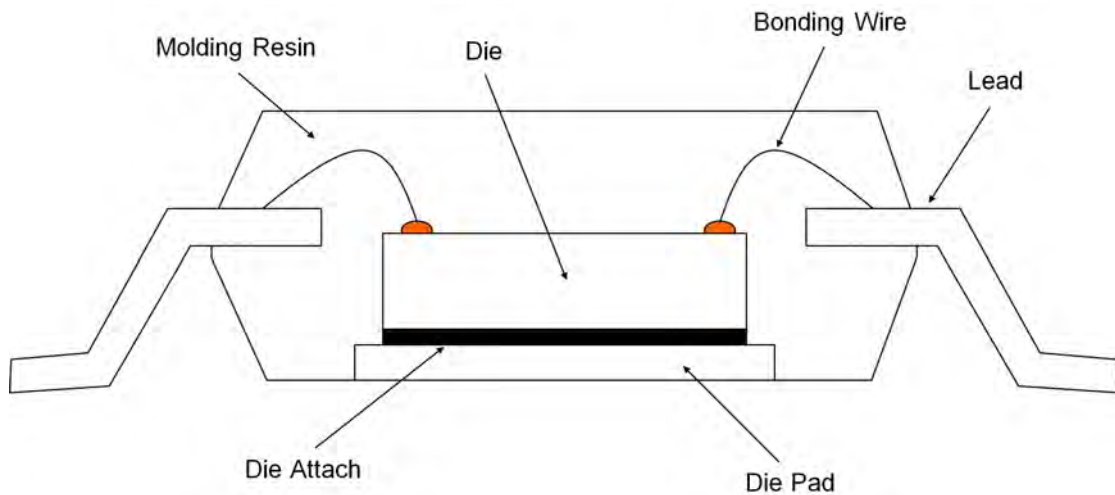


## 1. Package Information

|                    |            |
|--------------------|------------|
| Package Name       | HTSSOP-B24 |
| Type               | SOP        |
| Pin Count          | 24         |
| 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] | 2,000     |
| PIN 1 Orientation |       | E2        |

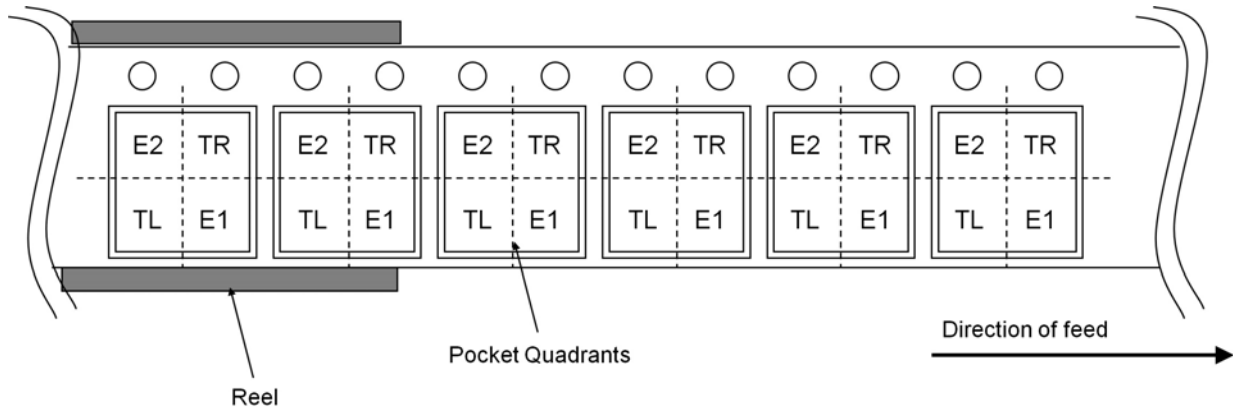


Fig.1 Quadrant Assignments for PIN 1 Orientation in Tape

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 480 mm or more.

3.4 Trailer specification

No component pockets are 120 mm or more. Tape is free from reel.

3.5 Peelback strength

Cover tape peelback strength is 0.2 N to 0.7 N.

