

- Jisso Information -

**Package : HTSSOP-B**

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**1. Structure**

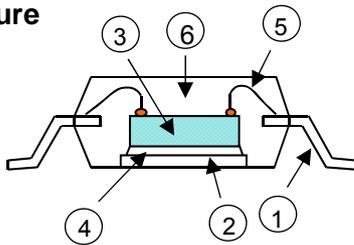


Fig. 1 Structure

No.	Compositional element
①	Lead (External lead : Pb free solder plating)
②	Die Pad
③	Die
④	Die Attach
⑤	Bonding Wire
⑥	Molding Resin

**2. Tape and Reel information**

2. 1. Packing specification

Tape	Embossed carrier tape(with dry pack)
Quantity	See the table on page 4/4
Direction of feed	E2 (See Fig. 2)

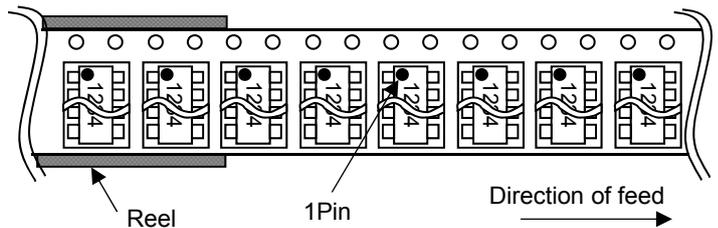


Fig. 2 Typical Tape and Reel configuration

2. 2. Tape and Reel specification

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

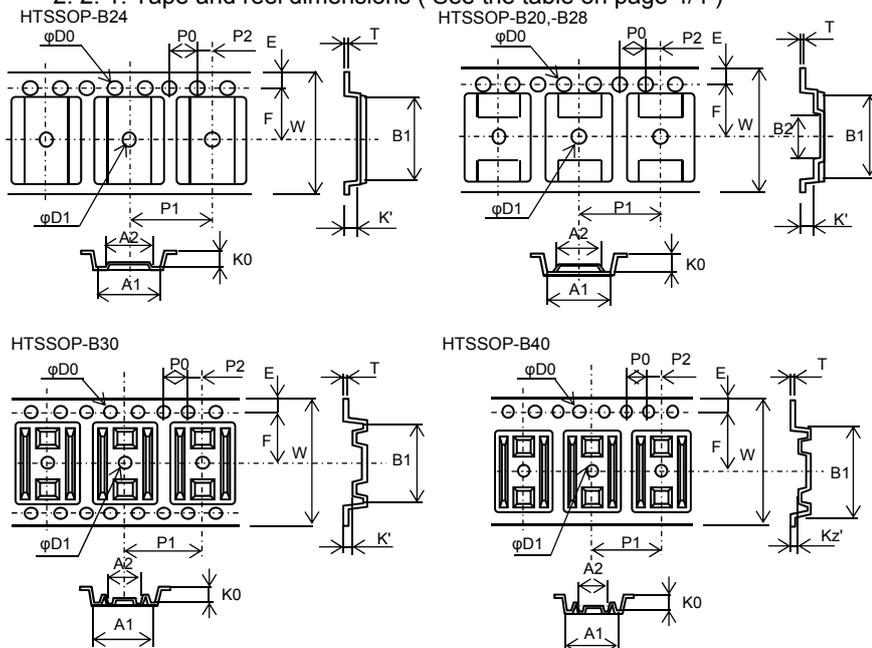


Fig. 3 Tape dimensions

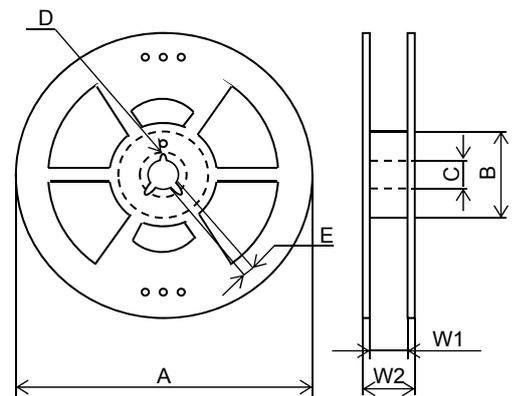


Fig. 4 Reel dimensions

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

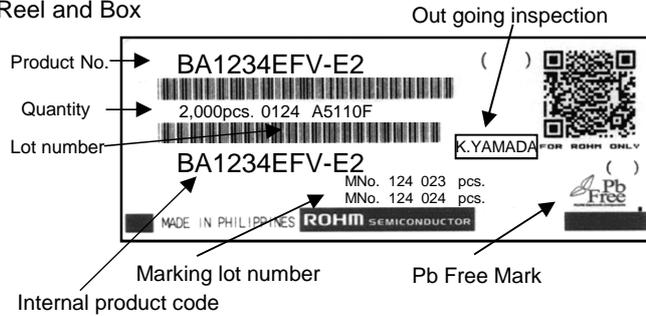


Fig. 5 Label example

2. 5. Packing style

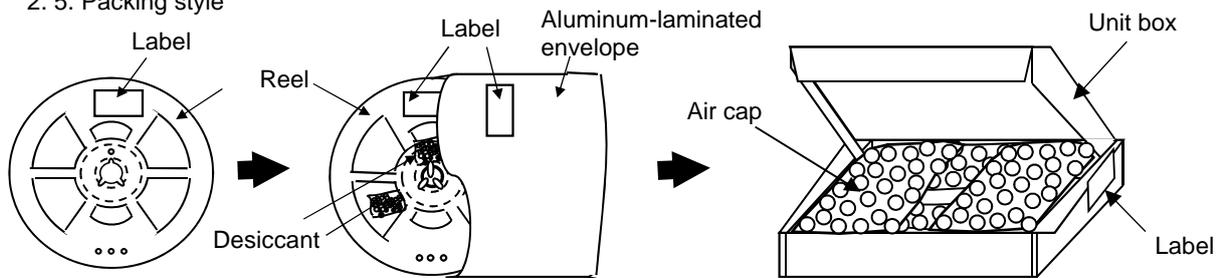
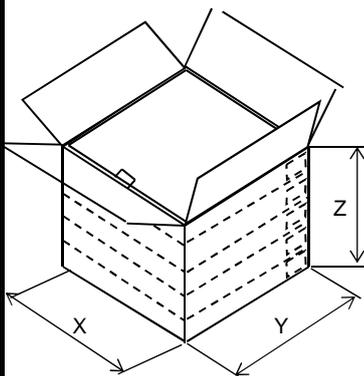


