

## Package : UQFN

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### 1. Structure and materials

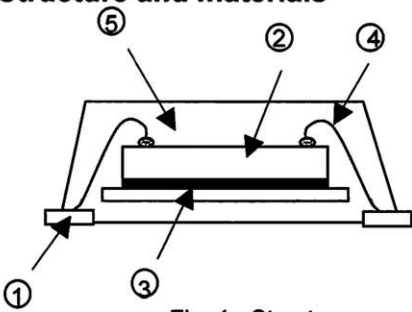


Fig. 1 Structure

No.	Item	Materials
①	Lead Frame	Cu-Alloy (External lead : Pb free solder plating)
②	Die	Silicon
③	Die Attach	Ag Paste
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)

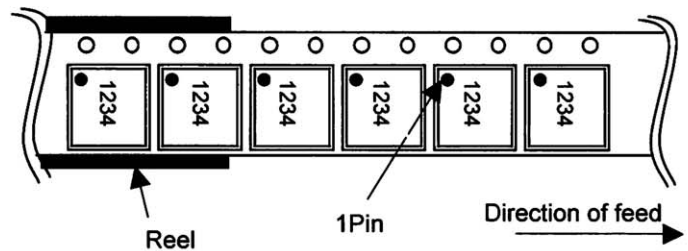


Fig. 2 Typical Tape and Reel configuration

#### 2. 2. Tape and Reel specification

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

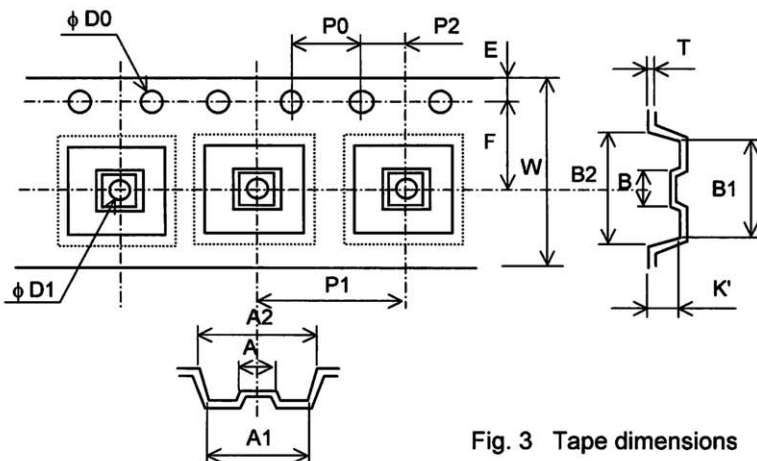


Fig. 3 Tape dimensions

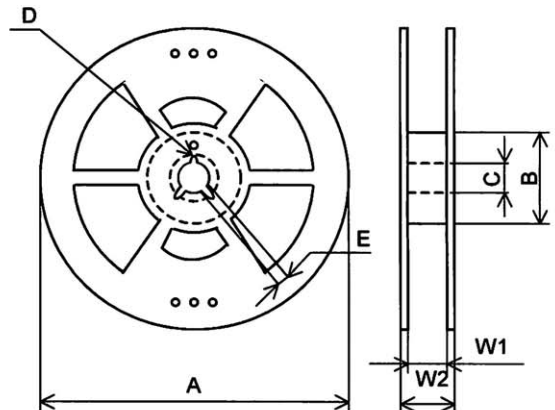


Fig. 4 Reel dimensions

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

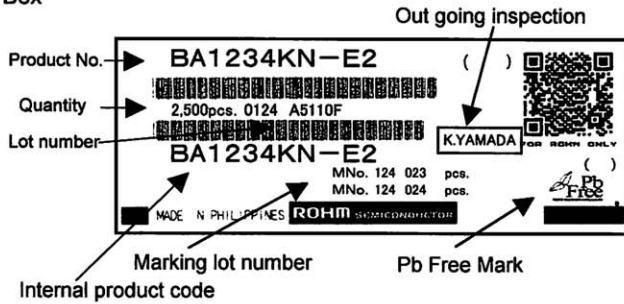


Fig. 5 Label example

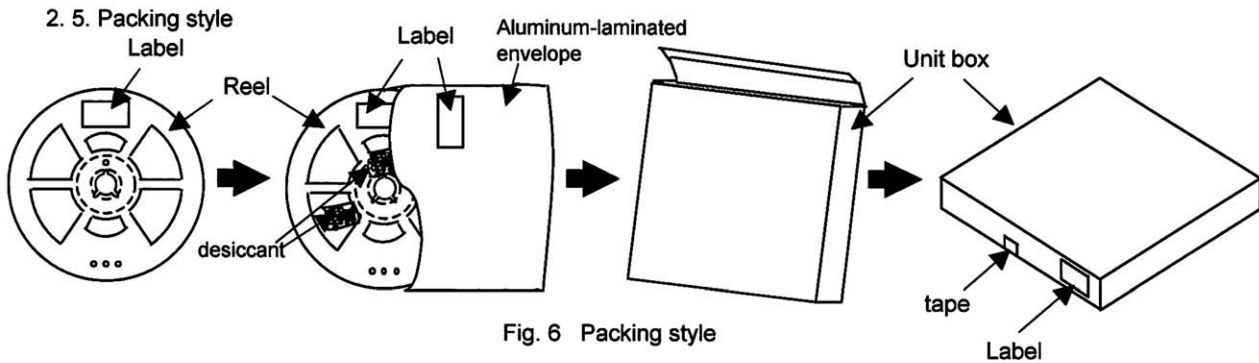


Fig. 6 Packing style

2. 6. Shipping style

5 unit boxes or less per shipping box

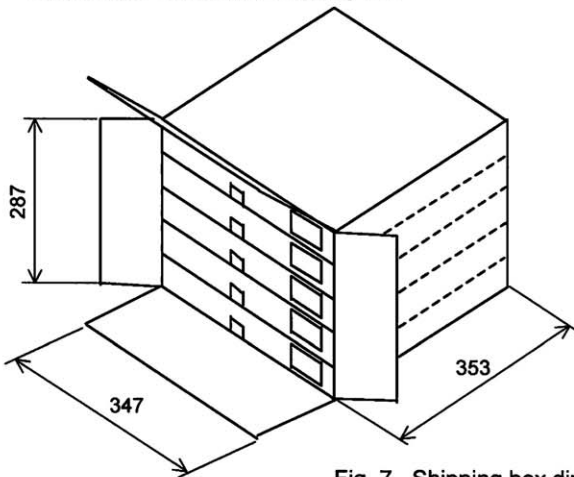


Fig. 7 Shipping box dimensions and Shipping style

2. 7. Packing materials

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

