



# MCS<sup>®</sup>-51 and MCS<sup>®</sup>-96 Packaging Information

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## MCS-51 and MCS-96 Packaging Information

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**Intel Product Identification Codes**

**Package Type**

- Ceramic Pin Grid Array
- Ceramic Dual In-Line Package
- Cerdip Dual In-Line Package
- Plastic Quad Flatpack Package, Fine Pitch, Die Up
- Plastic Leaded Chip Carrier
- Plastic Dual In-Line Package
- Ceramic Leadless Chip Carrier
- Quad Flatpack Package
- Plastic Dual In-Line Package (Shrink)

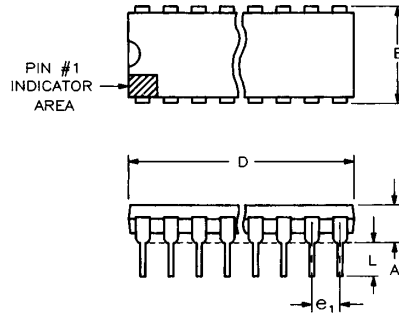
- Indicates extended operating temperature range (-40°C to +85°C) express product with 160 ± 8 hrs. dynamic burn-in.
- Indicates commercial temperature range (0°C to 70°C) express product with 160 ± 8 hrs. dynamic burn-in
- Indicates extended temperature range (-40°C to +85°C) express product without burn-in.

272118-12

Note: Package type and temperature variables have changed. They are now indicated by x.



**40-LEAD PLASTIC DUAL IN-LINE PACKAGE**



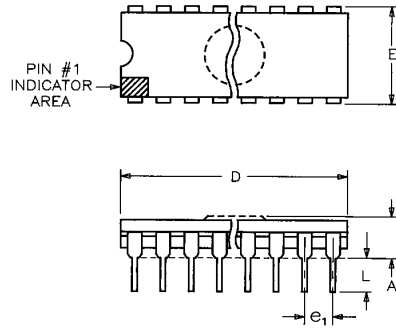
272118±1

| Family: Plastic Dual In-Line Package |                      |                 |
|--------------------------------------|----------------------|-----------------|
| Symbol                               | Millimeters Approx * | Inches Approx * |
| A                                    | 5                    | 0.2             |
| D                                    | 53                   | 2.1             |
| E                                    | 16                   | 0.6             |
| e <sub>1</sub>                       | 2.5                  | 0.10            |
| L                                    | 3                    | 0.1             |

\*For exact dimensions consult the Packaging Handbook (#240800).



40-LEAD CERDIP DUAL IN-LINE PACKAGE

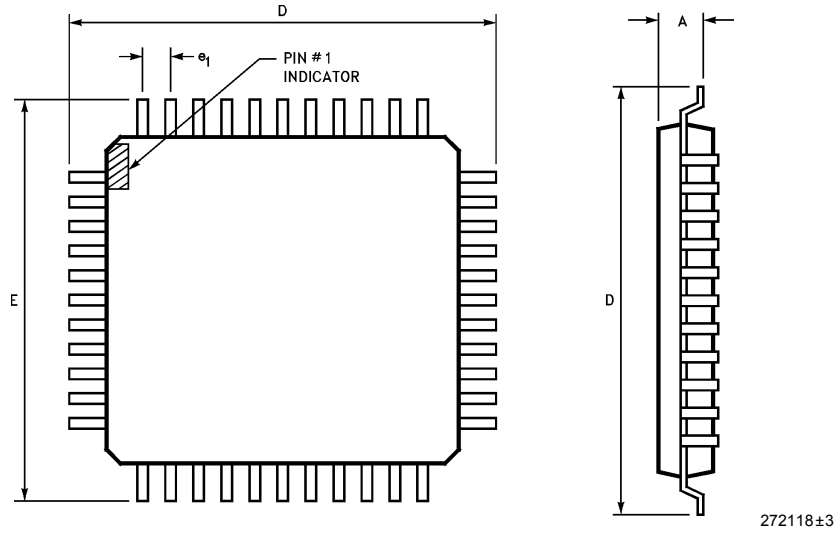


| Family: Cerdip Dual In-Line Package |                      |                 |
|-------------------------------------|----------------------|-----------------|
| Symbol                              | Millimeters Approx * | Inches Approx * |
| A                                   | 5.8                  | 0.2             |
| D                                   | 53                   | 2.1             |
| E                                   | 16                   | 0.6             |
| e <sub>1</sub>                      | 2.5                  | 0.10            |
| L                                   | 3                    | 0.1             |