Fig. 6 Packing style

2. 6. Shipping style

5 unit boxes or less per shipping box



Package	box dimensions (all dimensions in mm)		
	X	Y	Z
HTSSOP-B20	372	368	305
HTSSOP-B24	372	368	305
HTSSOP-B28	372	368	305
HTSSOP-B30	372	368	305
HTSSOP-B40	372	368	355

2. 7. Packing materials

Item	Material
Embossed carrier tape	PS
Cover tape	PET + PE
Reel	PS
Desiccant	Silicagel
Envelope	Aluminume-laminated
Air cap	Polyethylene
Unit box	Cardboard
Shipping box	Cardboard

•Please obey the indication of top side in a shipping box.

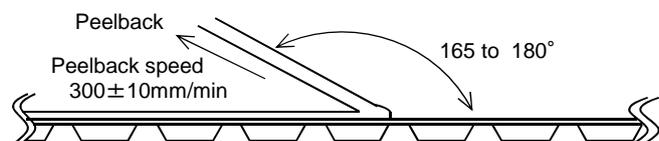
Fig. 7 Shipping box dimensions and Shipping style

2. 8. Others

2. 8. 1. Peelback strength

Cover tape peelback strength is 0.2 to 0.7N.

Fig. 8 Test method



2. 8. 2. Missing lcs

- (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 to 30°C
- Humidity : 40 to 70% RH

3. 2. Storage period

-Specified storage period : 1 year

3.3. Specified storage period until soldering

After dry pack is opened , assemble package within 168hours.

