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## Corporate names revised in the documents

On March 1st 2015, system LSI businesses of Fujitsu Limited and Panasonic Corporation have been consolidated and transferred to Socionext Inc.

The corporate names "Fujitsu Semiconductor Limited" and "Panasonic" all in this document have been revised to the "Socionext".

Thank you for your cooperation and understanding of this notice.

March 2, 2015

Socionext Inc.

http://www.socionext.com/en/

# Package Description

## (How Package Dimensions Are Indicated/Codes/Marking)

# 1.  How Package Dimensions Are Indicated

This section will use representative SOP package to explain the manner in which dimensions are indicated in the package outline dimension diagrams in this data book.

## 1.1    SOP dimensions



Mounting plane
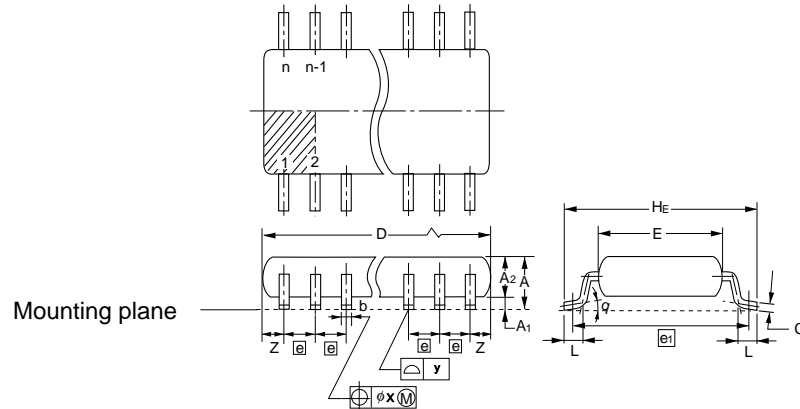
| Dimension name | Symbol | Explanation |
|---|---|---|
| Mounting height | A | Height from the mounting surface to the top of the package |
| Standoff height | $A_1$ | Distance between the mounting surface and the bottom of the package |
| Height of body | $A_2$ | Thickness of the package (height of the body) |
| Pin width | b | Width of the pin (width between 0.1 and 0.25 mm from the tip) |
| Pin thickness | c | Thickness of the pin |
| Package length | D | The longest dimension of the body of the package parallel to the mounting surface and excluding the pins; also include resin burrs |
| Package width | E | The width of the body of the package, excluding the pins |
| Pin linear spacing | $\boxed{e}$ | Linear spacing between the centers of the pins; also called the "lead pitch" |
| Call dimension | $\boxed{e_1}$ | Distance between the centers of the pads where the package is mounted; in the case of flat packages, there are generally four standard values:<br>TYPE I     : 5.72mm (225mil)<br>TYPE II    : 7.62mm (300mil)<br>TYPE III   : 9.53mm (375mil)<br>TYPE IV   : 11.43mm (450mil)<br>TYPE V    : 13.34mm (525mil)<br>TYPE VI   : 15.24mm (600mil) |
| Overall width | $H_E$ | Distance from the tip of one pin to the tip of the pin on the opposite side of the package |
| Length of flat portion of pin | L | Length of the flat portion of the pin that comes into contact with the mounting pad |
| Angle of flat portion of pin | θ | Angle formed by the mounting surface and the flat portion of the pin |
| Overhang | Z | Distance from the center position of an end pin to the end of the body of the package |
| Pin center tolerance | $\boxed{\oplus}$ $\boxed{\phi\mathbf{x}\,\circledM}$ | Shows the tolerance for the center position of the pin in the package outline diagram |
| Uniformity of pin bottoms | $\boxed{\bigtriangleup}$ $\boxed{y}$ | Shows the uniformity of the pin bottoms in the package outline diagram |

The information provided above is a simplified explanation. If you have inquiries concerning dimensions, confirm the "dimension name" shown in the preceding tables.

FUJITSU

# 2.  Package Codes

## 2.1   Fujitsu Code Labeling

Distinctions among package forms, number of pins, material, sealing method, etc., are shown as follows.



- (1)Form
- (2)Number of pins
- (3)Material
- (4)Sealing method
- (5)ID number
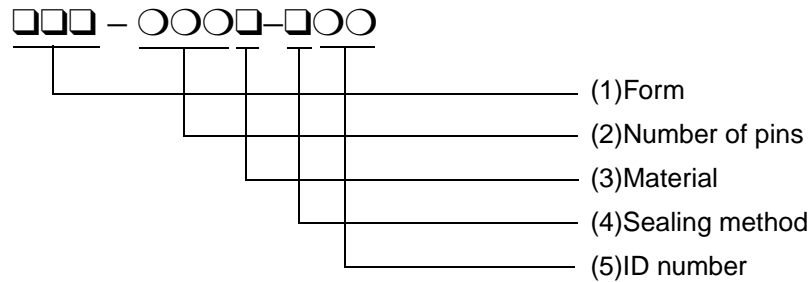
(1) Form: Indicates the form of the package. (three letters)

PGA: Indicates a PGA-type package

FPT: Indicates a flat-type package

LCC: Indicates an LCC-type package

BGA: Indicates a BGA-type package

(2) Number of pins: Indicates the number of pins.