\*For exact dimensions consult the Packaging Handbook (#240800).



**44-LEAD QUAD FLATPACK PACKAGE  
VARIATION: SQUARE**



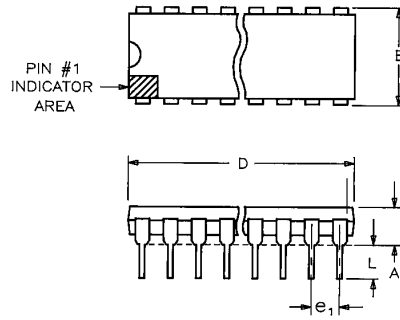
| Family: Quad Flatpack Package |                      |
|-------------------------------|----------------------|
| Symbol                        | Millimeters Approx * |
| A                             | 3                    |
| D                             | 13                   |
| E                             | 13                   |
| e <sub>1</sub>                | 0.8                  |

\*For exact dimensions consult the Packaging Handbook (#240800).





### 48-LEAD PLASTIC DUAL IN-LINE PACKAGE



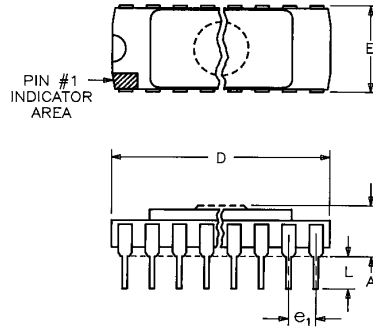
272118±4

| Family: Plastic Dual In-Line Package |                      |                 |
|--------------------------------------|----------------------|-----------------|
| Symbol                               | Millimeters Approx * | Inches Approx * |
| A                                    | 5                    | 0.2             |
| D                                    | 62                   | 2.5             |
| E                                    | 16                   | 0.6             |
| e <sub>1</sub>                       | 2.5                  | 0.1             |
| L                                    | 3                    | 0.1             |

\*For exact dimensions consult the Packaging Handbook (#240800).



**48-LEAD CERAMIC DUAL IN-LINE PACKAGE**



272118±5

| Family: Ceramic Side Braze Dual In-Line |                      |                 |
|---|----------------------|-----------------|
| Symbol                                  | Millimeters Approx * | Inches Approx * |
| A                                       | 6(1)                 | 0.2(1)          |
| A                                       | 7(2)                 | 0.3(2)          |
| D                                       | 62                   | 2.5             |
| E                                       | 16                   | 0.6             |
| e <sub>1</sub>                          | 2.5                  | 0.1             |
| L                                       | 3                    | 0.1             |

**NOTES:**

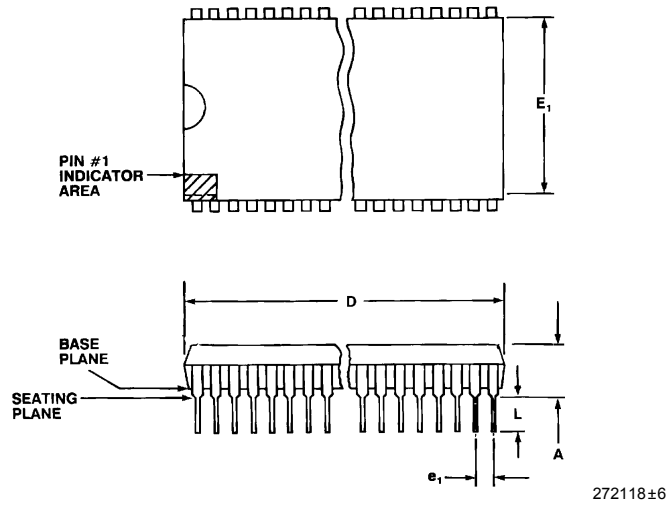
- 1. Solid LID
- 2. EPROM LID

\*For exact dimensions consult the Packaging Handbook (#240800).



