



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

November 1994

Order Number: 272118-001



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## MCS-51 and MCS-96 Packaging Information

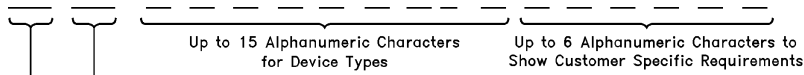
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### Intel Product Identification Codes



#### Package Type

- A - Ceramic Pin Grid Array
- C - Ceramic Dual In-Line Package
- D - Cerdip Dual In-Line Package
- KU - Plastic Quad Flatpack Package, Fine Pitch, Die Up
- N - Plastic Leaded Chip Carrier
- P - Plastic Dual In-Line Package
- R - Ceramic Leadless Chip Carrier
- S - Quad Flatpack Package
- U - Plastic Dual In-Line Package (Shrink)

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

272118-12

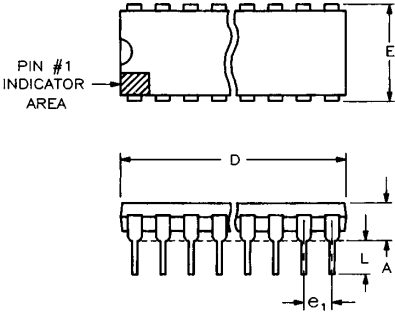
#### EXAMPLES:

- N80C196KR PLCC, 16 MHz, Commercial Temperature Range
- LN87C54 PLCC, 12 MHz, Extended Temperature Range (Express)





**40-LEAD PLASTIC DUAL IN-LINE PACKAGE (TYPE N)**



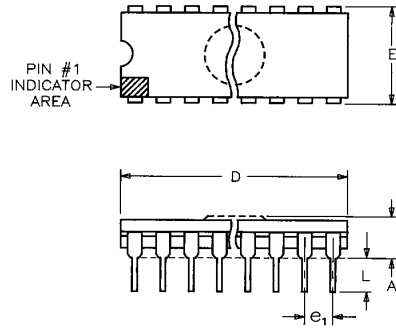
272118-1

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 (TYPE D)**

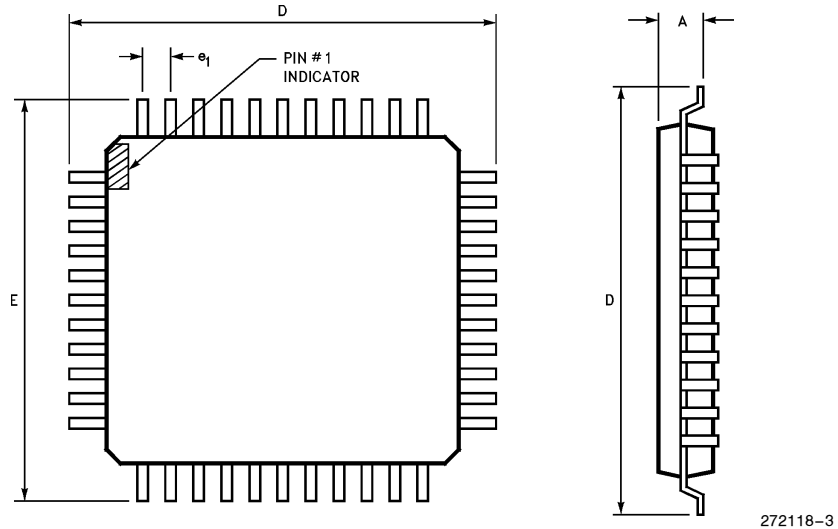


272118-2

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 (TYPE S)  
VARIATION: SQUARE**



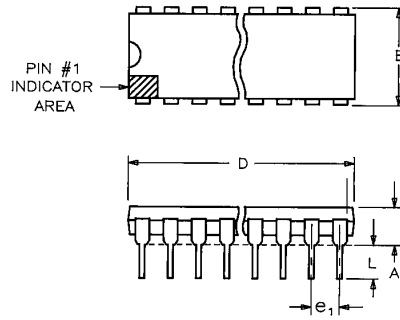
Family: Quad Flatpack Package	
Symbol	Millimeters Approx*
A	3
D	13
E	13
e <sub>1</sub>	0.8

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





**48-LEAD PLASTIC DUAL IN-LINE PACKAGE (TYPE N)**

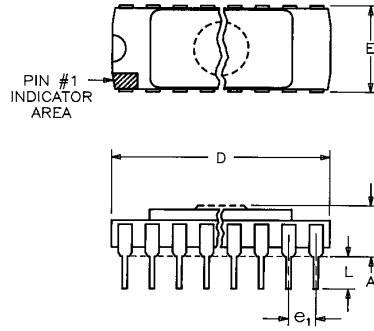


272118-4

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 (TYPE C)**



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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:**

