

Package : VCSP50L1

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1. Structure and materials

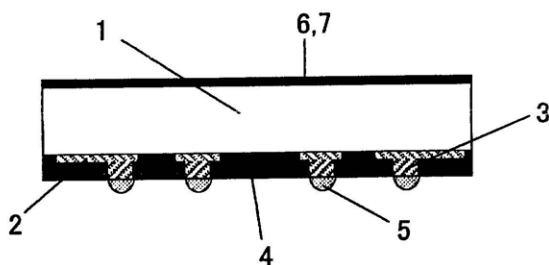


Fig. 1 Structure

| No. | Item | Materials |
|-----|---------------|-----------------------|
| ① | Die | Silicon |
| ② | Cu Layer | Cu |
| ③ | Cu Post | Cu |
| ④ | Encapsulation | Epoxy Resin |
| ⑤ | Ext. terminal | Sn-3Ag-0.5Cu Solder |
| ⑥ | Encapsulation | Polyamide-imide Resin |
| ⑦ | Marking | Laser Marking |

Dehydrated weight : 0.001g

2. Tape and Reel information

2. 1. Packing specification

| | |
|-------------------|-----------------------|
| Tape | Embossed carrier tape |
| Quantity | 3,000pcs/Reel |
| Direction of feed | E2 (See Fig. 2) |

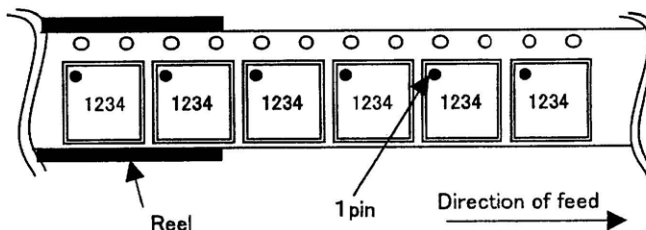
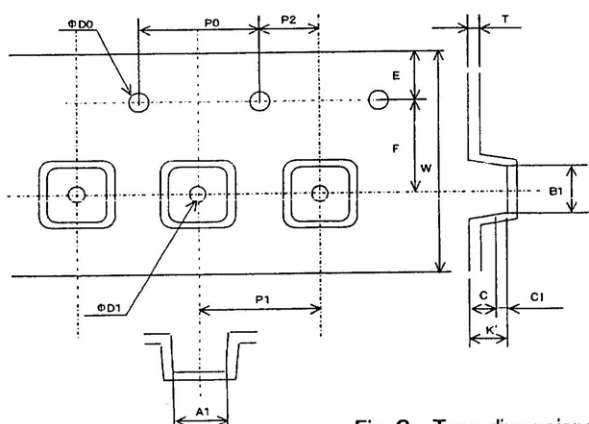


Fig. 2 Typical Tape and Reel configuration

2. 2. Tape and Reel specification

2. 2. 1. Tape and reel dimensions (See the table on page 2/4)



(Tape dimensions)

| A1 | B1 | C | C1 | D0 | D1 | E | F | K' | P0 | P1 | P2 | T | W |
|--------------|--------------|--------|--------|--------------------|--------------|--------------|-------------|-------------|-------------|-------------|-------------|---------------|-------------|
| 1.29 ±0.1 | 1.29 ±0.1 | (0.55) | (0.25) | Φ1.5 +0.1 -0 | Φ0.4 ±0.1 | 1.75 ±0.1 | 3.5 ±0.1 | 0.8 ±0.1 | 4.0 ±0.1 | 4.0 ±0.1 | 2.0 ±0.1 | 0.25 ±0.05 | 8.0 ±0.3 |

(Reel dimensions)

| A | B | C | D | E | W1 | W2 |
|------|-----------|--------------|-------------|------------|-------------|--------------|
| Φ180 | 50 MIN | 13.0 ±0.2 | 20.2 MIN | 1.5 MIN | 9.4 ±1.0 | 13.4 ±1.0 |

2. 3. Leader and Trailer

2. 3. 1. Leader

No component pockets are 40 pockets or more.

2. 3. 2. Trailer

No component pockets are 10 pockets or more.

Tape is free from reel.