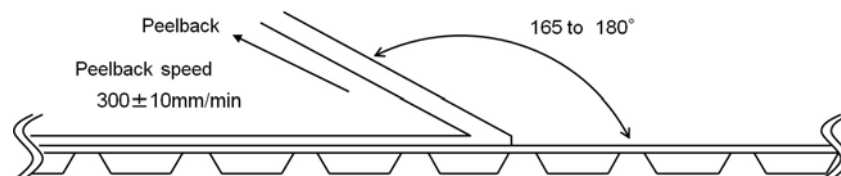


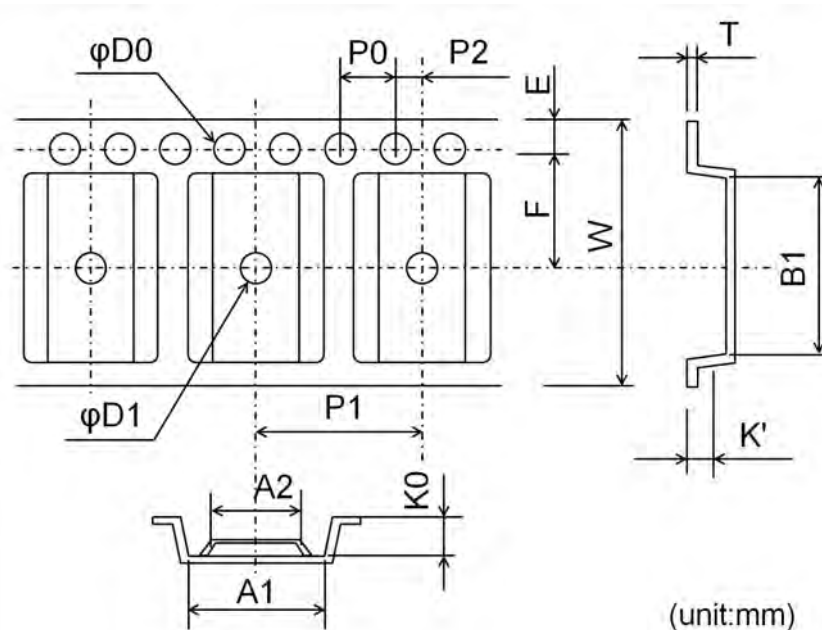
Fig. 2 Test method

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 | 8.20           | ±0.1           |
| A2 | 5.50           | ±0.05          |
| B1 | 8.4            | ±0.1           |
| D0 | φ1.5           | +0.1/-0        |
| D1 | φ1.5           | +0.1/-0        |
| E  | 1.75           | ±0.1           |
| F  | 7.50           | ±0.1           |
| K' | 1.20           | ±0.1           |
| K0 | 1.50           | ±0.1           |
| P0 | 4.00           | ±0.1           |
| P1 | 12.0           | ±0.1           |
| P2 | 2.00           | ±0.1           |
| T  | 0.30           | ±0.05          |
| W  | 16.0           | ±0.3           |

3.7.2 Reel Dimension

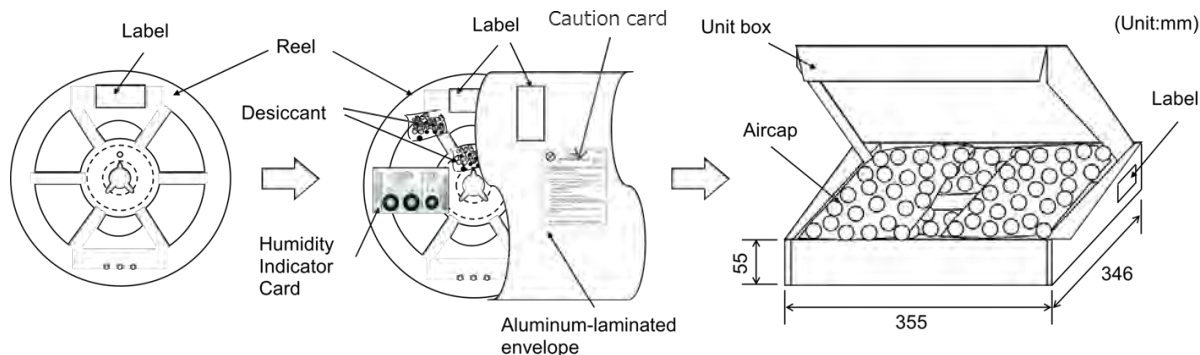


(unit:mm)

