | 1.45 | 1.45 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 1.40 | 1.40 | 1.45 | 1.45 |
| 4 | | | | |
| E | E1 | E2 | E3 | E4 |
| MIN. | 1.40 | 1.40 | 1.40 | 1.40 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 1.40 | 1.40 | 1.40 | 1.40 |
| 78 | | | | |
| L | L1 | L2 | L3 | L4 |
| MIN. | 0.45 | 0.60 | 0.75 | 0.75 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 0.45 | 0.60 | 0.75 | 0.75 |
| 78 | | | | |
| N | N1 | N2 | N3 | N4 |
| MIN. | 1.00 | 1.00 | 1.00 | 1.00 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 1.00 | 1.00 | 1.00 | 1.00 |
| 9 | | | | |
| b | b1 | b2 | b3 | b4 |
| MIN. | 0.35 | 0.42 | 0.40 | 0.40 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 0.35 | 0.40 | 0.45 | 0.45 |
| 9 | | | | |
| Ddd | | | | |

| JEDEC VARIATION ALL DIMENSIONS IN MILLIMETERS | | | | |
|---|------|------|------|------|
| S | X | Y | Z | W |
| A | A1 | A2 | A3 | A4 |
| MIN. | 0.05 | 1.40 | 1.60 | 1.60 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 0.15 | 1.45 | 1.60 | 1.60 |
| 13 | | | | |
| D | D1 | D2 | D3 | D4 |
| MIN. | 1.40 | 1.40 | 1.45 | 1.45 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 1.40 | 1.40 | 1.45 | 1.45 |
| 4 | | | | |
| E | E1 | E2 | E3 | E4 |
| MIN. | 1.40 | 1.40 | 1.40 | 1.40 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 1.40 | 1.40 | 1.40 | 1.40 |
| 78 | | | | |
| L | L1 | L2 | L3 | L4 |
| MIN. | 0.45 | 0.60 | 0.75 | 0.75 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 0.45 | 0.60 | 0.75 | 0.75 |
| 78 | | | | |
| N | N1 | N2 | N3 | N4 |
| MIN. | 1.00 | 1.00 | 1.00 | 1.00 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 1.00 | 1.00 | 1.00 | 1.00 |
| 9 | | | | |
| b | b1 | b2 | b3 | b4 |
| MIN. | 0.30 | 0.42 | 0.40 | 0.40 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 0.30 | 0.35 | 0.40 | 0.40 |
| 9 | | | | |
| Ddd | | | | |

| JEDEC VARIATION ALL DIMENSIONS IN MILLIMETERS | | | | |
|---|------|------|------|------|
| S | X | Y | Z | W |
| A | A1 | A2 | A3 | A4 |
| MIN. | 0.05 | 1.40 | 1.60 | 1.60 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 0.15 | 1.45 | 1.60 | 1.60 |
| 13 | | | | |
| D | D1 | D2 | D3 | D4 |
| MIN. | 1.40 | 1.40 | 1.45 | 1.45 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 1.40 | 1.40 | 1.45 | 1.45 |
| 4 | | | | |
| E | E1 | E2 | E3 | E4 |
| MIN. | 1.40 | 1.40 | 1.40 | 1.40 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 1.40 | 1.40 | 1.40 | 1.40 |
| 78 | | | | |
| L | L1 | L2 | L3 | L4 |
| MIN. | 0.45 | 0.60 | 0.75 | 0.75 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 0.45 | 0.60 | 0.75 | 0.75 |
| 78 | | | | |
| N | N1 | N2 | N3 | N4 |
| MIN. | 1.00 | 1.00 | 1.00 | 1.00 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 1.00 | 1.00 | 1.00 | 1.00 |
| 9 | | | | |
| b | b1 | b2 | b3 | b4 |
| MIN. | 0.22 | 0.32 | 0.38 | 0.38 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 0.22 | 0.30 | 0.33 | 0.33 |
| 9 | | | | |
| Ddd | | | | |