(3) Material: Indicates the package material. (one letter)

P: Plastic

C: Ceramic

(4) Sealing method: Indicates the package sealing method. (one letter)

M: Plastic mold

A : Metal seal

F: Frit seal

C: Cerdip

(5) ID number: An ID number within the form. (two digits)
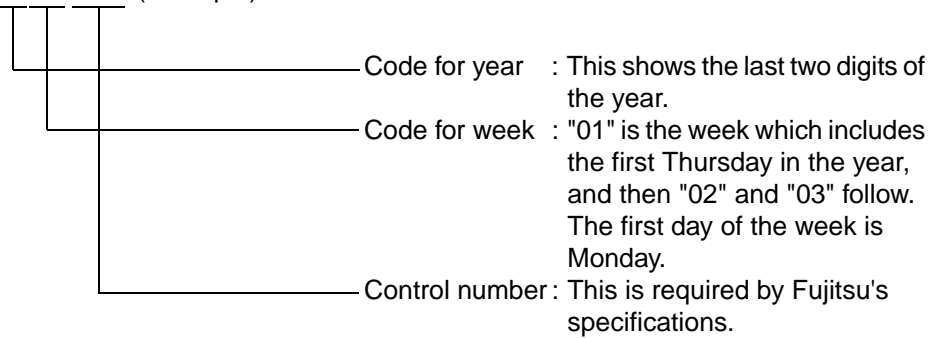
# 3. Marking

Marking includes Fujitsu's standard marking and customer-specified marking. Section 3.1 shows the format for standard marking. If customer-specified marking is desired, the customer should establish the marking specifications while observing the restrictions shown in section 3.2.

If any marking format other than those shown below is desired, consult with the Fujitsu sales representatives beforehand.
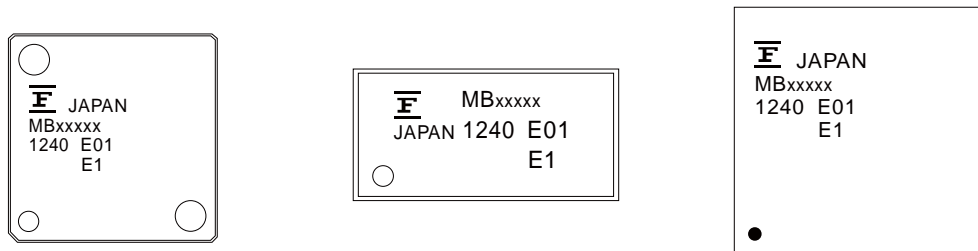
## 3.1 Standard marking

**(1) Information marked**

- $\overline{\mathbf{F}}$ ............................ Fujitsu's mark
- JAPAN ...................... Country of manufacture
- MBxxxxx .................. Fujitsu product name
- 1240 E01 (Example) ... Lot No.

Code for year : This shows the last two digits of the year.

Code for week : "01" is the week which includes the first Thursday in the year, and then "02" and "03" follow. The first day of the week is Monday.

Control number : This is required by Fujitsu's specifications.

- E1 (Example) ............... Lead-free indication (E1: Fujitsu's standard lead-free indication, E2: Special lead-free indication, etc.)

**(2) Standard marking (Marking layout)**



- The figures shown above are standard formats.
  Depending on products, the marking format may vary because of space, etc.
- The codes indicating year, week and control number are examples.

## 3.2 Customer-specified marking

Markings can be added or modified with customer specifications as shown below if desired for custom ICs, etc.; however, there are some restrictions.

(1) Addition

One line for the customer product name (Example customer part number) can be added to Fujitsu's standard marking format.
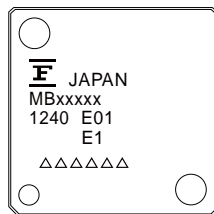


: Customer product name (Example part number)

(2) Modification

Fujitsu's mark can be replaced with the customer's company mark.
If required, the customer's company mark data must be submitted.

Notes

- The lot number is the control number required by Fujitsu's specifications, therefore, it cannot be omitted in principle.

- We recommend that any character or line thinner than 0.15mm is not used in order to prevent unclear printing.