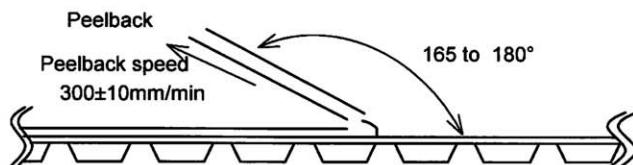
(all dimensions in mm)

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

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 1 year.

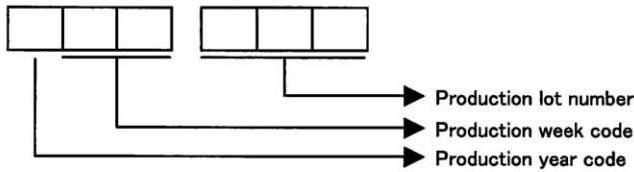
Please excute dry processing in a reel state with 60°C for 72 hours.

At this time, peelback strength of cover tape become 0.2N -0.9N.

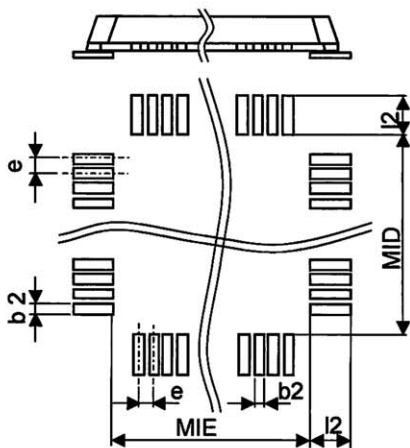
Case of transferring to heatproof container such as trays, excute dry processing with 125°C for 24 hours.

In addition, the dry processing should be max, 2 times due to influence on the product's solderability.

4. Marking lot number



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



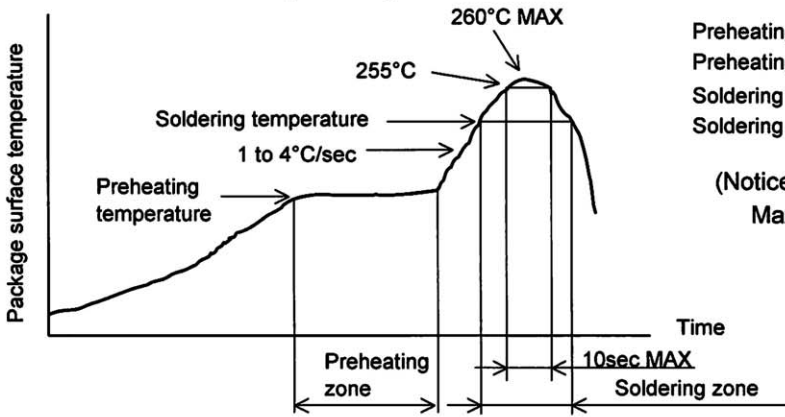
(all dimensions in mm)

Package	Land pitch e	Land space MIE	Land space MID	Land length $\geq l2$	Land width b2
UQFN48,52	0.4	5.6	5.6	1.10	0.22
UQFN64	0.4	6.6	6.6	1.10	0.22
UQFN84	0.4	8.6	8.6	1.10	0.22

- The lead toe and lead side fillet may not be achieved because of non-lead packages.