2. 4. Label for Reel and Box

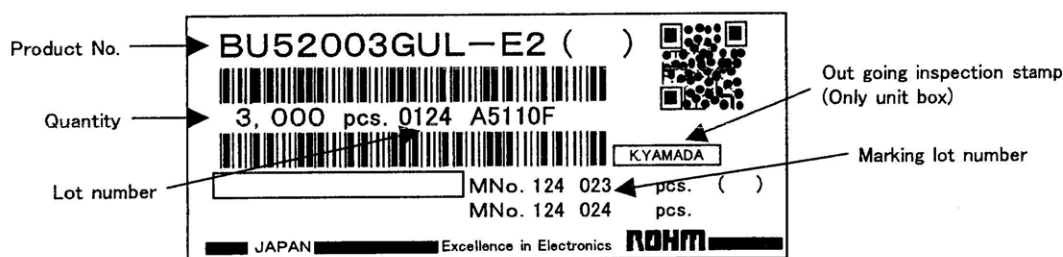


Fig. 5 Label example

2. 5. Packing style

4 reels or less per inner box.

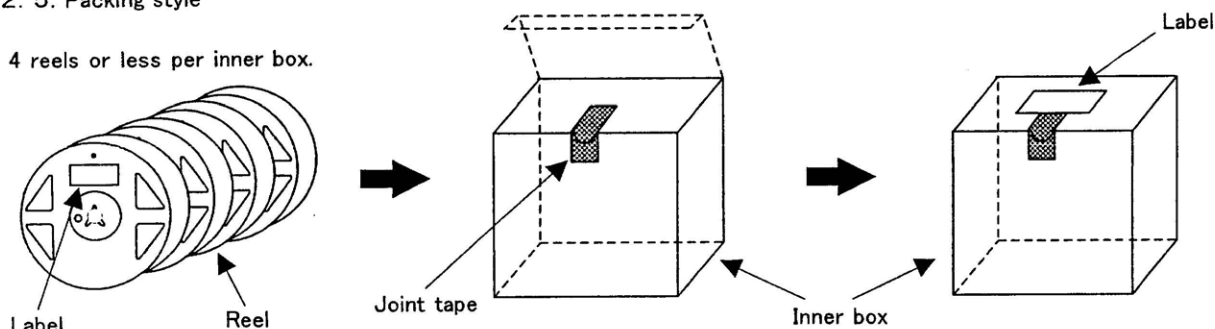


Fig. 6 Packing style

2. 6. Shipping style

4 unit boxes or less per shipping box.

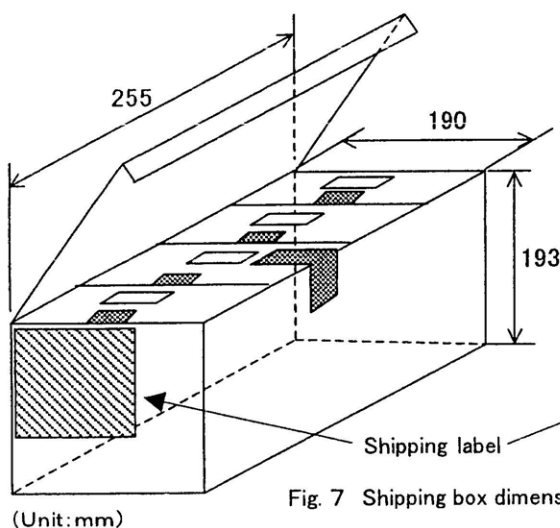
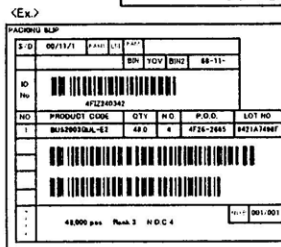


Fig. 7 Shipping box dimensions and shipping style

2. 7. Packing materials

| Item | Material |
|-----------------------|-----------|
| Embossed carrier tape | PS |
| Cover tape | PET + PE |
| Reel | PS |
| Unit box | Cardboard |
| Shipping box | Cardboard |



2. 8. Others

2. 8. 1. Peelback strength

Cover tape peelback strength is 0.2~0.7N.

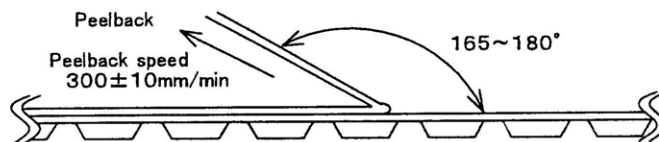


Fig. 8 Test method

2. 8. 2. Dropouts

(1) No consecutive dropouts.