| JEDEC VARIATION ALL DIMENSIONS IN MILLIMETERS | | | | |
|---|------|------|------|------|
| S | X | Y | Z | W |
| A | A1 | A2 | A3 | A4 |
| MIN. | 0.05 | 1.40 | 1.60 | 1.60 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 0.15 | 1.45 | 1.60 | 1.60 |
| 13 | | | | |
| D | D1 | D2 | D3 | D4 |
| MIN. | 1.40 | 1.40 | 1.45 | 1.45 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 1.40 | 1.40 | 1.45 | 1.45 |
| 4 | | | | |
| E | E1 | E2 | E3 | E4 |
| MIN. | 1.40 | 1.40 | 1.40 | 1.40 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 1.40 | 1.40 | 1.40 | 1.40 |
| 78 | | | | |
| L | L1 | L2 | L3 | L4 |
| MIN. | 0.45 | 0.60 | 0.75 | 0.75 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 0.45 | 0.60 | 0.75 | 0.75 |
| 78 | | | | |
| N | N1 | N2 | N3 | N4 |
| MIN. | 1.00 | 1.00 | 1.00 | 1.00 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 1.00 | 1.00 | 1.00 | 1.00 |
| 9 | | | | |
| b | b1 | b2 | b3 | b4 |
| MIN. | 0.17 | 0.22 | 0.27 | 0.27 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 0.17 | 0.20 | 0.23 | 0.23 |
| 9 | | | | |
| Ddd | | | | |

| JEDEC VARIATION ALL DIMENSIONS IN MILLIMETERS | | | | |
|---|------|------|------|------|
| S | X | Y | Z | W |
| A | A1 | A2 | A3 | A4 |
| MIN. | 0.05 | 1.40 | 1.60 | 1.60 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 0.15 | 1.45 | 1.60 | 1.60 |
| 13 | | | | |
| D | D1 | D2 | D3 | D4 |
| MIN. | 1.40 | 1.40 | 1.45 | 1.45 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 1.40 | 1.40 | 1.45 | 1.45 |
| 4 | | | | |
| E | E1 | E2 | E3 | E4 |
| MIN. | 1.40 | 1.40 | 1.40 | 1.40 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 1.40 | 1.40 | 1.40 | 1.40 |
| 78 | | | | |
| L | L1 | L2 | L3 | L4 |
| MIN. | 0.45 | 0.60 | 0.75 | 0.75 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 0.45 | 0.60 | 0.75 | 0.75 |
| 78 | | | | |
| N | N1 | N2 | N3 | N4 |
| MIN. | 1.00 | 1.00 | 1.00 | 1.00 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 1.00 | 1.00 | 1.00 | 1.00 |
| 9 | | | | |
| b | b1 | b2 | b3 | b4 |
| MIN. | 0.13 | 0.18 | 0.23 | 0.23 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 0.13 | 0.15 | 0.19 | 0.19 |
| 9 | | | | |
| Ddd | | | | |

| JEDEC VARIATION ALL DIMENSIONS IN MILLIMETERS | | | | |
|---|------|------|------|------|
| S | X | Y | Z | W |
| A | A1 | A2 | A3 | A4 |
| MIN. | 0.05 | 1.40 | 1.60 | 1.60 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 0.15 | 1.45 | 1.60 | 1.60 |
| 13 | | | | |
| D | D1 | D2 | D3 | D4 |
| MIN. | 1.40 | 1.40 | 1.45 | 1.45 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 1.40 | 1.40 | 1.45 | 1.45 |
| 4 | | | | |
| E | E1 | E2 | E3 | E4 |
| MIN. | 1.40 | 1.40 | 1.40 | 1.40 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 1.40 | 1.40 | 1.40 | 1.40 |
| 78 | | | | |
| L | L1 | L2 | L3 | L4 |
| MIN. | 0.45 | 0.60 | 0.75 | 0.75 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 0.45 | 0.60 | 0.75 | 0.75 |
| 78 | | | | |
| N | N1 | N2 | N3 | N4 |
| MIN. | 1.00 | 1.00 | 1.00 | 1.00 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 1.00 | 1.00 | 1.00 | 1.00 |
| 9 | | | | |
| b | b1 | b2 | b3 | b4 |
| MIN. | 0.13 | 0.18 | 0.23 | 0.23 |
| NDM. | ~ | ~ | ~ | ~ |
| MAX. | 0.13 | 0.15 | 0.19 | 0.19 |
| 9 | | | | |
| Ddd | | | | |

*BASED ON 120L9 WITH ADDED LEADS @ EACH CORNER



PACKAGE OUTLINE: UQFN, 14 X 14 mm BODY, 1.00/0.10 mm FORM, 1.40 mm THICK, 4 EJECT PINS (OPTIONAL ePAD)