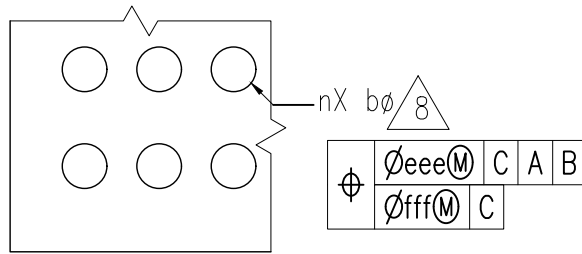
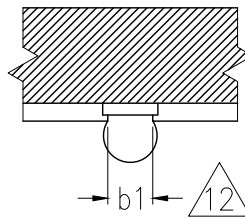


DETAIL A
(ROTATED 90° CW)



DETAIL B

TYPE: SMD
(SOLDER MASK DEFINED)



SECTION C-C

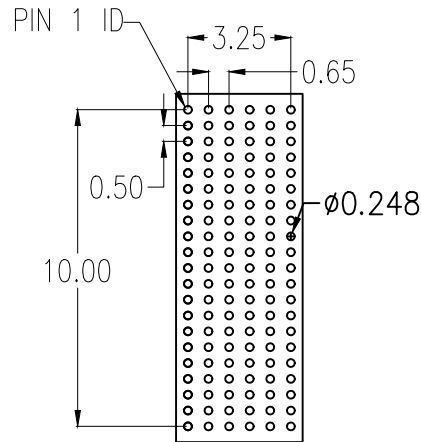
| TABLE 1 | | | | |
|-------------------|---------------------|------|------|-------|
| COMMON DIMENSIONS | | | | |
| SYMBOL | V:VERY THIN PROFILE | | | NOTES |
| | MIN | NOM | MAX | |
| A | 0.80 | 0.90 | 1.00 | 7 |
| A1 | 0.15 | — | — | 9 |
| A2 | — | — | 0.85 | |
| b | 0.27 | 0.32 | 0.37 | |
| b1 | 0.20 | — | — | 13 |
| eD | 0.50 BSC | | | 4 |
| eE | 0.65 BSC | | | 4 |
| NOTES | 1, 2 | | | |

| TABLE 2 | | |
|------------------------|-------|-------|
| RECTANGULAR VARIATIONS | | |
| VARIATION ▶ | AA | NOTES |
| SYMBOL ▼ | | |
| D BSC | 11.00 | 2 |
| E BSC | 4.00 | 2 |
| D1 BSC | 10.00 | 2 |
| E1 BSC | 3.25 | 2 |
| MD | 21 | |
| ME | 6 | |
| SD BSC | 0.00 | 2 |
| SE BSC | 0.325 | 2 |
| n | 0 | 12 |
| N | 126 | 5 |
| FOOTPRINT | 1 | 12 |
| NOTES | 1 | |

| TABLE 3 | |
|--------------------------------|-------|
| TOLERANCE OF FORM AND POSITION | |
| SYMBOL | VALUE |
| aaa | 0.15 |
| bbb | 0.20 |
| ddd | 0.08 |
| eee | 0.15 |
| fff | 0.05 |
| NOTES | 1, 2 |

NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-2009.
2. ALL DIMENSIONS ARE IN MILLIMETERS.
3. SOLDER BALL POSITION DESIGNATOR PER JEP95, SECTION 3, SPP-020.
4. 'eD' AND 'eE' REPRESENT THE SOLDER BALL GRID PITCH CORRESPONDING TO THE D AND E DIRECTIONS RESPECTIVELY.
5. N REPRESENTS THE MAXIMUM NUMBER OF SOLDER BALLS FOR MATRIX SIZES MD, ME.
6. A FULLY POPULATED 14 X 19 MATRIX SIZE IS SHOWN FOR ILLUSTRATION ONLY.
7. DIMENSION "A" INCLUDES STANDOFF HEIGHT "A1", PACKAGE BODY THICKNESS AND LID HEIGHT, BUT DOES NOT INCLUDE ATTACHED FEATURES, e.g. EXTERNAL HEAT SINK. AN INTEGRAL HEAT SLUG IS NOT CONSIDERED AN ATTACHED FEATURE.
8. DIMENSION "b" IS MEASURED AT THE MAXIMUM SOLDER BALL DIAMETER PARALLEL TO PRIMARY DATUM C.
9. PRIMARY DATUM C (SEATING PLANE) IS DEFINED BY THE PLANE ESTABLISHED BY THE CONTACT POINTS OF THREE OR MORE SOLDER BALLS THAT SUPPORT THE DEVICE WHEN IT IS PLACED ON TOP OF A PLANAR SURFACE.
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, IDENTATIONS, OR OTHER FEATURES. THE EXACT SHAPE OF EACH CORNER IS OPTIONAL.
11. DIMENSIONS 'SD' AND 'SE' ARE MEASURED WITH RESPECT TO DATUM A AND DATUM B AND DEFINE THE POSITION OF THE CENTER SOLDER BALL IN THE OUTER ROW. WHEN THERE IS AN ODD NUMBER OF SOLDER BALLS IN THE OUTER ROW 'SD' OR 'SE' = 0 WHEN THERE IS AN EVEN NUMBER OF SOLDER BALLS IN THE OUTER ROW, 'SD' = eD/2 AND 'SE' = eE/2.
12. SOLDERABLE SURFACE MAY BE DEFINED BY AN OPENING IN THE SOLDER RESIST LAYER (TYPE 1) OR BY THE SIZE OF A METALIZED PAD (TYPE 2). IT MAY BE ELLIPTICAL PROVIDED THE RATIO OF MAJOR TO MINOR AXES IS NO GREATER THAN 2/1 AND THE SURFACE AREA IS NO LESS THAN THE MINIMUM FOR A CIRCULAR PAD. FOR TYPE 2 DESIGNS, EXPOSED COPPER TRACES ARE PERMITTED OUTSIDE THE b1 PAD AREA.



RECOMMENDED LAND PATTERN DIMENSION
(TOP VIEW)

NOTES:

1. ALL DIMENSION ARE IN mm. ANGLES IN DEGREES.
2. TOP DOWN VIEW. AS VIEWED ON PCB.
3. COMPONENT OUTLINE SHOW FOR REFERENCE IN GREEN.
4. LAND PATTERN IN BLUE. NSMD PATTERN ASSUMED.
5. LAND PATTERN RECOMMENDATION PER IPC-7351B GENERIC REQUIREMENT FOR SURFACE MOUNT DESIGN AND LAND PATTERN.

| Package Revision History | | |
|--------------------------|---------|-----------------|
| Date Created | Rev No. | Description |
| Feb 12, 2019 | Rev 00 | Initial release |