



# Package Naming Conventions

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## Package Naming Conventions Report

### Why we need Package Naming convention?

1. It will be easy for users, if packages of same type come in serial listing.
2. If we keep some information like width, omitted pins etc. in the name, user can easily access the required package in one look.
3. By keeping a naming convention for packages the Library will become more structured and easy to handle.
4. This convention is developed for changing the entire package name in to a standard form. So the maximum length of the name should be within 15 characters.

By taking this as a basic goal, we have developed a naming convention for packages in our library and it is as follows:

### BGA Naming Convention

Structure: "BGA N/M Matrix/V"  
2k Description Structure: "BGA N/e Pitch/M Matrix"  
Eg: BGA352/M26x26

### Capacitor Naming Convention

For PMD

Structure for Fixed Capacitor: "C/L length/V"  
2k Description Structure: "C/L length/H Hole Diameter"  
Include all CEF, CEL, CES, CF, CFP, CK, CKR, CL, CSR, CASE etc.  
Eg: C/L200, C/L200/A, C/L400

Structure for Polarized Capacitor: "C/L length/POL/V"  
2k Description Structure: "C/L length/H Hole Diameter/POL"  
Include all CEF, CEL, CES, CF, CFP, CK, CKR, CL, CSR, CASE etc.  
Eg: C/L400/POL, C/L400/POL/A

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Structure for Variable Capacitor: "CVAR N/V"  
2k Description Structure: "CVAR N/H Hole Diameter"  
Eg: CVAR3, CVAR3/A

For SMD

Structure for Fixed Capacitor: "C/L length/SM/V"  
2k Description Structure: "C/L length/S pad size"  
Eg: C/L90, C/L133/SM

Structure for Variable Capacitor: "CVAR N/SM/V"  
2k Description Structure: "CVAR N/S pad size"

### CASE Packages Naming Convention

Structure: "CASE# /N/V"  
2k Description Structure: "CASE# /N/e Pitch"  
Eg: CASE221/3

**Note:** Case is a dedicated type of MOTOROLA only if no standard package name is given we can use CASE.

### Connector Naming Convention

General Structure: "CON/Type N/V"  
2k General Description Structure: "CON/Type N/e Pitch"

Structure for Header Connector: "CON/HEADER N/V"  
2k Description Structure: "CON/HEADER N/e Pitch"  
Eg: CON/HEADER4, CON/HEADER20/A

Structure for DB Connector: "CON/DB N/V"  
2k Description Structure: "CON/DB N/e Pitch"  
Eg: CON/DB15, CON/DB15/A

Structure for EURO Connector: "CON/EURO N/V"  
2k Description Structure: "CON/EURO N/e Pitch"  
Eg: CON/EURO64, CON/EURO64/A

**Package Naming Conventions**

Structure for FRC Connector: "CON/FRC N/V"  
 2k Description Structure: "CON/FRC N/e Pitch"  
 Eg: CON/FRC10

Structure for IBM Connector: "CON/IBM N/V"  
 2k Description Structure: "CON/IBM N/e Pitch"  
 Eg: CON/IBM18, CON/IBM18/A

Structure for Power Connector: "CON/PWR N/V"  
 2k Description Structure: "CON/PWR N/e Pitch"  
 Eg: CON/PWR10

Structure for List Connector: "CON/LIST N/V"  
 2k Description Structure: "CON/LIST N/e Pitch"  
 Eg: CON/LIST10

Structure for Edge Connector: "CON/EDGE N/V"  
 2k Description Structure: "CON/EDGE N/e Pitch"  
 Eg: CON/EDGE18

**Crystal Naming Convention**

For PMD

Structure for Crystal: "XT/L length/V"  
 2k Description Structure: "XT/L length/H Hole Diameter"  
 Eg: XT/L192

For SMD

Structure for Crystal: "XT/L length/SM/V"  
 2k Description Structure: "XT/L length/S Pad Size"  
 Eg: XT/L248/SM

**DC-DC Converter Naming convention**

Structure "DC N/V"  
 2k Description Structure: "DC N/e Pitch/W Width"  
 Eg: DC14

**DD Naming convention**

Structure "DD N/V"  
2k Description Structure: "DD N/e Pitch"  
Eg: DD3/A

**DIP Naming convention**

For PMD  
Structure: "DIP N/ Width/V"  
2k Description Structure: "DIP N/e Pitch/W Width"  
Includes all DIL, DIP, SDIP, PDIP, MDIP, CDIP, Hermetic DIP, Zigzag DIP  
Eg: DIP16/300, DIP16/300/A, DIP16/300/P12