|    | 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           |

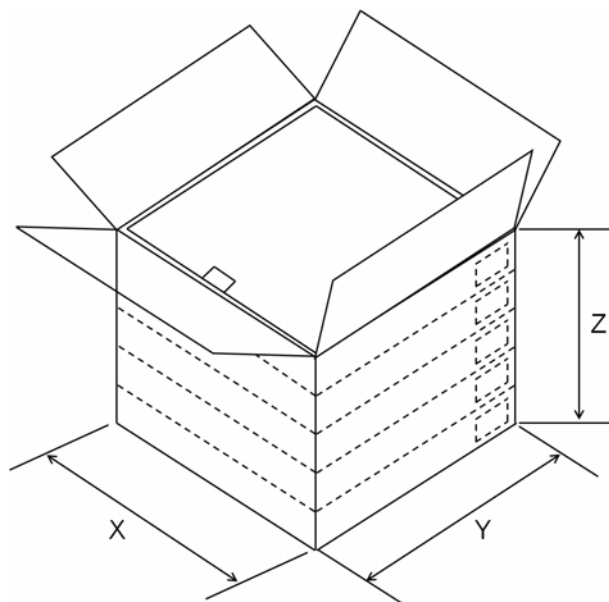
3.8 Packing Method

1 reel(s) or less per unit box



3.9 Packing Style

5 unit boxes or less per shipping box



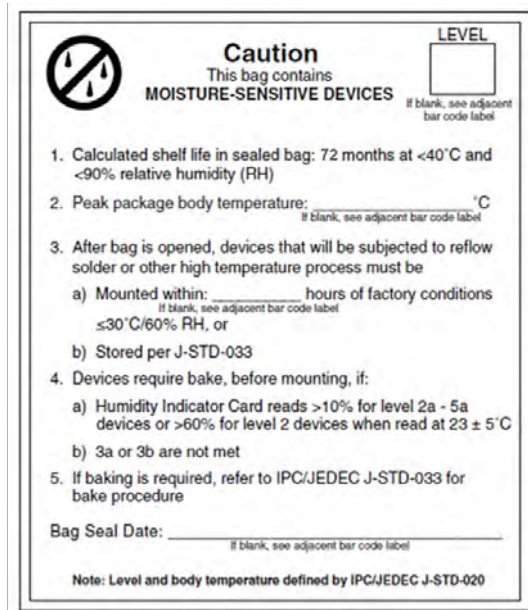
(unit:mm)

