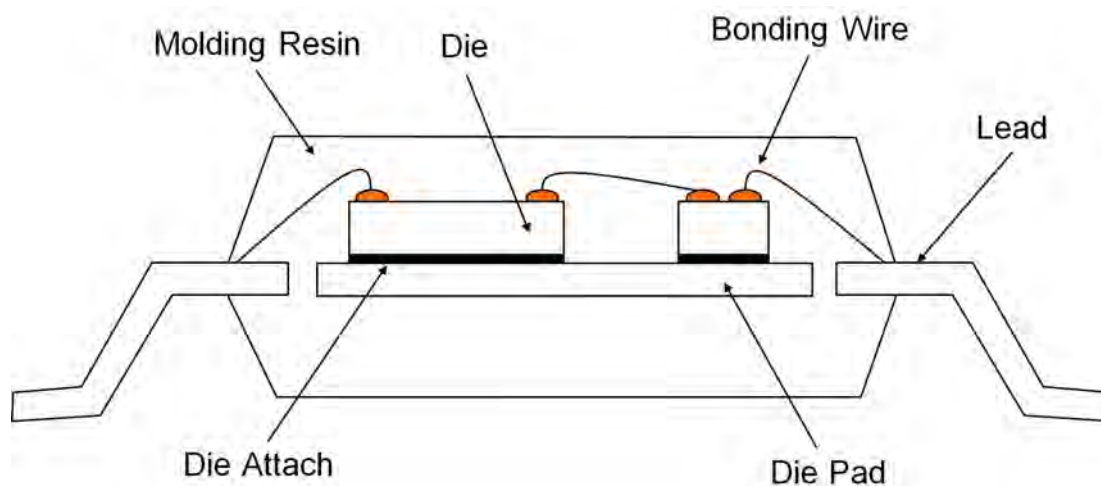


## 1. Package Information

|                    |          |
|--------------------|----------|
| Package Name       | SOP-J11  |
| Type               | SOP      |
| Pin Count          | 11       |
| Package Weight [g] | 0.12     |
| Lead Finish        | Pure Tin |
| MSL                | Level3   |

## 2. Package Structure



### 3. Packing Specification

#### 3.1 Packing form, Quantity, PIN1 Orientation

|                   |       |           |
|-------------------|-------|-----------|
| Packing Form      |       | Tape&Reel |
| Packing Quantity  | [pcs] | 2,500     |
| PIN 1 Orientation |       | E2        |

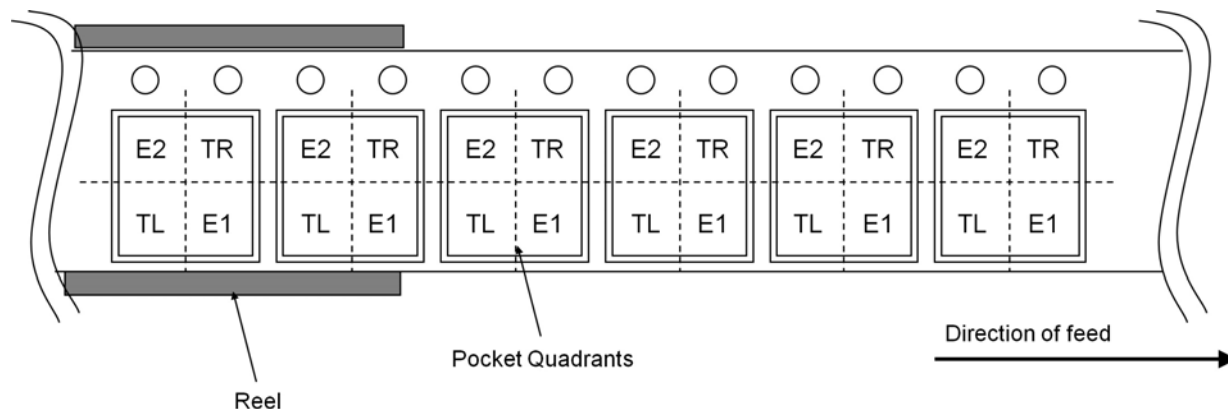


Fig.1 Quadrant Assignments for PIN 1 Orientation in Tape

E2 : PIN1 is placed to the top left corner.