For SMD  
Structure: "DIP N/Width/SM/V"  
2k Description Structure: "DIP N/e Pitch/W Width/SM"  
Eg: DIP8/300/SM

**DO Naming Convention**

Structure: "DO# /N/L Length/V"  
2k Description Structure: "DO# /N/L Length"  
Eg: DO13/2/L700

**FP Naming Convention**

Structure: "FP N/Width/V"  
2k Description Structure: "FP N/e Pitch/W width"  
Eg: FP48/380

**Fuse Naming Convention**

For PMD  
Structure for Fuse: "F/L length/V"  
2k Description Structure: "F/L length/H Hole Diameter"  
Eg: F/L1500

For SMD

Structure for Fuse: "F/L length/SM/V"

2k Description Structure: "F/L length/S Pad Size"

Eg: F/L200/SM

### Inductor Naming Convention

For PMD

Structure for Inductor: "L/L length/V"

2k Description Structure: "L/L length/H Hole Diameter"

Eg: L/L600

For SMD

Structure for Inductor: "L/L length/SM/V"

2k Description Structure: "L/L length/S Pad Size"

Eg: L/L79/SM

### LCC Naming Convention

Structure: "LCC N/V"

2k Description Structure: "LCC N/e Pitch"

Include all CLCC, LCC, PLCC series.

Eg: LCC18, LCC18/A, LCC20

### LGA Naming Convention

Structure: "LGA N/M Matrix/V"

2k Description Structure: "LGA N/e Pitch/M Matrix"

Eg: LGA227/M22x22

### PGA Naming Convention

Structure: "PGA N/M Matrix/V"

2k Description Structure: "PGA N/e Pitch/M Matrix"

Eg: PGA68/M10x10, PGA68/M11x11

### QFP Naming Convention

Structure: "QFP N/V"

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2k Description Structure: "QFP N/e Pitch"

Include all CQFP, PQFP, QFP, TQFP Series.

Eg: QFP144, QFP144/A, QFP132

## Relay Naming Convention

Structure: "RELAY N/V"

2k Description Structure: "RELAY N/e Pitch/H Hole diameter"

Eg: RELAY6, RELAY5

## Resistor Naming Convention

For PMD

Structure for Fixed Resistor: "R/L length/V"

2k Description Structure: "R/L length/H Hole Diameter"

Eg: R/L600, R/L400, R/L400/A

Structure for Variable Resistor: "RVAR N/V"

2k Description Structure: "RVAR N/H Hole diameter"

Eg: RVAR3, RVAR3/A

For SMD

Structure for Fixed Resistor: "R/L length/SM/V"

2k Description Structure: "R/L length/S Pad Size"

Eg: R/L90/SM

Structure for Variable Resistor: "RVAR N/SM/V"

2k Description Structure: "RVAR N/S Pad Size"

Eg: RVAR3/SM

## SIP Naming Convention

Structure: "SIP N/V"

2k Description Structure: "SIP N/e Pitch"

Includes all SIP and SIL series

Eg: SIP10, SIP8

## Package Naming Conventions

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Structure for SIP Discrete: "SIP N/DS/V"  
2k Description Structure: "SIP N/e Pitch/DS"  
Eg: SIP10/DS, SIP11/DS

### Socket Naming convention

General Structure: "SKT/Type N/V"  
2k General Description Structure: "SKT/Type N/e Pitch/W Width"  
Structure DIP Socket "SKT/DIP N/Width/V"  
2k Description Structure: "SKT/DIP N/e Pitch/W Width"  
Eg: SKT/DIP4/300, SKT/DIP6/300

Structure DIMM Socket: "SKT/DIMM N/V"  
2k Description Structure: "SKT/DIMM N/e Pitch"  
Eg: SKT/DIMM144/e80m

### SOJ Naming Convention

Structure: "SOJ N/Width/V"  
2k Description Structure: "SOJ N/e Pitch/W Width"  
Eg: SOJ20/200, SOJ26/350/P20

### SOIC Naming Convention

Structure: "SOIC N/Width/V"  
2k Description Structure: "SOIC N/e Pitch/W Width"  
Eg: SOIC32/300, SOIC28/300/P8

### SOP Naming Convention

Structure: "SOP N/Width/V"  
2k Description Structure: "SOP N/e Pitch/W width"  
Includes all SOP, SSOP, TSOP, MSOP, VSOP  
Eg: SOP16/200, SOP16/150