MCS-51 AND MCS-96 PACKAGING INFORMATION

64-LEAD PLASTIC DUAL IN-LINE PACKAGE (SHRINK)

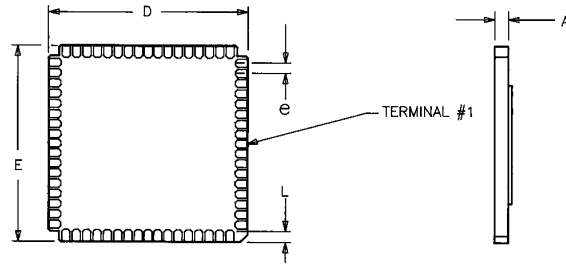


| Family: Plastic Dual In-Line Package |                      |                 |
|--------------------------------------|----------------------|-----------------|
| Symbol                               | Millimeters Approx * | Inches Approx * |
| A                                    | 6                    | 0.3             |
| D                                    | 59                   | 2.3             |
| $E_1$                                | 18                   | 0.7             |
| $e_1$                                | 1.8                  | 0.07            |
| L                                    | 3                    | 0.1             |

\*For exact dimensions consult the Packaging Handbook (#240800).



**68-CERAMIC LEADLESS CHIP CARRIER  
VARIATION: B**

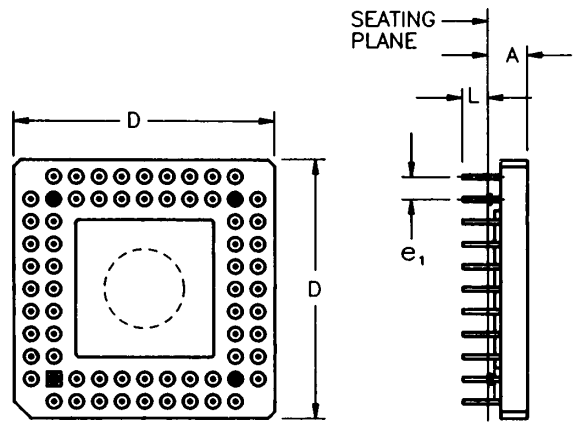


272118±7

| Family: Ceramic Leadless Chip Carrier |                      |                 |
|---------------------------------------|----------------------|-----------------|
| Symbol                                | Millimeters Approx * | Inches Approx * |
| A                                     | 3                    | 0.1             |
| D                                     | 25                   | 1.0             |
| E                                     | 25                   | 1.0             |
| e                                     | 1.3                  | 0.05            |
| L                                     | 1                    | 0.1             |

\*For exact dimensions consult the Packaging Handbook (#240800).