TR : PIN1 is placed to the top right corner.

TL : PIN1 is placed to the lower left.

E1 : PIN1 is placed to the lower right.

#### 3.2 Use material

| Item                  | Material           |
|-----------------------|--------------------|
| Embossed carrier tape | PS                 |
| Cover tape            | PET+PE             |
| Reel                  | PS                 |
| Desiccant             | Clay               |
| Envelope              | Aluminum-laminated |
| Air cap               | PE                 |
| Unit box              | Cardboard          |
| Shipping box          | Cardboard          |

#### 3.3 Leader specification

No component pockets are 320 mm or more.

#### 3.4 Trailer specification

No component pockets are 80 mm or more. Tape is free from reel.

#### 3.5 Peelback strength

Cover tape peelback strength is 0.2 N to 0.7 N.

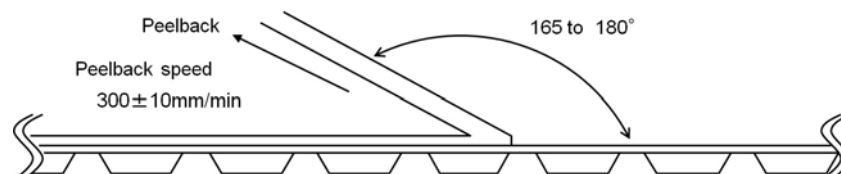


Fig. 2 Test method

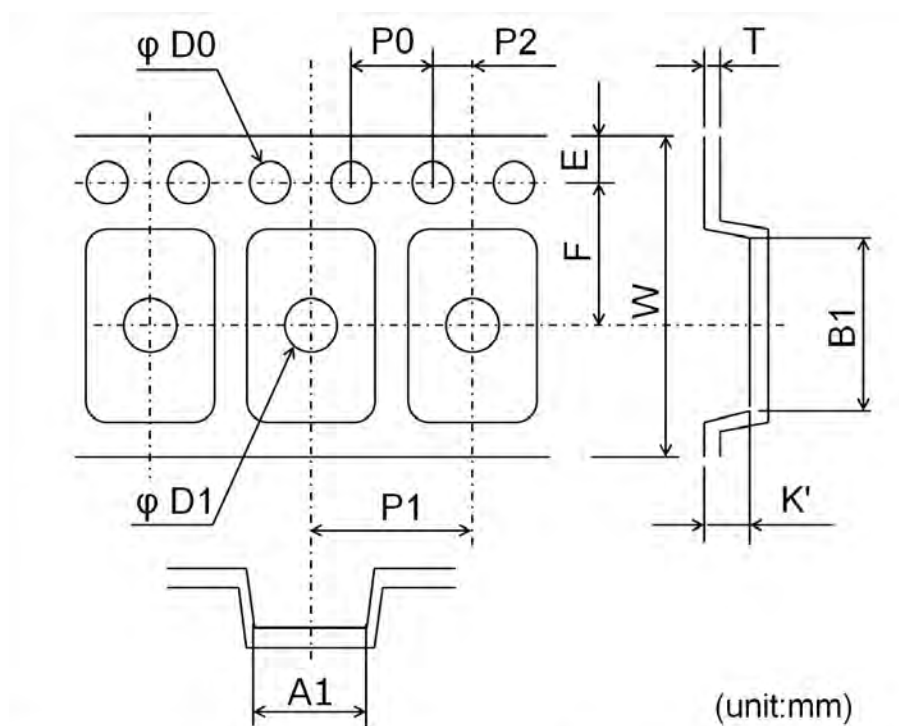
#### 3.6 Missing lcs

(1) No consecutive dropouts.

(2) A maximum 0.1 % of specified number of products in each packing may be missing.