### SOT Naming Convention

Structure: "SOT# /N/V"

2k Description Structure: "SOT# /N/e Pitch"

Eg: SOT82/3

### Transformer Naming Convention

For PMD

Structure for Transformer: "TFR N/V"

2k Description Structure: "TFR N/H Hole Diameter/"

Eg: TFR6, TFR6/A

For SMD

Structure for Transformer: "TFR N/SM/V"

2k Description Structure: "TFR N/S Pad Size/V"

Eg: TFR6/SM

### TO Naming Convention

Structure: "TO# /N/V"

2k Description Structure: "TO# /N/e Pitch"

Eg: TO100/10, TO126/3

NB. Normally we will keep pitch for flat packages only and for Radial type if pitch is measurable.

### ZIP Naming Convention

Structure: "ZIPN/V"

2k Description Structure: "ZIPN/e Pitch"

Eg: ZIP16, ZIP20

### Miscellaneous Packages

Structure: "PMD N/V"

"SMD N/V"

2k Description Structure: "PMD N/e Pitch/V"

"SMD N/e Pitch/V"

Eg: PMD113

### Keyword Description

# - The standard number after the package name, eg: TO220, TO3, DO5 etc.

DS	- Discrete.
e	- Denotes the pitch in mils, if it is in millimeter suffix 'm' needs.
H	- Hole diameter.
L	- Distance between pins in discrete components.
M	- Indicates the Matrix in PGA, BGA, and LGA series.
N	- Total number of pins.
P	- Indicates the number of existing pins (ref App. B).
POL	- Polarized.
S	- Used for indicating the pad size of SMD in the form 'X-LENGTH x Y-LENGTH'.
SM	- Surface Mount
V	- Variations (ref. App. C).
W	- Width of Package (body width of the IC).

**Note:** *All dimensions are in mils unless otherwise specified.*

#### **Appendix - A**

For some non-discrete packages which comes both in PMD and SMD (eg: DIP, R, C, L etc.), add 'SM' in the SMD name before variations.

#### **Appendix - B**

If some pins are omitted in the package, we will put a prefix P (capital letter P) and number of existing pins in the package before variations.

Eg: SOIC28/P8

#### **Appendix -C**

Variation means any alternation in the package with respect to the Basic Package\* of that category, for example change in shape or number orientation, to be named as the name of Basic package followed by a suffix with Variations\*\* starting from A to Z.

#### **\*Basic Package**

Normally we will fix the first package, which is available in a particular category as the Basic Package. Any deviations from this package in later creation can be indicate by using Variations\*\* etc.

Basic Package Name can be defined by an example. Consider 300 mil wide DIP14 (EDWin suggested Name: DIP14/300). For this package pin no. is 14 and width of Package is 300 mils. So we will name this as DIP14/300 and assume it as the basic package. If a new DIP package in 14 pin comes but with a change from the package we have already

created, say in shape or pin orientation, we will name it as 'DIP14/300/A' where A is the variation.

\*\*The following letters are excluded from Variation list: - I,O

## Glossary

Matrix - The number of rows and columns in grid arrays in the form 'ROW x COLUMN'.

Pitch- Pin to pin spacing.

BGA	Ball Grid Array
CDIP	Ceramic Dual In Line Package
CLCC	Ceramic Leaded / Lead less Chip Carrier
CQFP	Ceramic Quad Flat Package
DIL	Dual In Line Package
DIP	Dual In Line Package
DO	Diode Outline
LCC	Leaded / Lead less Chip Carrier
LGA	Land Grid Array
MDIP	Molded Dual In Line Package
MSOP	Molded Small Outline Package
PDIP	Plastic Dual In Line Package
PGA	Pin Grid Array
PLCC	Plastic Leaded / Lead less Chip Carrier
PQFP	Plastic Quad Flat Package
QFP	Quad Flat Package
SDIP	Side Brazed Dual In Line Package
SIL	Single In Line Package
SIP	Single In Line Package
SOIC	Small Outline Integrated Circuit
SOJ	Small Outline J-Lead
SOP	Small Outline Package
SOT	Small Outline Transistor
SSOP	Shrunked Small Outline Package
TO	Transistor Outline
TQFP	Thin Quad Flat Package
TSOP	Thin Small Outline Package
TSSOP	Small Shrunked Outline Package

## Package Naming Conventions

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VSOP	Very Small Outline Package
ZDIP	Zigzag Dual In Line Package
ZIP	Zigzag In Line Package