Package : HTSSOP-B

< A tablie of contents >

1. Structure and materials

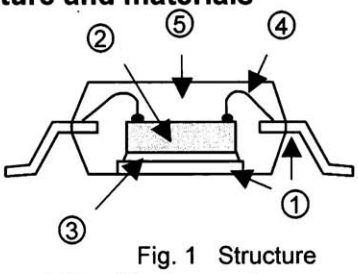


Fig. 1 Structure

No.	Item	Materials
①	Lead Frame	Cu-Alloy (External lead : Pb free solder plating)
②	Die	Silicon
③	Die Attach	Solder
④	Wire	Au
⑤	Molding	Epoxy 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)

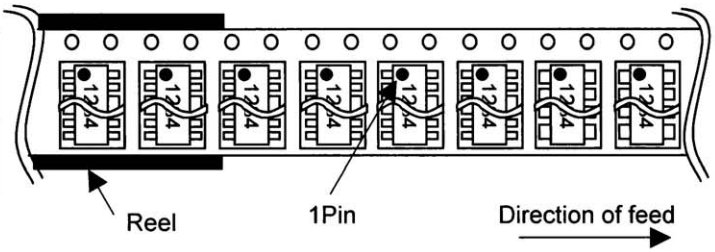
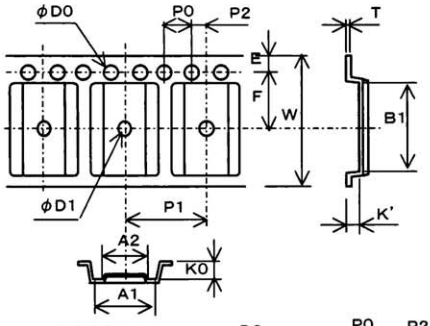