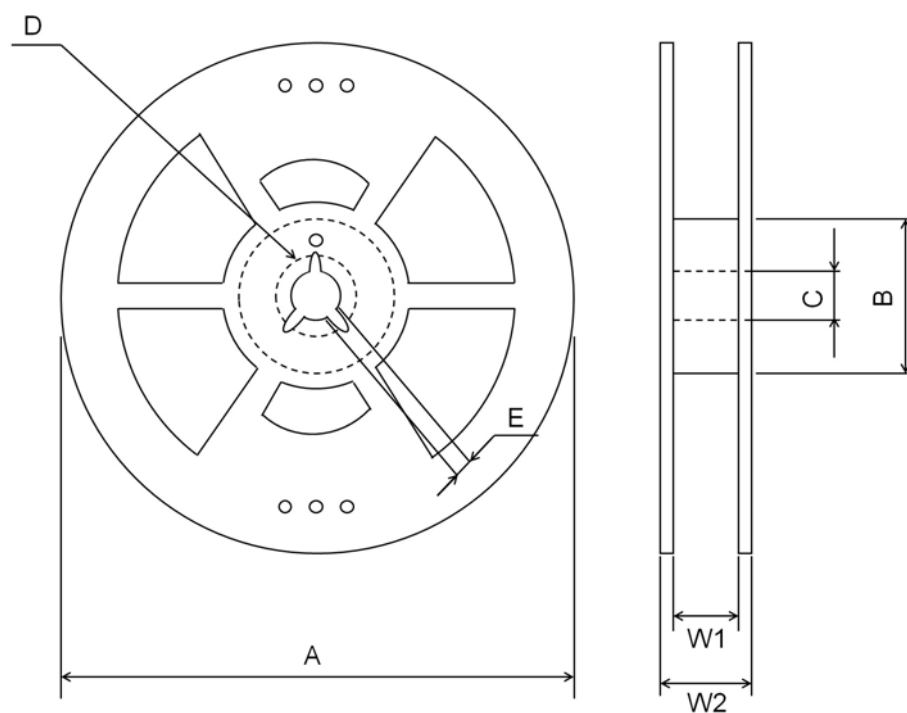
## 3.7 Tape and Reel Specification

## 3.7.1 Tape Dimension



|    | Tape Dimension | Tape Tolerance |
|----|----------------|----------------|
| A1 | 6.55           | ±0.1           |
| B1 | 9.15           | ±0.1           |
| D0 | φ1.5           | +0.1/-0        |
| D1 | φ1.5           | MIN            |
| E  | 1.75           | ±0.1           |
| F  | 7.50           | ±0.1           |
| K' | 1.80           | ±0.1           |
| P0 | 4.00           | ±0.1           |
| P1 | 8.00           | ±0.1           |
| P2 | 2.00           | ±0.1           |
| T  | 0.30           | -              |
| W  | 16.0           | ±0.3           |

## 3.7.2 Reel Dimension

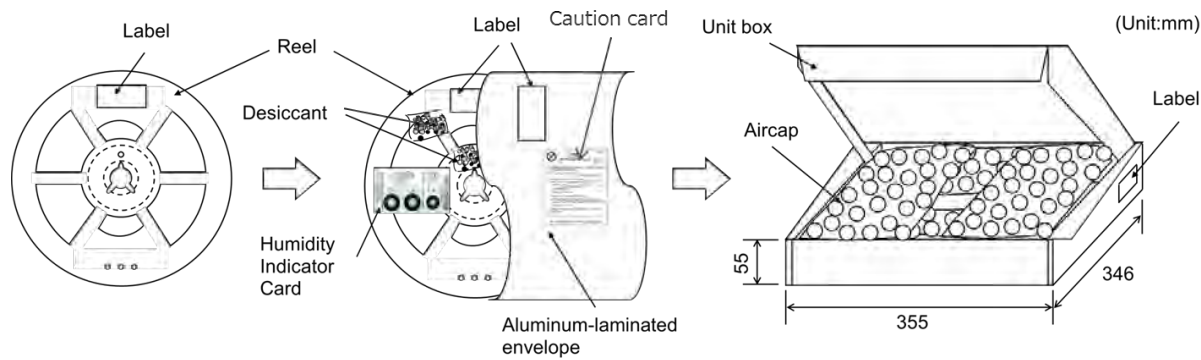


(unit:mm)

|    | Reel Dimension | Reel Tolerance |
|----|----------------|----------------|
| A  | 330            | ±2.0           |
| B  | 80             | ±1.0           |
| C  | 13             | ±0.2           |
| D  | 21             | ±0.8           |
| E  | 2              | ±0.5           |
| W1 | 17.5           | ±1.0           |
| W2 | 21.5           | ±1.0           |

