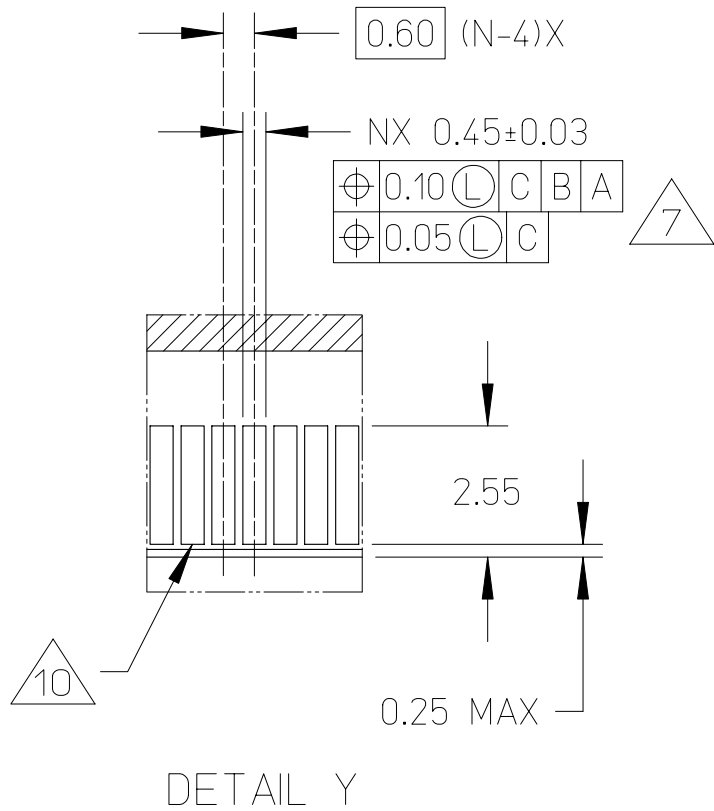
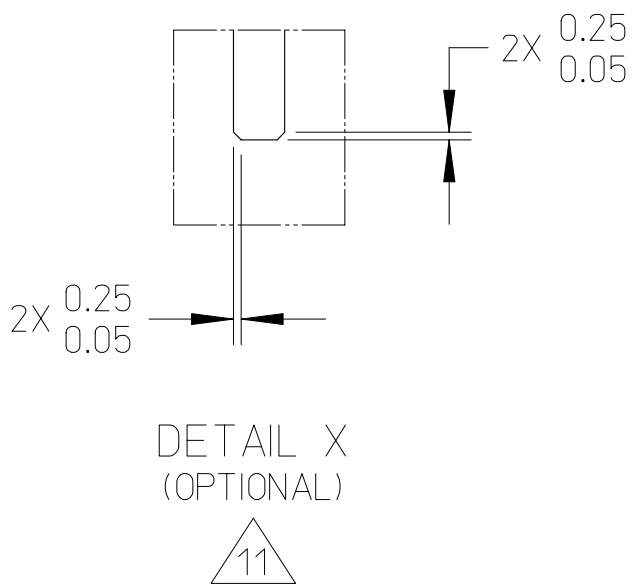
