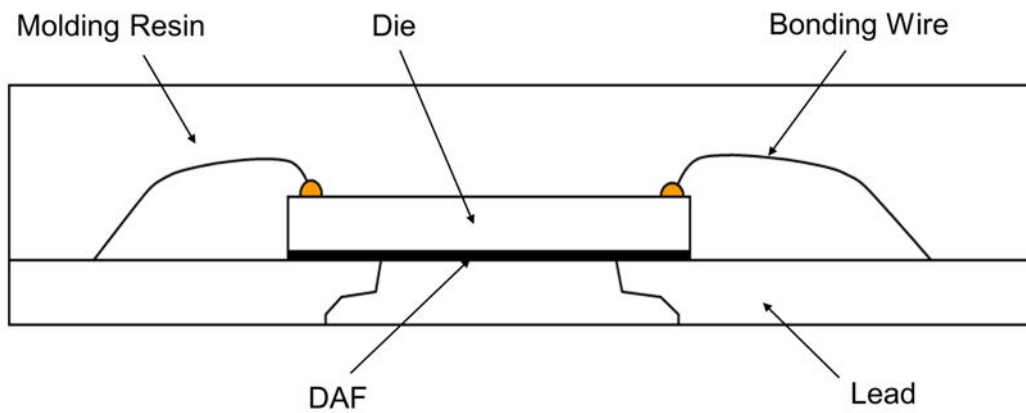


1. Package Information

Package Name	WQFN12X2520A
Type	QFN
Pin Count	12
Package Weight [g]	0.006
Lead Finish	Ni/Pd/Au
MSL	Level3

2. Package Structure



3. Packing Specification

3.1 Packing form, Quantity, PIN1 Orientation

Packing Form		Tape&Reel
Packing Quantity	[pcs]	4000
PIN 1 Orientation		TR

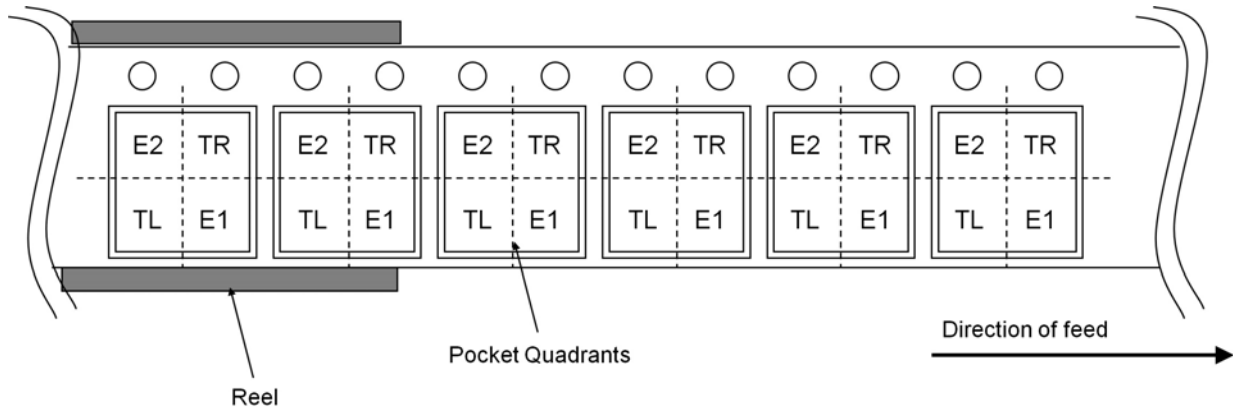


Fig.1 Quadrant Assignments for PIN 1 Orientation in Tape

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
Unit box	Cardboard
Shipping box	Cardboard

3.3 Leader specification

No component pockets are 160 mm or more.

3.4 Trailer specification

No component pockets are 40 mm or more. Tape is free from reel.

3.5 Peelback strength

Cover tape peelback strength is 0.2 N to 0.7 N.