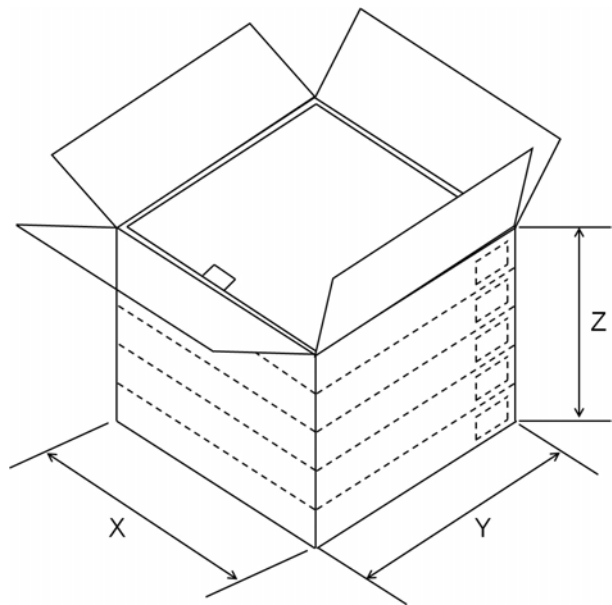
3.8 Packing Method

1 reel(s) or less per unit box



3.9 Packing Style

5 unit boxes or less per shipping box



(unit:mm)

| Shipping Box Dimension |     |
|------------------------|-----|
| X                      | 372 |
| Y                      | 368 |
| Z                      | 305 |

3.10 Label Specification



3.11 Caution card specification

Caution

This bag contains

MOISTURE-SENSITIVE DEVICES

LEVEL

If blank, see adjacent bar code label

1. Calculated shelf life in sealed bag: 72 months at <40°C and <90% relative humidity (RH)

2. Peak package body temperature: \_\_\_\_\_ °C  
If blank, see adjacent bar code label

3. After bag is opened, devices that will be subjected to reflow solder or other high temperature process must be

a) Mounted within: \_\_\_\_\_ hours of factory conditions  
If blank, see adjacent bar code label  
≤30°C/60% RH, or

b) Stored per J-STD-033

4. Devices require bake, before mounting, if:

a) Humidity Indicator Card reads >10% for level 2a - 5a devices or >60% for level 2 devices when read at 23 ± 5 °C

b) 3a or 3b are not met

5. If baking is required, refer to IPC/JEDEC J-STD-033 for bake procedure

Bag Seal Date: \_\_\_\_\_  
If blank, see adjacent bar code label

Note: Level and body temperature defined by IPC/JEDEC J-STD-020

Remark ) Standard item 1. calculated shelf life in caution card is not applied for MSL1 product.