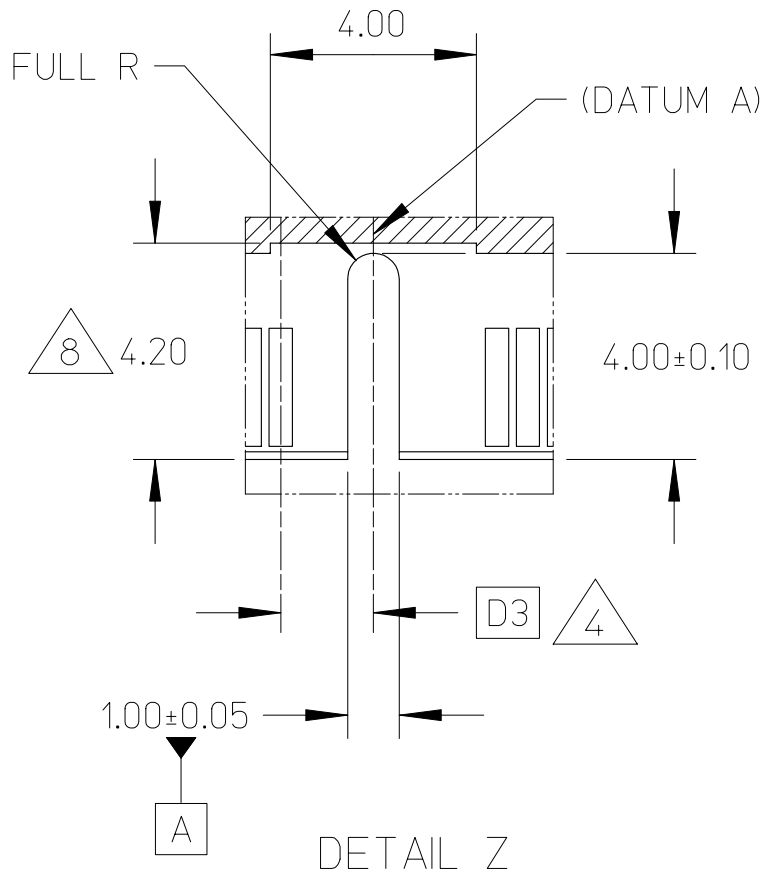
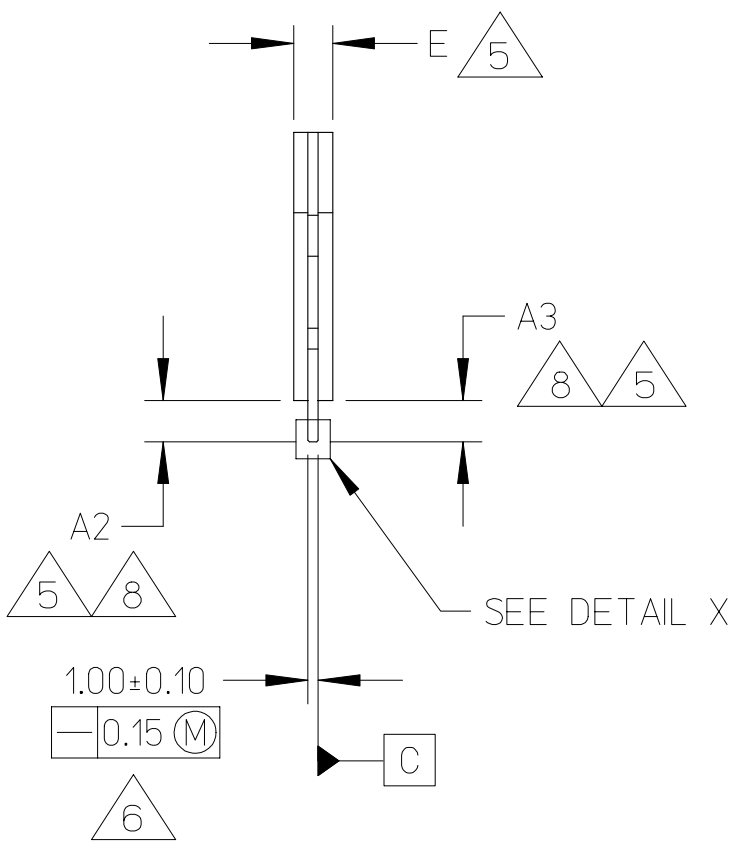