68-LEAD CERAMIC PIN GRID ARRAY PACKAGE



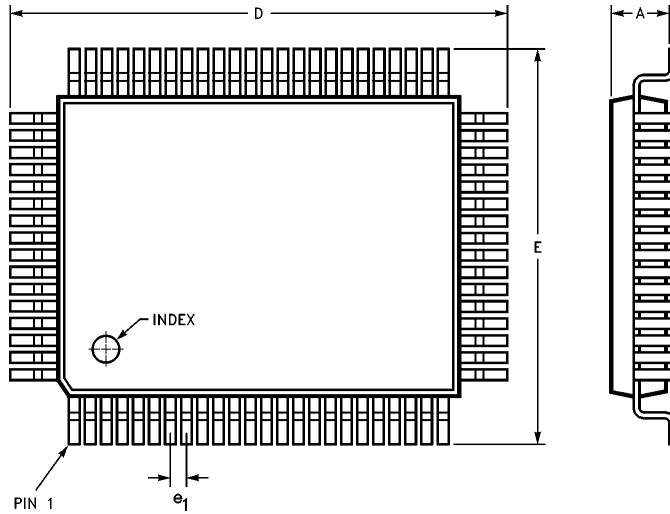
272118±8

| Family: Ceramic Pin Grid Array Package |                      |                 |
|--|----------------------|-----------------|
| Symbol                                 | Millimeters Approx * | Inches Approx * |
| A                                      | 5                    | 0.2             |
| D                                      | 30                   | 1.2             |
| e <sub>1</sub>                         | 2.5                  | 0.1             |
| L                                      | 2                    | 0.1             |

\*For exact dimensions consult the Packaging Handbook (#240800).



**80-LEAD QUAD FLATPACK PACKAGE  
VARIATION: RECTANGULAR**

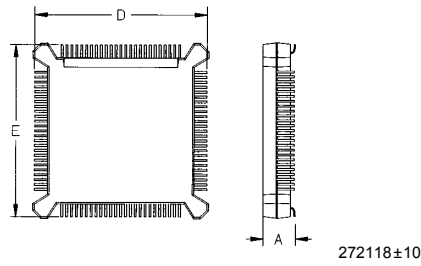


272118±9

| Family: Quad Flatpack Package |                      |
|-------------------------------|----------------------|
| Symbol                        | Millimeters Approx * |
| A                             | 3                    |
| D                             | 25                   |
| E                             | 19                   |
| e <sub>1</sub>                | 0.8                  |

\*For exact dimensions consult the Packaging Handbook (#240800).

100-LEAD PLASTIC QUAD FLATPACK PACKAGE

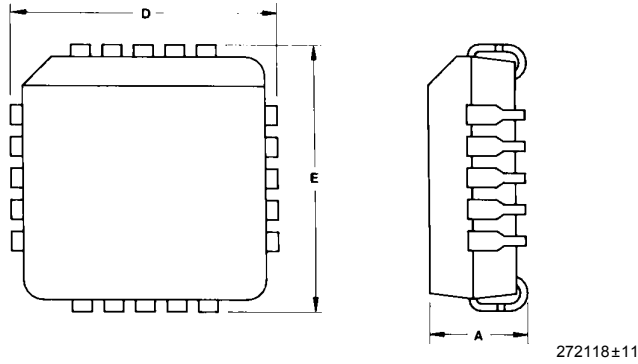


| Family: Plastic Quad Flatpack (0.025 Inch (0.635mm) Pitch) |                    |                 |                      |
|--|--------------------|-----------------|----------------------|
| Symbol   | Description        | Inches Approx * | Millimeters Approx * |
| A  | Package Height     | 0.2             | 5                    |
| D, E   | Terminal Dimension | 0.9             | 23                   |

\*For exact dimensions consult the Packaging Handbook (#240800).



**44/52/68/84-LEAD PLASTIC LEADED CHIP CARRIER**



| Family: Plastic Leaded Chip Carrier-Square |                      |                 |
|--|----------------------|-----------------|
| Symbol                                     | 44-Lead              |                 |
|  | Millimeters Approx * | Inches Approx * |
| A  | 5                    | 0.2             |
| D  | 18                   | 0.7             |
| E  | 18                   | 0.7             |

| Family: Plastic Leaded Chip Carrier-Square |                      |         |         |                 |         |         |
|--|----------------------|---------|---------|-----------------|---------|---------|
| Symbol                                     | Millimeters Approx * |         |         | Inches Approx * |         |         |
|  | 68-Lead              | 52-Lead | 84-Lead | 68-Lead         | 52-Lead | 84-Lead |
| A  | 5                    | 5       | 5       | 0.2             | 0.2     | 0.2     |
| D  | 26                   | 21      | 31      | 1.0             | 0.8     | 1.2     |
| E  | 26                   | 21      | 31      | 1.0             | 0.8     | 1.2     |

\*For exact dimensions consult the Packaging Handbook (#240800).