3.12 Indicator card specification

HUMIDITY INDICATOR

Complies with IPC/JEDEC J-STD-033

LEVEL

2 PARTS

Bake parts if 60% is NOT blue

60%

Lot Number

LEVEL

2A-5A PARTS

Bake parts if 10% is NOT blue and 5% is pink

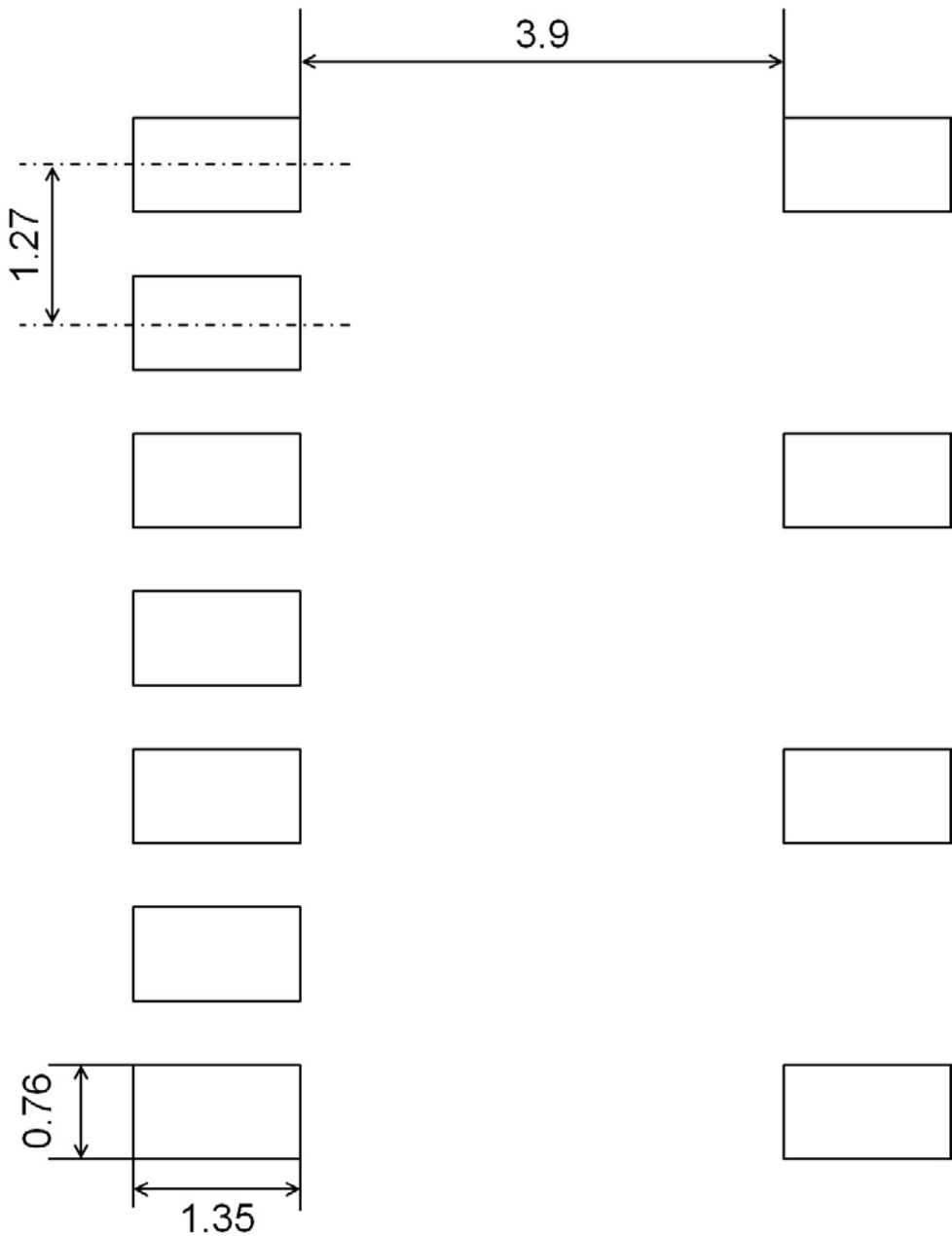
10%

Manufacturer Identification

5%

Do not put this card into a bag if 60% is pink

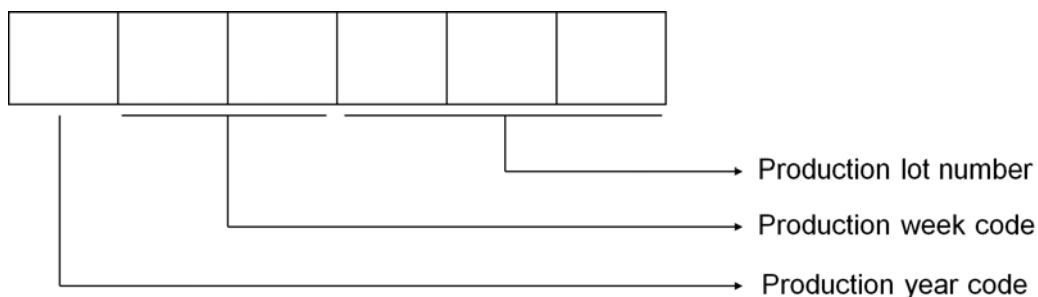
4. Footprint dimensions



(unit:mm)

In actual design, please optimize in accordance with the situation of your board design and soldering condition.