PATENT ISSUES 

|   |  |
|---|--|
| JEDEC<br>SOLID STATE<br>PRODUCT OUTLINE | THIS REGISTERED OUTLINE HAS BEEN PREPARED AND PUBLISHED BY THE JEDEC<br>JC-11 COMMITTEE AND REFLECTS A PRODUCT WITH ANTICIPATED USE IN THE<br>ELECTRONICS INDUSTRY. CHANGES ARE LIKELY TO OCCUR. |
|---|--|

|   |                     |             |               |        |                 |
|---|---------------------|-------------|---------------|--------|-----------------|
| TITLE:<br>200 PIN DDR S.O. DIMM,<br>0.60 LEAD CENTERS | PACKAGE DESIGNATOR: | ISSUE:<br>B | DATE:<br>4/03 | MO-224 | PAGE:<br>1 OF 6 |
|---|---------------------|-------------|---------------|--------|-----------------|



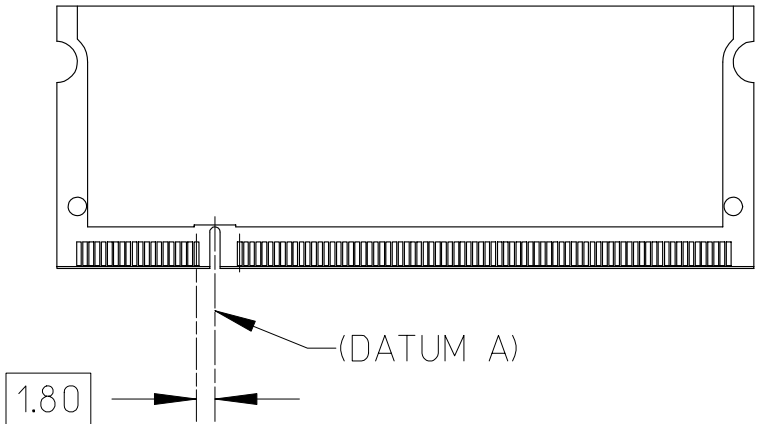
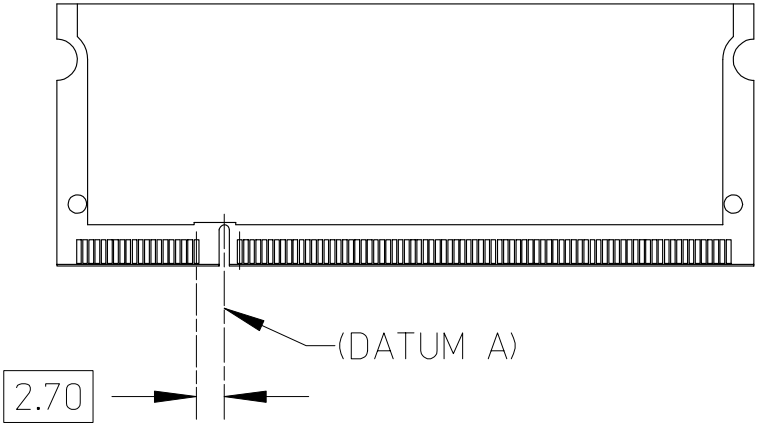
| COMMON DIMENSION TABLE |             |       |       |       |
|------------------------|-------------|-------|-------|-------|
| SYMBOL                 | MIN         | NOM   | MAX   | NOTES |
| A1                     | 6.00 BASIC  |       |       |       |
| A2                     | 4.00        | --    | --    | 5,8   |
| A3                     | 4.00        | --    | --    | 5,8   |
| A4                     | 20.00 BASIC |       |       |       |
| D                      | 67.45       | 67.60 | 67.75 |       |
| D1                     | 11.55 BASIC |       |       |       |
| D2                     | 63.60 BASIC |       |       |       |
| E                      | --          | --    | 3.80  | 5     |
| e1                     | 11.40 BASIC |       |       |       |
| e2                     | 47.40 BASIC |       |       |       |
| N                      | 200         |       |       |       |
|                        |             |       |       |       |
| ISSUE                  | A           |       |       |       |
| REF                    | 14-043      |       |       |       |
| NOTES                  | 1,2,3       |       |       |       |

| SDRAM VARIATIONS |             |       |       |             |       |       |       |
|------------------|-------------|-------|-------|-------------|-------|-------|-------|
| SYMBOL           | AA          |       |       | AB          |       |       | NOTES |
|                  | MIN         | NOM   | MAX   | MIN         | NOM   | MAX   |       |
| A                | 25.25       | 25.40 | 25.55 | 25.25       | 25.40 | 25.55 |       |
| D3               | 1.80 BASIC  |       |       | 2.70 BASIC  |       |       | 4     |
| D4               | 1.50 BASIC  |       |       | 2.40 BASIC  |       |       |       |
| D5               | 18.45 BASIC |       |       | 17.55 BASIC |       |       |       |
|                  |             |       |       |             |       |       |       |
| ISSUE            | A           |       |       |             |       |       |       |
| REF              | 14-043      |       |       |             |       |       |       |
| NOTES            | 1,2,3       |       |       |             |       |       |       |

| SDRAM VARIATIONS |             |       |       |             |       |       |       |
|------------------|-------------|-------|-------|-------------|-------|-------|-------|
|                  | BA          |       |       | BB          |       |       |       |
| SYMBOL           | MIN         | NOM   | MAX   | MIN         | NOM   | MAX   | NOTES |
| A                | 31.60       | 31.75 | 31.90 | 31.60       | 31.75 | 31.90 |       |
| D3               | 1.80 BASIC  |       |       | 2.70 BASIC  |       |       | 4     |
| D4               | 1.50 BASIC  |       |       | 2.40 BASIC  |       |       |       |
| D5               | 18.45 BASIC |       |       | 17.55 BASIC |       |       |       |
|                  |             |       |       |             |       |       |       |
| ISSUE            | A           |       |       |             |       |       |       |
| REF              | 14-043      |       |       |             |       |       |       |
| NOTES            | 1,2,3       |       |       |             |       |       |       |