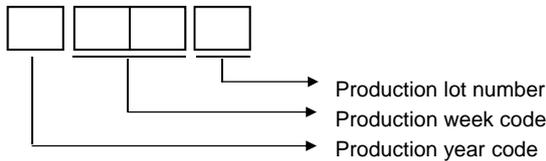
If the storage period has expired , the products must be baked 125°C for 24hours.

Maximum 2times baking for keeping solderability.

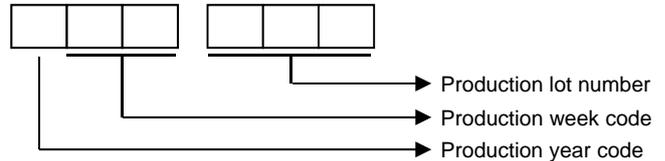
Execute baking by 60°C/48hours while put in the embossed tape.

**4. Marking lot number**

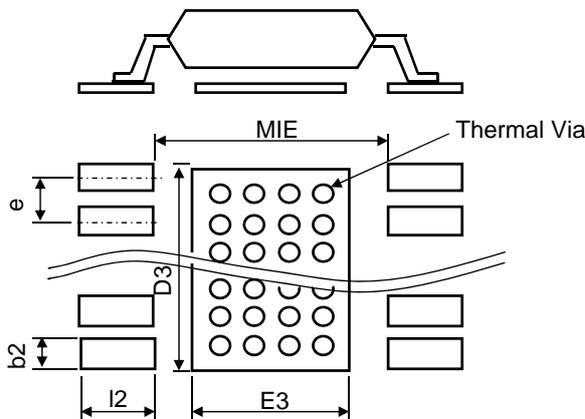
HTSSOP-B20



HTSSOP-B24,HTSSOP-B28,HTSSOP-B30,HTSSOP-B40



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



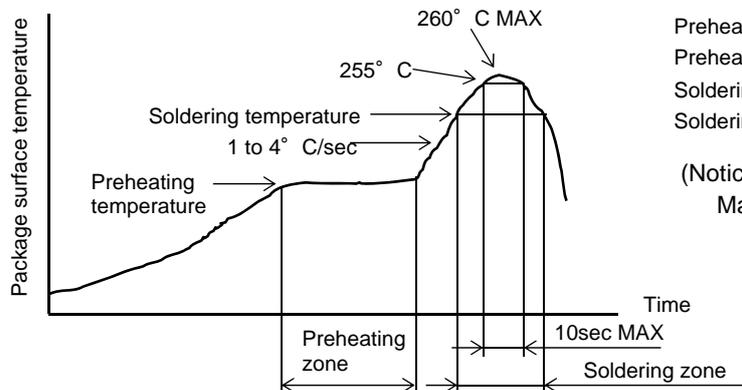
(all dimensions in mm)

Package	Land pitch e	Land space MIE	Land length $\geq 12$	Land width b2
HTSSOP-B20	0.65	4.60	1.20	0.35
HTSSOP-B24	0.65	5.74	1.23	0.35
HTSSOP-B28	0.65	4.60	1.20	0.35
HTSSOP-B30	0.65	5.80	1.20	0.35
HTSSOP-B40	0.65	6.00	1.20	0.35

Package	Radiation land length D3	Radiation land width E3	Thermal via	
			Pitch	Diameter
HTSSOP-B20	6.50	3.60	1.20	$\phi 0.3$
HTSSOP-B24	7.80	4.74	1.20	$\phi 0.3$
HTSSOP-B28	9.70	3.60	1.20	$\phi 0.3$
HTSSOP-B30	10.00	4.80	1.20	$\phi 0.3$
HTSSOP-B40	13.60	5.00	1.20	$\phi 0.3$

**6. Soldering conditions**

6. 1. Recommended temperature profile for reflow



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

(Notice)  
Maximum 2-times soldering

6. 2. Recommended condition for wave soldering

Process	Conditions	
	Temperature	Time
Preheating	120° C to 150° C	60sec MAX
Soldering	260° C ± 3° C	12sec MAX

(Notice) Soldering time is provided for total soldering time in case of dual wave soldering.