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

3. Storage conditions

3. 1. Storage environment

Recommended storage conditions are as follows :

- Temperature : 5~30°C
- Humidity : 40~70% RH

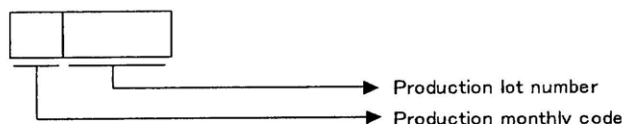
3. 2. Storage period

— Specified storage period : 1 year

3. 3. Specified storage period until soldering

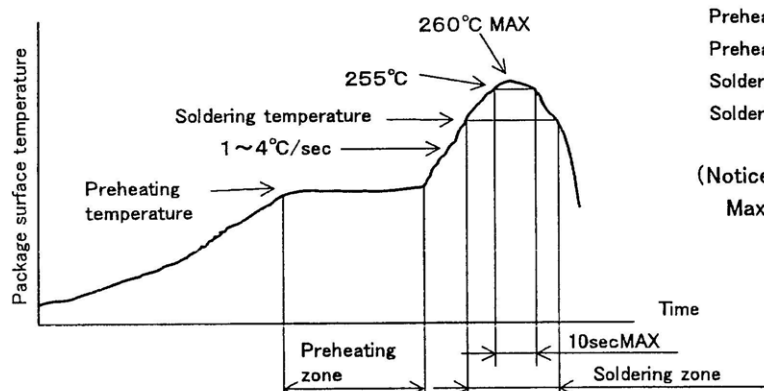
This package does not require additional drying treatment as long as the moisture condition at the mounting process is within our recommended mounting condition.

4. Marking lot number



5. Soldering conditions

5. 1. Recommended temperature profile for reflow



- Preheating temperature ; 130°C~190°C
- Preheating zone ; 120sec MAX
- Soldering temperature ; 220°C~230°C
- Soldering zone ; 60sec MAX

(Notice)

Maximum 2-times soldering

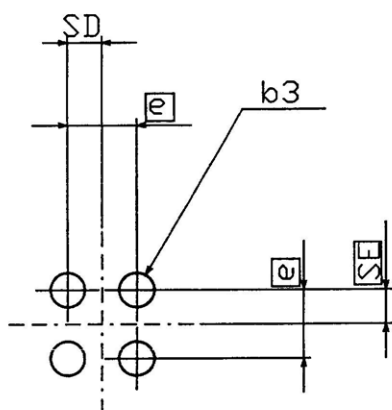
5. 2. About mounting with Sn-Pb solder paste.

Mounting with Sn-Pb solder paste is not recommended because it has a possibility of reducing reliability to connect with Sn-3.0Ag-0.5Cu solder balls.

5. 3. The wave soldering method is not supported.

5. 4. Partial heat supply method (by soldering iron) is not supported.

6. Footprint dimensions (Optimize footprint dimensions to the board design and soldering condition)



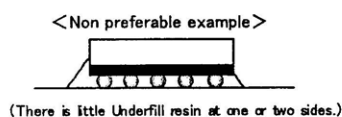
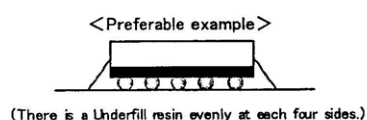
| Symbol | Reference Value |
|--------|-----------------|
| e | 0.50 |
| b3 | 0.25 |
| SD | 0.25 |
| SE | 0.25 |

(Unit: mm)

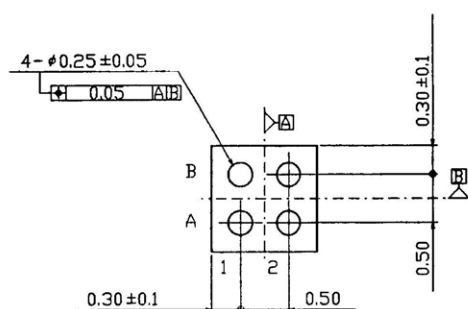
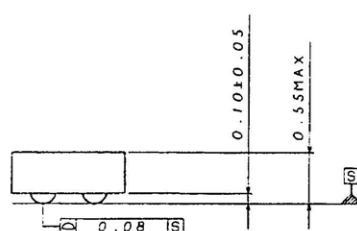
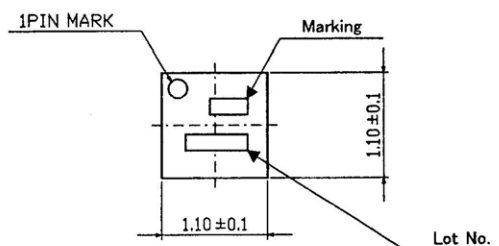
7. Regarding the underfill material

There are some cases that the underfill material is applied as purpose to reinforce the soldered junction of the package. Since the mount reliability depends on the resin material or coating condition, it may deteriorate on the contrary. Therefore, it is necessary to evaluate it sufficiently for its application.

In term of the coating condition, it is preferable that there is an enough material beyond the each four sides of a package.



8. External dimintions



| Part No. | Marking |
|------------|---------|
| BU52001GUL | HA |
| BU52002GUL | HB |
| BU52003GUL | HC |
| BU52004GUL | HD |

(Unit: mm)

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