**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. The wave soldering method is not supported.

< Tape dimensions >

Package	Quantity (pcs)	Tape dimensions (all dimensions in mm)															
		A	B	A1	B1	A2	B2	D0	D1	E	F	K'	P0	P1	P2	T	W
UQFN48	2500	4.5	4.5	7.7	7.7	8.0	8.0	φ1.5	φ1.5	1.75	7.5	1.5	4.0	12.0	2.0	0.3	16.0
UQFN52	2500	4.5	4.5	7.7	7.7	8.0	8.0	φ1.5	φ1.5	1.75	7.5	1.5	4.0	12.0	2.0	0.3	16.0
UQFN64	2500	6.1	6.1	8.46	8.46	8.63	8.63	φ1.5	φ1.5	1.75	7.5	1.6	4.0	12.0	2.0	0.3	16.0
UQFN84	2500	7.0	7.0	10.5	10.5	10.7	10.7	φ1.5	φ1.55	1.75	7.5	1.4	4.0	12.0	2.0	0.3	16.0
Tolerance		±0.2	±0.2	±0.1	±0.1	±0.2	±0.2	<sup>+0.1</sup> <sub>-0</sub>	<sup>+0.1</sup> <sub>-0</sub>	±0.1	±0.1	±0.2	±0.1	±0.1	±0.1	±0.05	±0.3

< Reel dimensions >

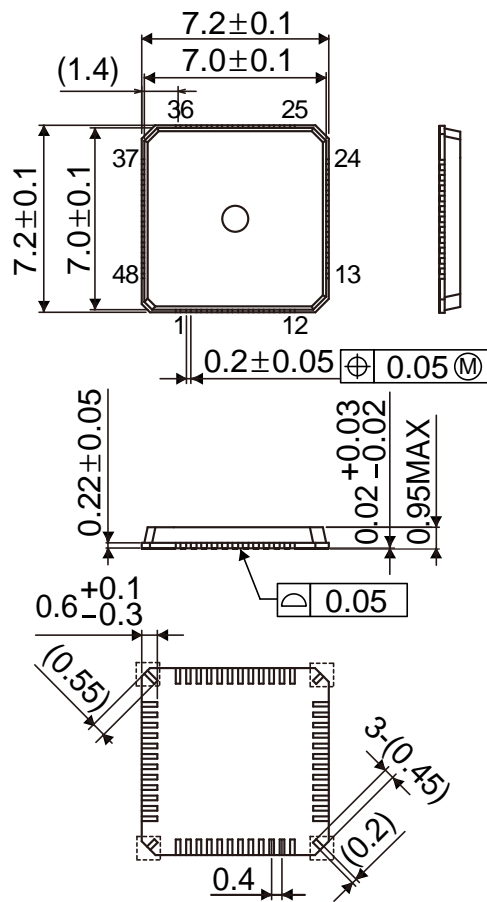
Package	Reel dimensions (all dimensions in mm)						
	A	B	C	D	E	W1	W2
UQFN48	φ330	50	13.0	20.2	1.5	17.4	21.4
UQFN52	φ330	50	13.0	20.2	1.5	17.4	21.4
UQFN64	φ330	50	13.0	20.2	1.5	17.4	21.4
UQFN84	φ330	50	13.0	20.2	1.5	17.4	21.4
Tolerance	-	MIN	±0.2	MIN	MIN	±1.0	±1.0