6. 2. 1. Notes for wave soldering

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

6. 3. Recommended condition for solder iron

Recommended condition for solder iron

-Solder iron temperature : 380°C or less

-Mounting time : 4sec or less

(Notice) The heatsink may not be connected using solder iron.

< Tape dimensions >

Package	Quantity (pcs)	Tape dimensions (all dimensions in mm)														
		A1	A2	B1	B2	D0	D1	E	F	K'	K0	P1	P2	T	W	P0
HTSSOP-B20	2500	6.7	(4.0)	6.9	(3.2)	φ1.5	φ1.5	1.75	5.5	1.25	1.65	8.0	2.0	0.3	12.0	4.0
HTSSOP-B24	2000	8.2	(5.5)	8.4	—	φ1.5	φ1.5	1.75	7.5	1.2	1.5	12.0	2.0	0.3	16.0	4.0
HTSSOP-B28	2500	6.8	(4.0)	10.3	(6.0)	φ1.5	φ1.5	1.75	7.5	1.15	1.65	8.0	2.0	0.3	16.0	4.0
HTSSOP-B30	2000	8.3	5.35	10.6	—	φ1.5	φ1.5	1.75	7.5	1.0	1.65	12.0	2.0	0.3	16.0	4.0
HTSSOP-B40	2000	8.5	(3.0)	14.2	(6.0)	φ1.5	φ2.0	1.75	11.5	0.85	1.50	12.0	2.0	0.3	24.0	4.0
Tolerance		±0.1	±0.05	±0.1	-	<sup>+0.1</sup> <sub>-0</sub>	<sup>+0.1</sup> <sub>-0</sub>	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.05	±0.3	±0.1

< Reel dimensions >

Package	Reel dimensions (all dimensions in mm)							
	A	B	C	D	E	W1	W2	
HTSSOP-B20	φ330	φ80	φ13.0	φ21.0	2.0	13.5	17.5	
HTSSOP-B24	φ330	φ80	φ13.0	φ21.0	2.0	17.5	21.5	
HTSSOP-B28	φ330	φ80	φ13.0	φ21.0	2.0	17.5	21.5	
HTSSOP-B30	φ330	φ80	φ13.0	φ21.0	2.0	17.5	21.5	
HTSSOP-B40	φ330	φ80	φ13.0	φ21.0	2.0	25.5	29.5	
Tolerance		±2.0	±1.0	±0.2	±0.8	±0.5	±1.0	±1.0

< Dehydrated weight >

Dehydrated weight dimensions in g
0.08
0.12
0.12
0.15
0.20

# Notice

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- Our Products are designed and manufactured for application in ordinary electronic equipments (such as AV equipment, OA equipment, telecommunication equipment, home electronic appliances, amusement equipment, etc.). If you intend to use our Products in devices requiring extremely high reliability (such as medical equipment <sup>(Note 1)</sup>, transport equipment, traffic equipment, aircraft/spacecraft, nuclear power controllers, fuel controllers, car equipment including car accessories, safety devices, etc.) and whose malfunction or failure may cause loss of human life, bodily injury or serious damage to property ("Specific Applications"), please consult with the ROHM sales representative in advance. Unless otherwise agreed in writing by ROHM in advance, ROHM shall not be in any way responsible or liable for any damages, expenses or losses incurred by you or third parties arising from the use of any ROHM's Products for Specific Applications.