Fig. 2 Typical Tape and Reel configuration

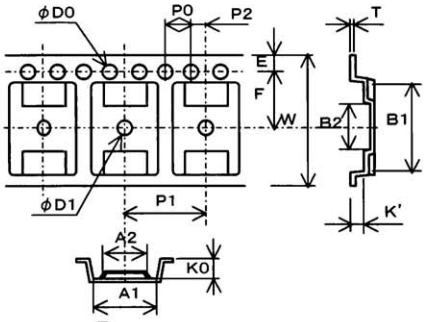
2. 2. Tape and Reel specification

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

HTSSOP-B24



HTSSOP-B20,-B28,-B40



HTSSOP-B30

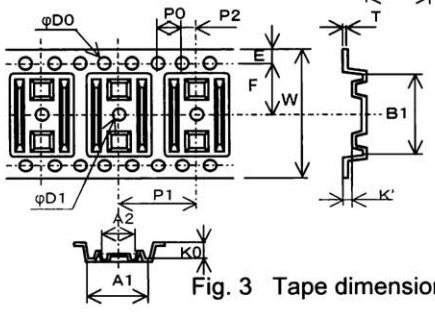


Fig. 3 Tape dimensions

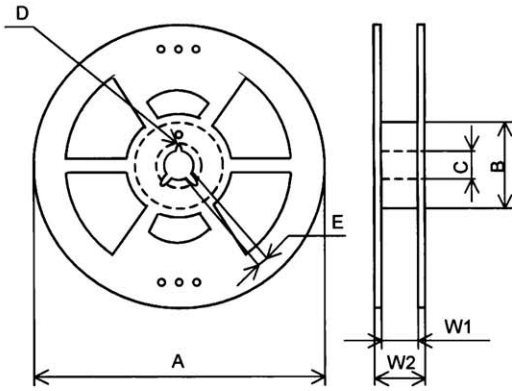


Fig. 4 Reel dimensions

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

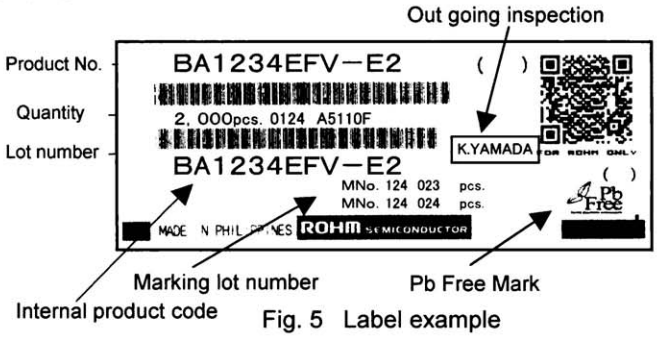


Fig. 5 Label example

2. 5. Packing style

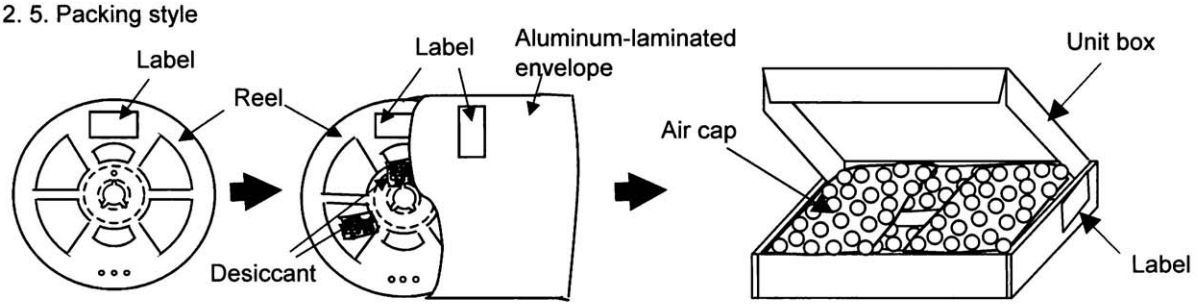
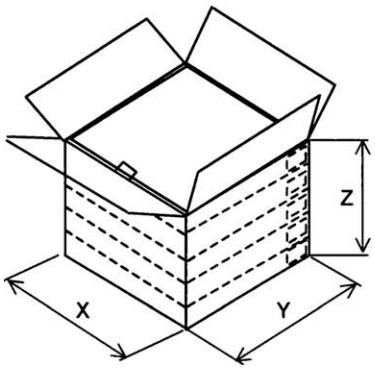


Fig. 6 Packing style

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.

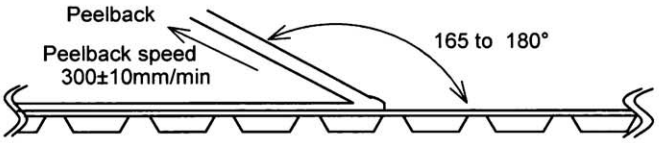


Fig. 8 Test method

2. 8. 2. Missing Ics
(1) No consecutive dropouts.
(2) A maximun 0.1% of specified number of products in each packing may be missing.

3. Storage conditions

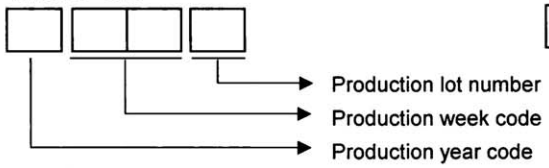
3. 1. Storage environment
Recommended storage conditions are as follows :
-Temperature : 5 to 30°C
-Humidity : 40 to 70% RH

3. 2. Storage period
-Specified storage period : 1 year

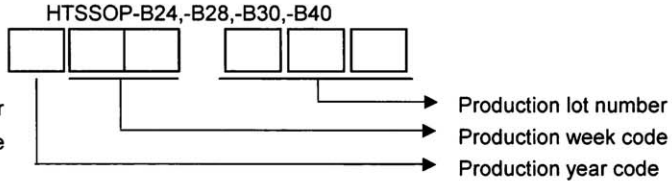
3. 3. Specified storage period until soldering
Dry process before mounting is necessary in the following two case.
1.After the package is opened , the product is left unused over 168 hours.
2.Before the package is opened , the product is left in the package unused over 1year.
Please excute dry processing in a reel state with 60℃ for 48 hours.
At this time, peelback strength of cover tape become 0.2N - 0.9N.
Case of transferring to heatproof container such as trays, excute dry processing with 125℃ for 24 hours.
In addition, the dry processing should be max, 2 times due to influence on the product's solderability.