< Dehydrated weight >

Dehydrated weight dimensions in g
0.10
0.10
0.13
0.20

# Package Dimensions

## UQFN48

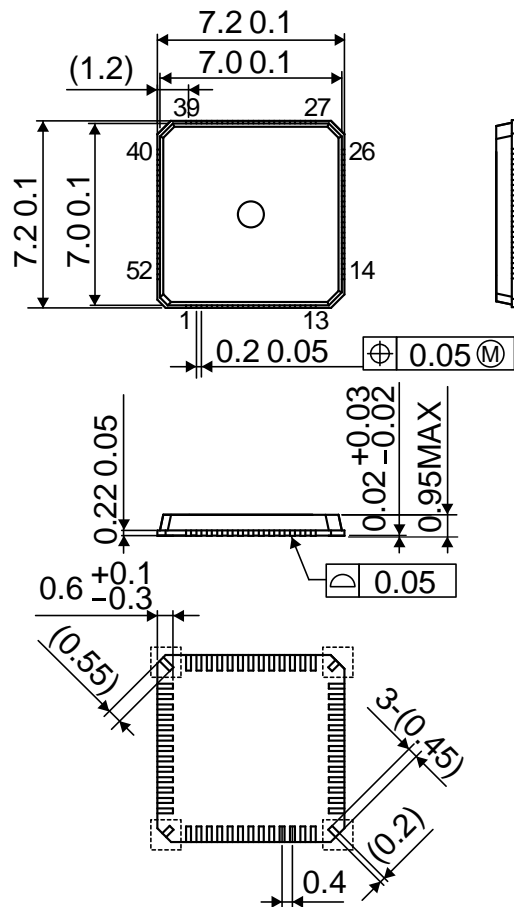


Notice :  
Do not use the dotted line area  
for soldering

(Unit : mm)

# Package Dimensions

UQFN52

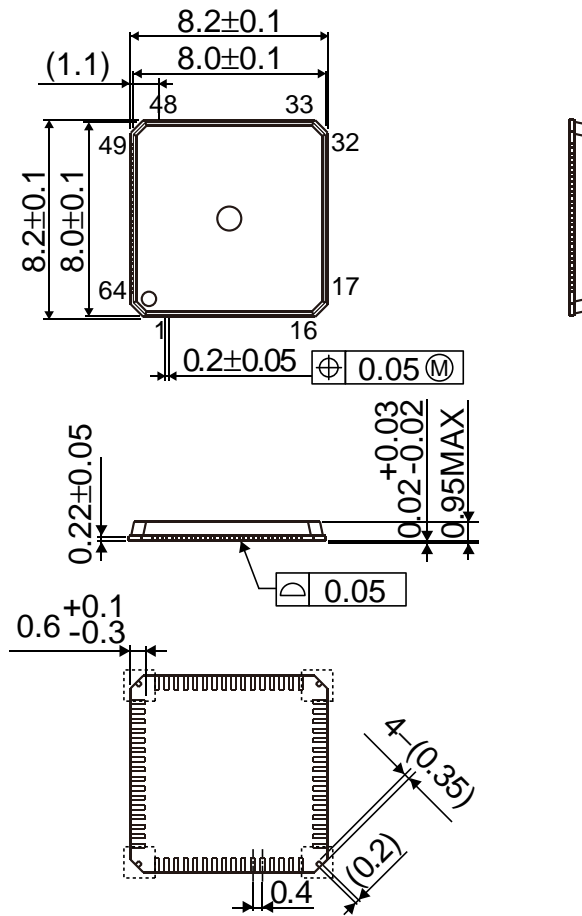


Notice :  
Do not use the dotted line area  
for soldering

(Unit : mm)

# Package Dimensions

## UQFN64

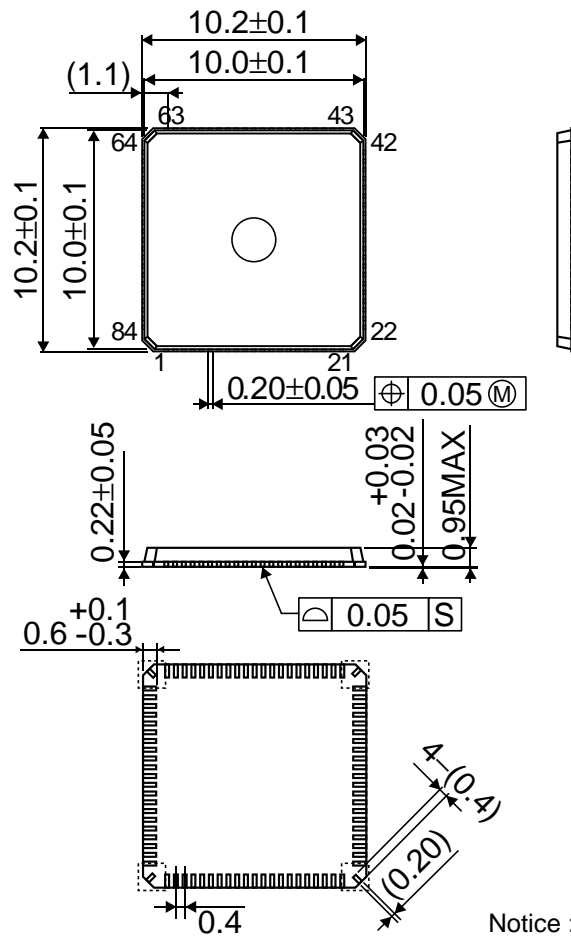


Notice :  
Do not use the dotted line area  
for soldering

(Unit : mm)

# Package Dimensions

UQFN84



Notice :  
Do not use the dotted line area  
for soldering

(Unit : mm)

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