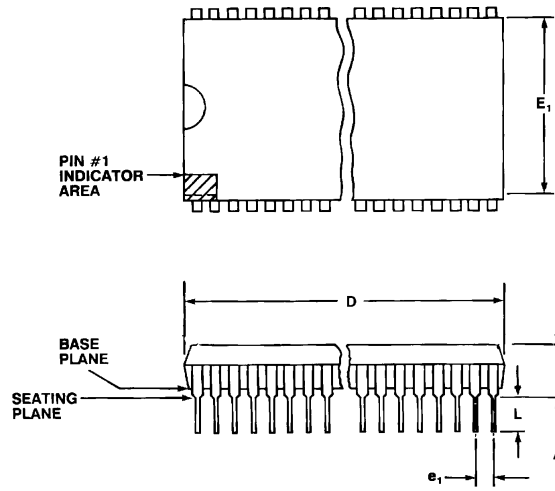
1. Solid LID
2. EPROM LID

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



MCS-51 AND MCS-96 PACKAGING INFORMATION

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



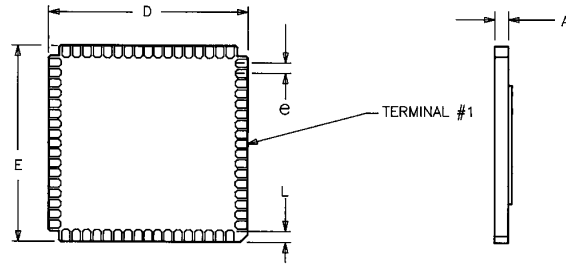
272118-6

Family: Plastic Dual In-Line Package		
Symbol	Millimeters Approx*	Inches Approx*
A	6	0.3
D	59	2.3
E <sub>1</sub>	18	0.7
e <sub>1</sub>	1.8	0.07
L	3	0.1

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



**68-CERAMIC LEADLESS CHIP CARRIER (TYPE R)  
VARIATION: B**

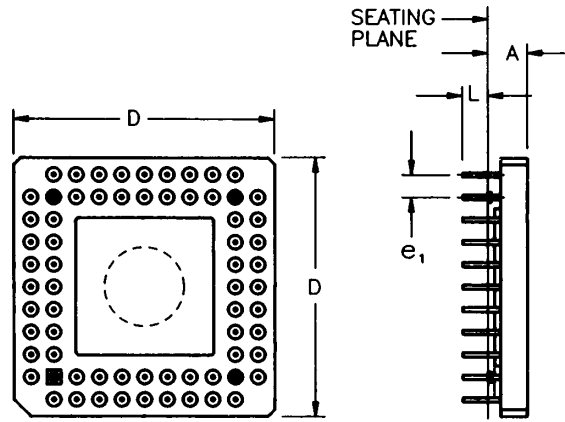


272118-7

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 (TYPE A)**



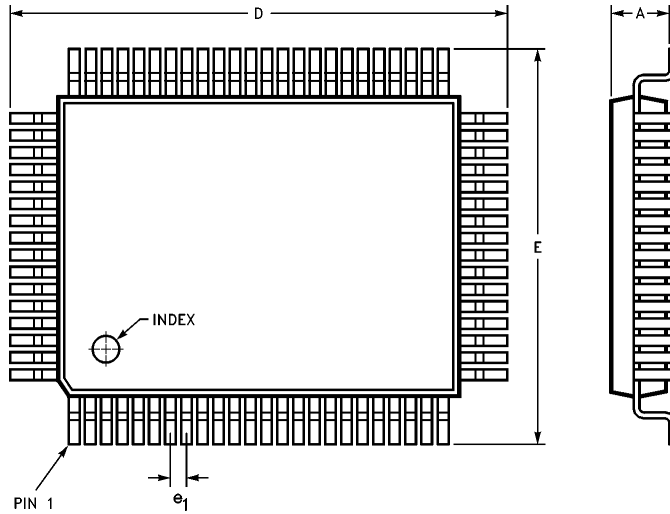
272118-8

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 (TYPE S)  
VARIATION: RECTANGULAR**



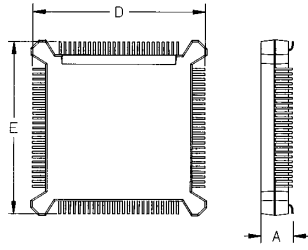
272118-9

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 (TYPE KU)



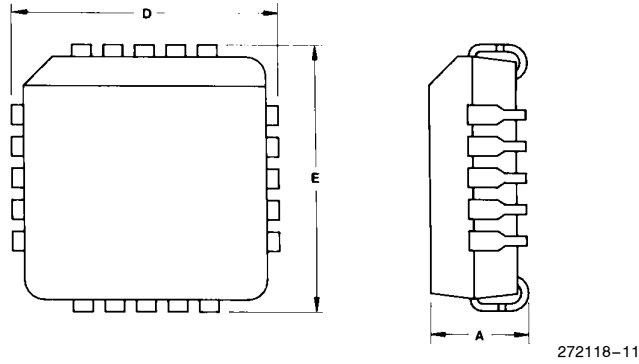
272118-10

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 (TYPE N)**



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).