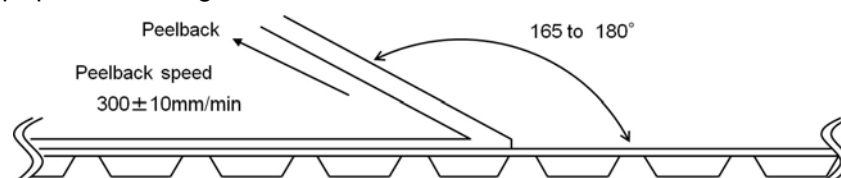


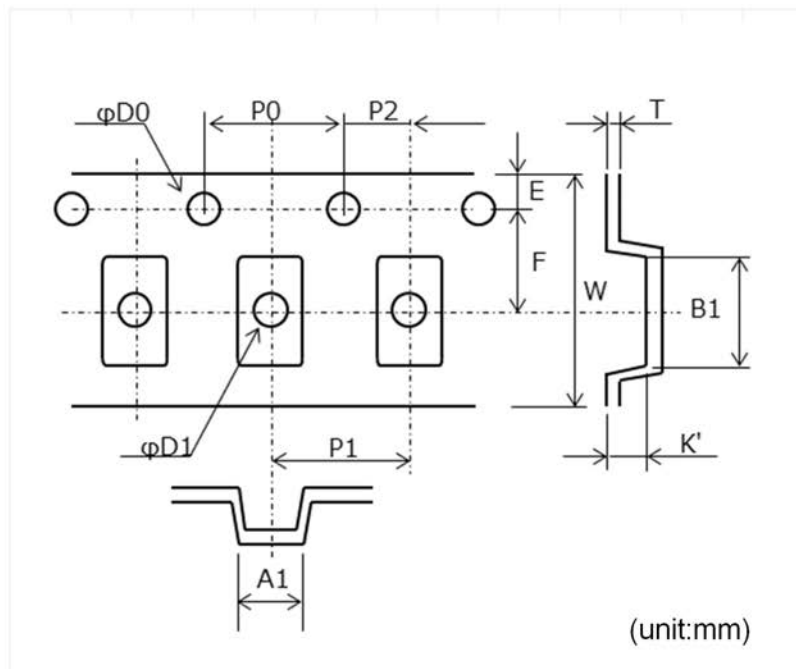
Fig. 2 Test method

3.6 Missing Ics

- (1) No consecutive dropouts.
- (2) A maximum 0.1 % of specified number of products in each packing may be missing.