## 5. Marking Specification



## 6. Storage conditions

## 6.1 Storage environment

Recommended storage conditions

|             | Min. | Max. | Unit |
|-------------|------|------|------|
| Temperature | 5    | 30   | °C   |
| Humidity    | -    | 70   | % RH |

## 6.2 Storage period (Start to count since delivery date)

|                | Min. | Max. | Unit |
|----------------|------|------|------|
| Storage period | -    | 1    | year |

## 6.3 Specified storage period until soldering

|                 | Min. | Max. | Unit |
|-----------------|------|------|------|
| Acceptable time | -    | 168  | h    |

The above value is a time from opening the moisture-proof packaging until the soldering. Cases where it is necessary to perform the drying process is the following.

Case 1 : in excess of the above-mentioned "Acceptable time"

Case 2 : it has passed more than 6 years not open

Recommended the dry process conditions

|                            | Temperature [°C] | Time [h] |
|----------------------------|------------------|----------|
| Reel (Note1)               | 60               | 48       |
| Other Heat-proof container | 125              | 24       |

(Note1) When carrying out the dry process in a "Reel" state, the peelback strength will change. Please refer to the following values:

|                   | Min. | Max. | Unit |
|-------------------|------|------|------|
| Peelback strength | 0.2  | 0.9  | N    |

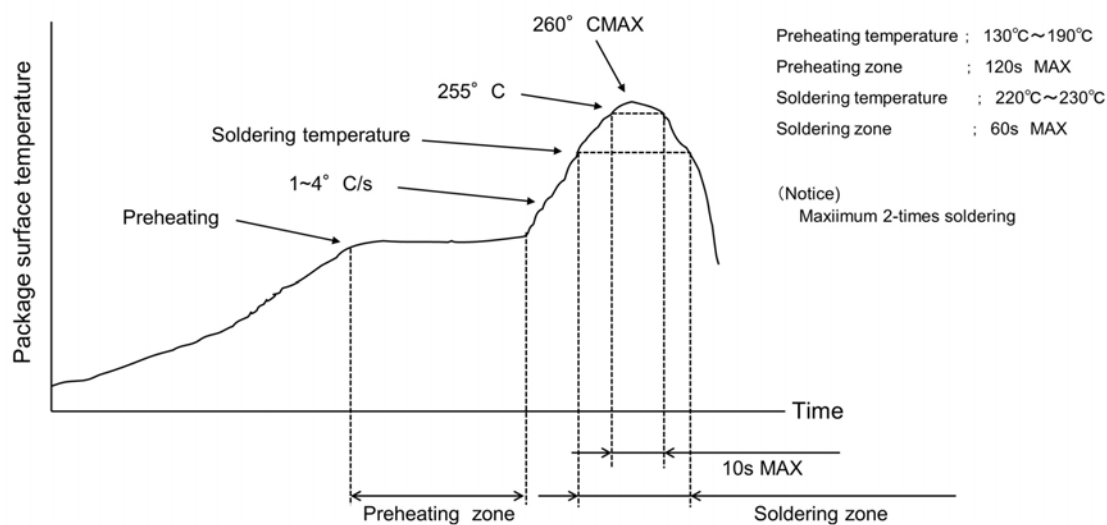
The drying process is the impact on the solderability because the oxidation of the terminal portion will occur. Therefore, specify the maximum times of the dry processing as follows:

Recommended execution count of the dry process

|                            | Min. | Max. | Unit  |
|----------------------------|------|------|-------|
| Reel                       |      | 1    | times |
| Other Heat-proof container |      | 2    | times |

## 7. Soldering conditions

## 7.1 Recommended temperature profile for reflow



## 7.2 Recommended condition for wave soldering

|                        |   |                  |
|------------------------|---|------------------|
| Preheating temperature | : | 120 °C to 150 °C |
| Preheating time        | : | 60 s MAX         |
| Soldering temperature  | : | 260 °C ± 3 °C    |
| Soldering time         | : | 12 s MAX         |

## Notes for wave soldering

- (1) Soldering time is provided for total soldering time in case of dual wave soldering.
- (2) Do not use other soldering methods with wave soldering.
- (3) Recommend to clean the board to eliminate flux, solder waste, and other impurities for reliability, after soldering.
- (4) Optimize soldering condition to prevent solder bridging.

## 7.3 Recommended condition for solder iron

|                         |   |                |
|-------------------------|---|----------------|
| Solder iron temperature | : | 380 °C or less |
| Mounting time           | : | 4 s or less    |

## Notes for solder iron

- (1) Solder mounting time is the time per 1 lead

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