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

3.10 Label Specification

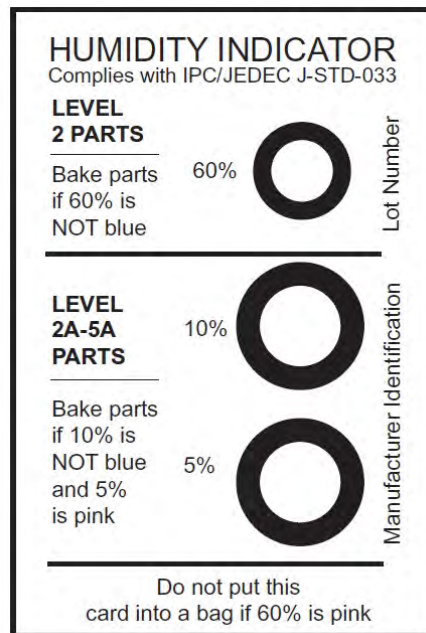


3.11 Caution card specification

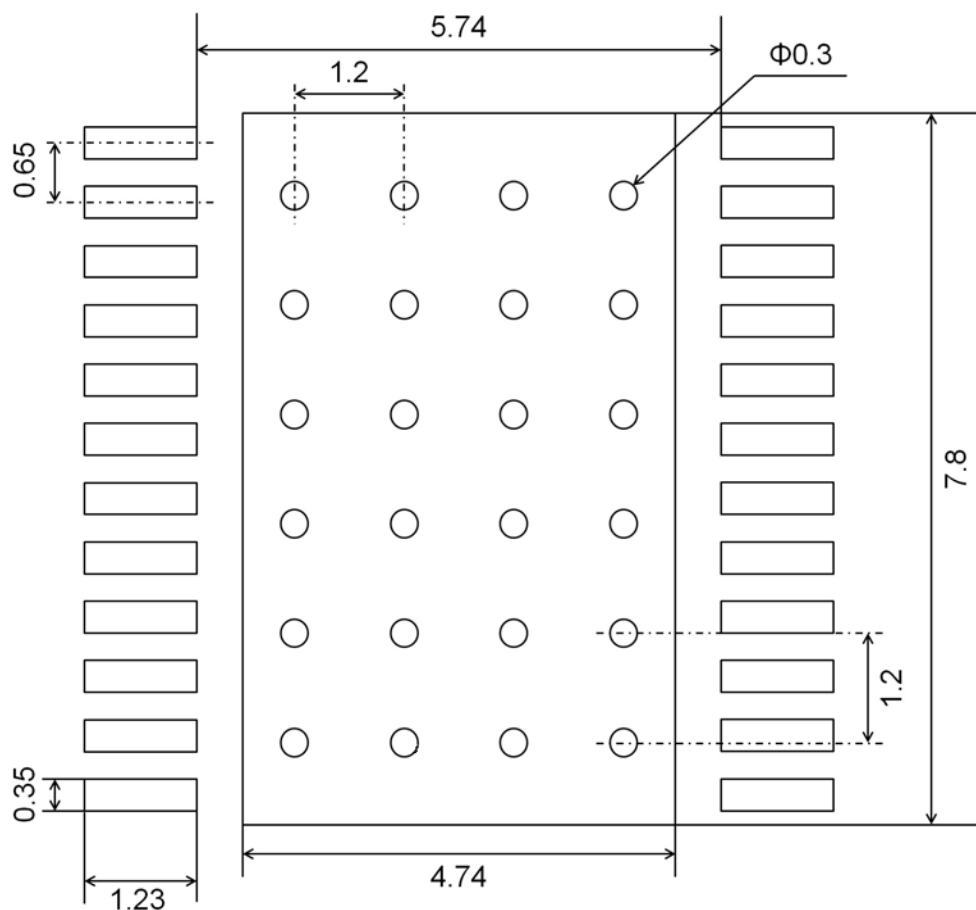


Remark ) Standard item 1. calculated shelf life in caution card is not applied for MSL1 product.

3.12 Indicator card specification



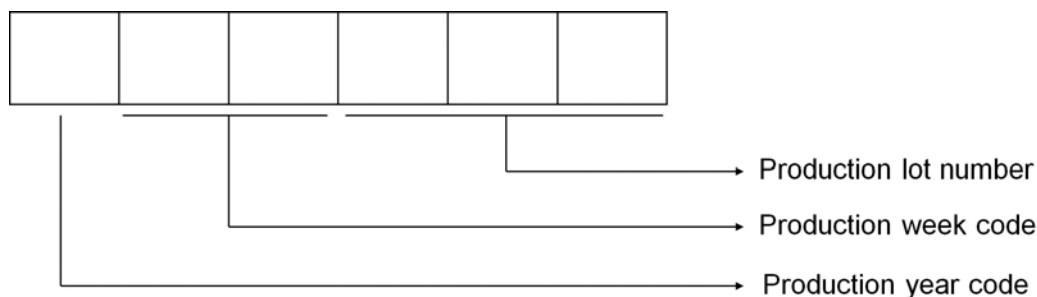
4. Footprint dimensions



(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 <i>(Note1)</i>        | 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:

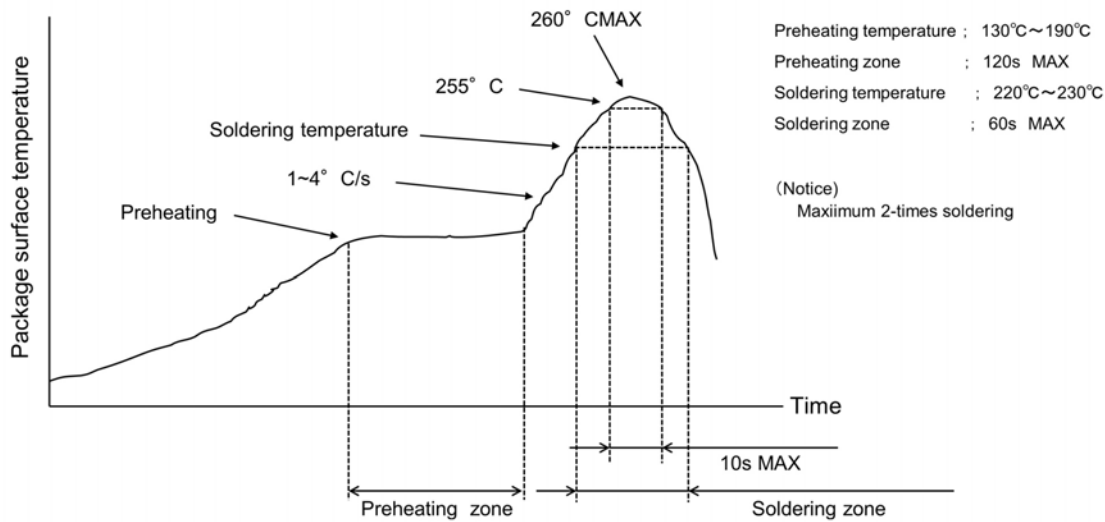
Recommended execution count of the dry process

|                            |   | 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.
- (5) The heatsink may not be connected using wave soldering methods.

## 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) The heatsink may not be connected using solder iron.
- (2) Solder mounting time is the time per 1 lead

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