| SDRAM VARIATIONS |             |       |       |             |       |       |       |
|------------------|-------------|-------|-------|-------------|-------|-------|-------|
|                  | CA          |       |       | CB          |       |       |       |
| SYMBOL           | MIN         | NOM   | MAX   | MIN         | NOM   | MAX   | NOTES |
| A                | 29.85       | 30.00 | 30.15 | 29.85       | 30.00 | 30.15 |       |
| D3               | 1.80 BASIC  |       |       | 2.70 BASIC  |       |       | 4     |
| D4               | 1.50 BASIC  |       |       | 2.40 BASIC  |       |       |       |
| D5               | 18.45 BASIC |       |       | 17.55 BASIC |       |       |       |
|                  |             |       |       |             |       |       |       |
| ISSUE            | B           |       |       |             |       |       |       |
| REF              | 14-059      |       |       |             |       |       |       |
| NOTES            | 1,2,3       |       |       |             |       |       |       |

MECHANICAL KEYING:  
(FRONT VIEWS)

|  |  |
|--|--|
| <p>POWER SUPPLY</p> <p style="text-align: center;">9</p> | <p style="text-align: center;">4</p>   |
| <p style="text-align: center;">2.5 V</p>                 |  <p style="text-align: center;">(DATUM A)</p> <p style="text-align: center;">1.80</p>  |
| <p style="text-align: center;">1.8 V</p>                 |  <p style="text-align: center;">(DATUM A)</p> <p style="text-align: center;">2.70</p> |

NOTES:

1. DIMENSIONING AND TOLERANCING CONFORM TO ASME Y14.5M-1994.
2. TOLERANCES ON ALL DIMENSIONS  $\pm 0.15$  UNLESS OTHERWISE SPECIFIED.
3. ALL DIMENSIONS ARE IN MM.

△<sub>4</sub> APPLICATION NOTE:  
VARYING THE POSITION OF THE NOTCH IDENTIFIES THE OPERATIONAL VOLTAGE: 2.5 VOLT (XA), 1.8 VOLT (XB).

△<sub>5</sub> DIMENSIONS APPLICABLE WHEN COMPONENTS MOUNTED ON BOTH SIDES.

△<sub>6</sub> CARD THICKNESS APPLIES ACROSS TABS AND INCLUDES PLATING AND/OR METALIZATION.

△<sub>7</sub> APPLICATION NOTE:  
RECOMMENDED PLATING FOR CONTACT PADS ARE:  
1) PREFERABLE PLATING: ELECTROLYTIC GOLD PLATING 0.76 MICROMETERS MINIMUM OVER ELECTROLYTIC Ni 2.00 MICROMETERS MINIMUM.  
2) ALTERNATIVE PLATING: GOLD PLATING 0.05 - 0.75 MICROMETERS OVER Ni 2.00 MICROMETERS MINIMUM MUST USE AN ELECTRONIC CONTACT GRADE CORROSIVE BARRIER LUBRICANT.

△<sub>8</sub> BORDER OF COMPONENT AREA.

△<sub>9</sub> THE JC-42.5 COMMITTEE CONTROLS THE INFORMATION IN THIS COLUMN. IT IS SHOWN HERE FOR REFERENCE ONLY, AND IS SUBJECTED TO CHANGE.

△<sub>10</sub> APPLICATION NOTE:  
EDGE OF CONTACT PADS SHALL BE FREE OF BURRS AND EXTERNAL TIE BARS.

△<sub>11</sub> THE ADDITION OF THIS BEVEL IS A FABRICATION OPTION AND IS NOT REQUIRED. THE BEVEL AIDS THE INSERTION OF THE MODULE INTO THE CONNECTOR. THE BEVEL IS NOT TO HIT THE PLATED CONTACTS.

△<sub>12</sub> PATENT CLAIM:  
IT HAS BEEN STATED THAT U.S. PATENT NO. 5,227,664 (HELD BY HITACHI) MAY BE RELATED TO CERTAIN IMPLEMENTATIONS OF THIS PACKAGE OUTLINE.

|   |   |             |               |        |                 |
|---|---|-------------|---------------|--------|-----------------|
| JEDEC<br>SOLID STATE<br>PRODUCT OUTLINE | TITLE:<br>200 PIN DDR S.O. DIMM,<br>0.60 LEAD CENTERS | ISSUE:<br>B | DATE:<br>4/03 | MO-224 | PAGE:<br>6 OF 6 |
|---|---|-------------|---------------|--------|-----------------|