4. Marking lot number

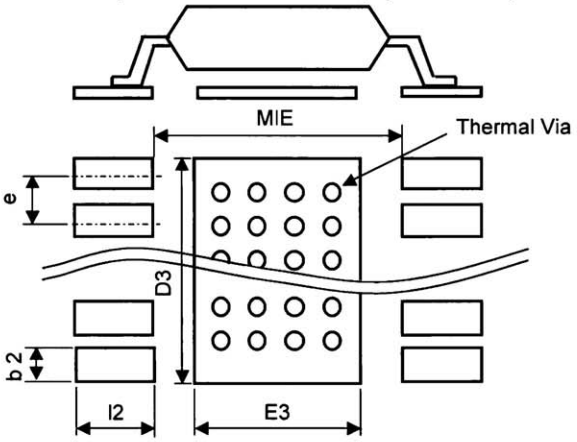
HTSSOP-B20



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



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



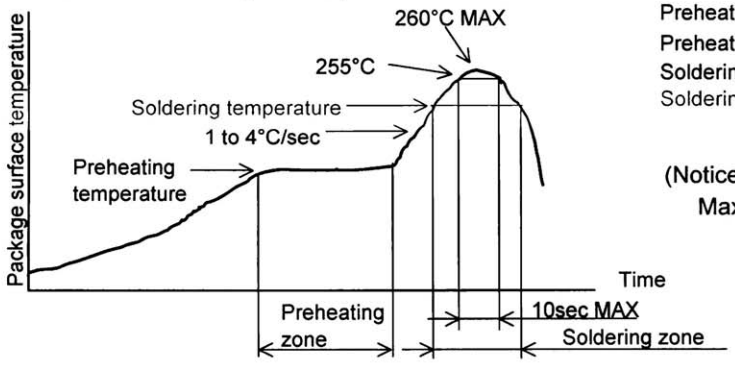
(all dimensions in mm)

Package	Land pitch e	Land space MIE	Land length ≥ l2	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	Radiaton land lengt D3	Radiaton land width E3	Thermal via	
			Pitch	Diameter
HTSSOP-B20	6.50	3.60	1.20	ϕ0.3
HTSSOP-B24	7.80	4.74	1.20	ϕ0.3
HTSSOP-B28	9.70	3.60	1.20	ϕ0.3
HTSSOP-B30	10.00	4.80	1.20	ϕ0.3
HTSSOP-B40	13.60	5.00	1.20	ϕ0.3

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	8.4	(5.0)	14.2	(6.0)	φ1.5	φ2.0	1.75	11.5	1.15	1.65	12.0	2.0	0.3	24.0	4.0
Tolerance		±0.1	±0.05	±0.1	-	$^{+0.1}_{-0}$	$^{+0.1}_{-0}$	±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	φ20.2	1.5	13.5	18.5
HTSSOP-B24	φ330	φ80	φ13.0	φ20.2	1.5	17.5	22.5
HTSSOP-B28	φ330	φ80	φ13.0	φ20.2	1.5	17.5	22.5
HTSSOP-B30	φ330	φ80	φ13.0	φ20.2	1.5	17.5	22.5
HTSSOP-B40	φ330	φ80	φ13.0	φ20.2	1.5	24.4	32.4
Tolerance	-	-	±0.2	MIN	MIN	$^{+2.0}_{-0}$	MAX

< Dehydrated weight >

Dehydrated weight dimensions in g
0.08
0.12
0.12
0.15
0.20

Notes

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