(Note1) Medical Equipment Classification of the Specific Applications

JAPAN	USA	EU	CHINA
CLASS III	CLASS III	CLASS II b	CLASS III
CLASS IV		CLASS III	

- ROHM designs and manufactures its Products subject to strict quality control system. However, semiconductor products can fail or malfunction at a certain rate. Please be sure to implement, at your own responsibilities, adequate safety measures including but not limited to fail-safe design against the physical injury, damage to any property, which a failure or malfunction of our Products may cause. The following are examples of safety measures:
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  - Installation of redundant circuits to reduce the impact of single or multiple circuit failure
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  - Use of our Products outdoors or in places where the Products are exposed to direct sunlight or dust
  - Use of our Products in places where the Products are exposed to sea wind or corrosive gases, including Cl<sub>2</sub>, H<sub>2</sub>S, NH<sub>3</sub>, SO<sub>2</sub>, and NO<sub>2</sub>
  - Use of our Products in places where the Products are exposed to static electricity or electromagnetic waves
  - Use of our Products in proximity to heat-producing components, plastic cords, or other flammable items
  - Sealing or coating our Products with resin or other coating materials
  - Use of our Products without cleaning residue of flux (even if you use no-clean type fluxes, cleaning residue of flux is recommended); or Washing our Products by using water or water-soluble cleaning agents for cleaning residue after soldering
  - Use of the Products in places subject to dew condensation
- The Products are not subject to radiation-proof design.
- Please verify and confirm characteristics of the final or mounted products in using the Products.
- In particular, if a transient load (a large amount of load applied in a short period of time, such as pulse. is applied, confirmation of performance characteristics after on-board mounting is strongly recommended. Avoid applying power exceeding normal rated power; exceeding the power rating under steady-state loading condition may negatively affect product performance and reliability.
- De-rate Power Dissipation depending on ambient temperature. When used in sealed area, confirm that it is the use in the range that does not exceed the maximum junction temperature.
- Confirm that operation temperature is within the specified range described in the product specification.
- ROHM shall not be in any way responsible or liable for failure induced under deviant condition from what is defined in this document.

## Precaution for Mounting / Circuit board design

- When a highly active halogenous (chlorine, bromine, etc.) flux is used, the residue of flux may negatively affect product performance and reliability.
- In principle, the reflow soldering method must be used on a surface-mount products, the flow soldering method must be used on a through hole mount products. If the flow soldering method is preferred on a surface-mount products, please consult with the ROHM representative in advance.

For details, please refer to ROHM Mounting specification

### Precautions Regarding Application Examples and External Circuits

1. If change is made to the constant of an external circuit, please allow a sufficient margin considering variations of the characteristics of the Products and external components, including transient characteristics, as well as static characteristics.
2. You agree that application notes, reference designs, and associated data and information contained in this document are presented only as guidance for Products use. Therefore, in case you use such information, you are solely responsible for it and you must exercise your own independent verification and judgment in the use of such information contained in this document. ROHM shall not be in any way responsible or liable for any damages, expenses or losses incurred by you or third parties arising from the use of such information.

### Precaution for Electrostatic

This Product is electrostatic sensitive product, which may be damaged due to electrostatic discharge. Please take proper caution in your manufacturing process and storage so that voltage exceeding the Products maximum rating will not be applied to Products. Please take special care under dry condition (e.g. Grounding of human body / equipment / solder iron, isolation from charged objects, setting of Ionizer, friction prevention and temperature / humidity control).

### Precaution for Storage / Transportation

1. Product performance and soldered connections may deteriorate if the Products are stored in the places where:
  - [a] the Products are exposed to sea winds or corrosive gases, including Cl<sub>2</sub>, H<sub>2</sub>S, NH<sub>3</sub>, SO<sub>2</sub>, and NO<sub>2</sub>
  - [b] the temperature or humidity exceeds those recommended by ROHM
  - [c] the Products are exposed to direct sunshine or condensation
  - [d] the Products are exposed to high Electrostatic
2. Even under ROHM recommended storage condition, solderability of products out of recommended storage time period may be degraded. It is strongly recommended to confirm solderability before using Products of which storage time is exceeding the recommended storage time period.
3. Store / transport cartons in the correct direction, which is indicated on a carton with a symbol. Otherwise bent leads may occur due to excessive stress applied when dropping of a carton.
4. Use Products within the specified time after opening a humidity barrier bag. Baking is required before using Products of which storage time is exceeding the recommended storage time period.

### Precaution for Product Label

A two-dimensional barcode printed on ROHM Products label is for ROHM's internal use only.

### Precaution for Disposition

When disposing Products please dispose them properly using an authorized industry waste company.

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