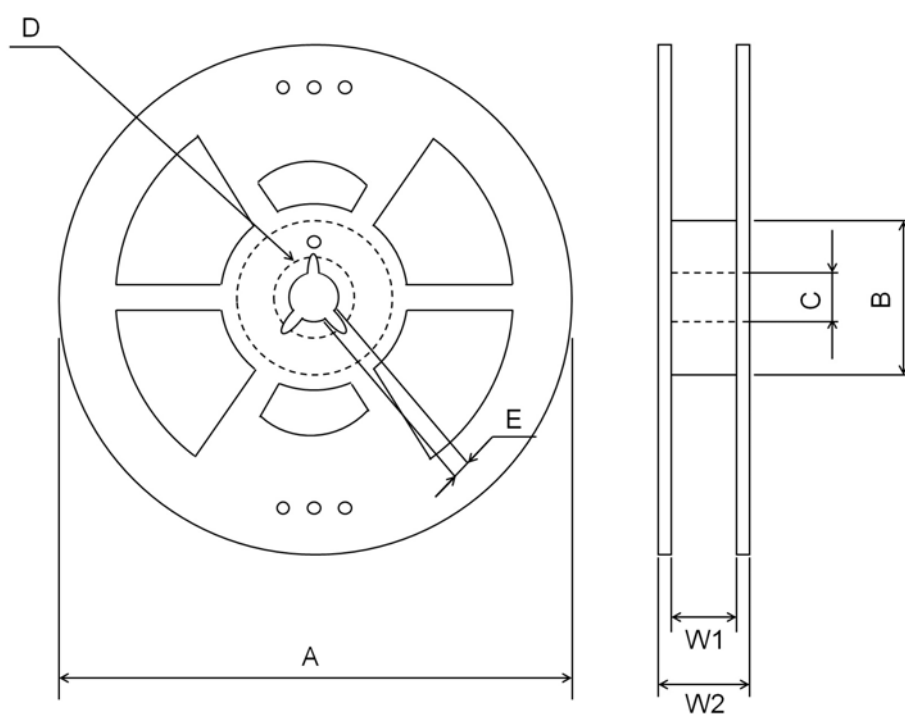
3.7 Tape and Reel Specification

3.7.1 Tape Dimension



	Tape Dimension	Tape Tolerance
A1	2.4	±0.1
B1	2.9	±0.1
D0	φ 1.55	±0.05
D1	φ 1.15	±0.1
E	1.75	±0.1
F	3.5	±0.05
K'	0.75	±0.05
P0	4.0	±0.1
P1	4.0	±0.1
P2	2.0	±0.05
T	0.25	±0.05
W	8.0	±0.2

3.7.2 Reel Dimension

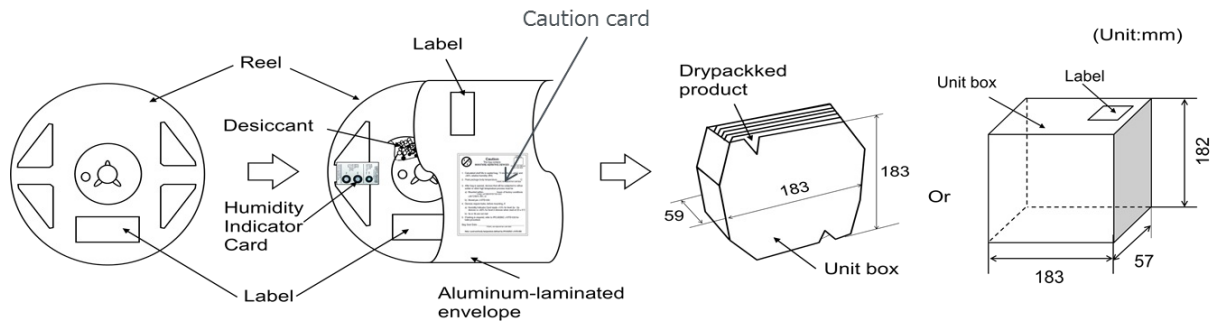


(unit:mm)

	Reel Dimension	Reel Tolerance
A	180	-
B	60	+1.0/-0
C	13	±0.2
D	21	MIN
E	2	MIN
W1	9	+1.0/-0
W2	11.4	±1.0

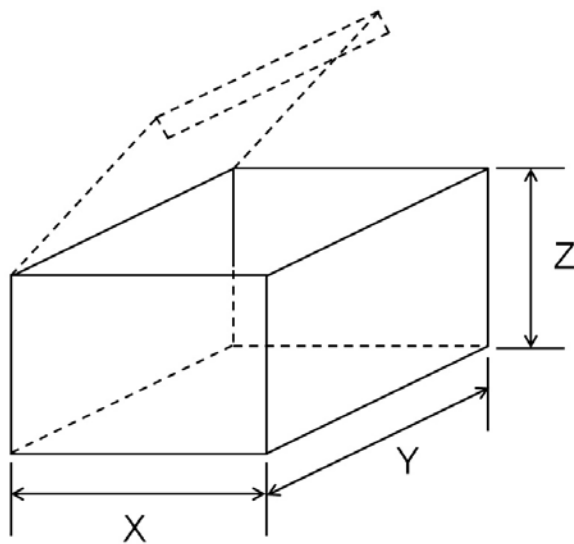
3.8 Packing Method

2reel(s) or less per unit box



3.9 Packing Style

4unit boxes or less per shipping box



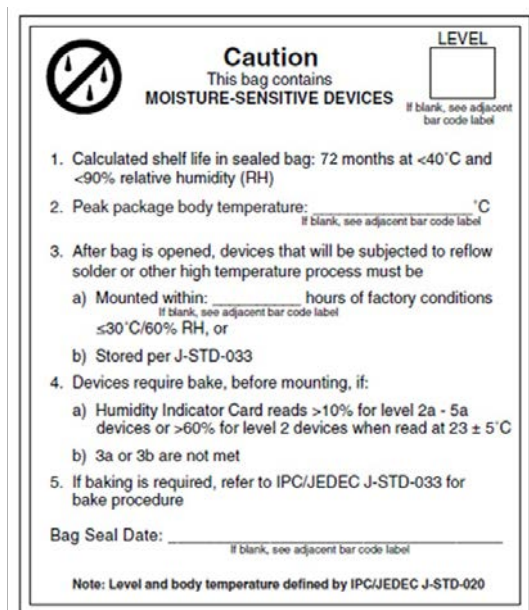
(unit:mm)

Shipping Box	
X	190
Y	255
Z	193

3.10 Label Specification

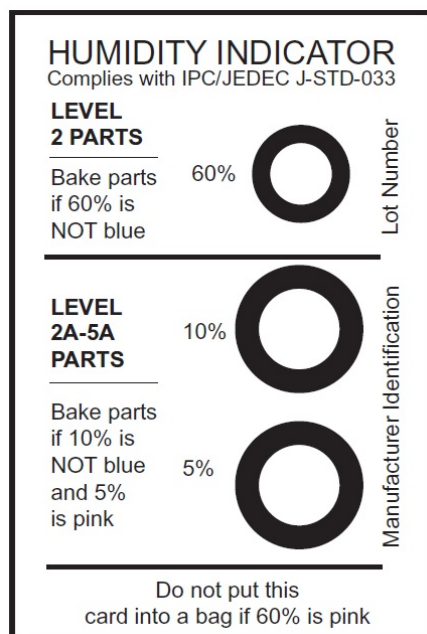


3.11 Caution card specification

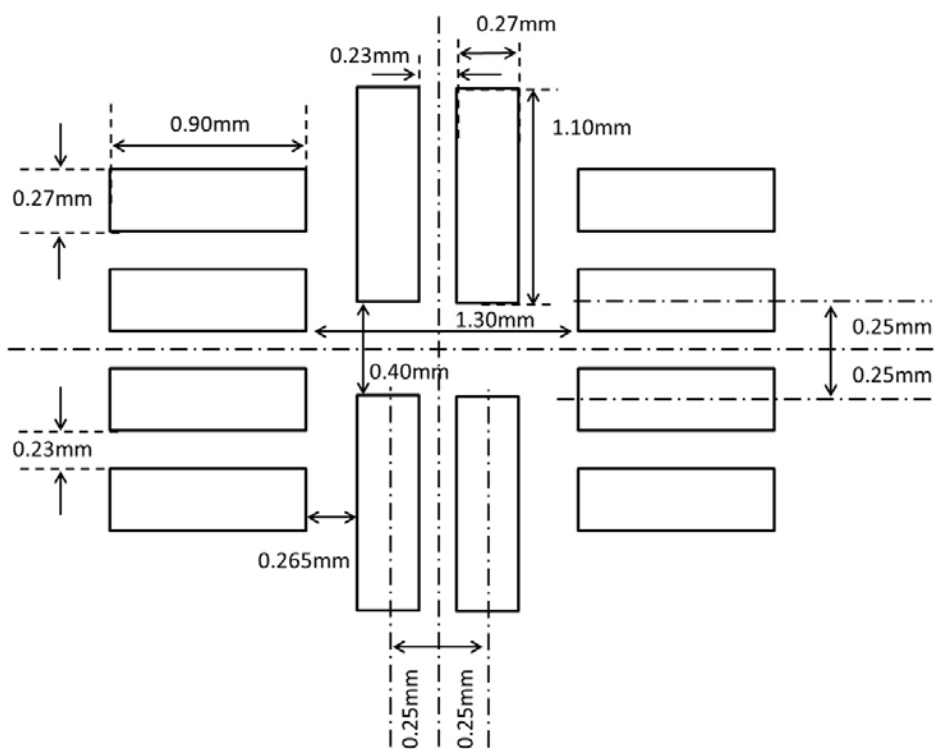


Remark) Standard item 1. calculated shelf life in caution card is not applied for MSL1 product.

3.12 Indicator card specification



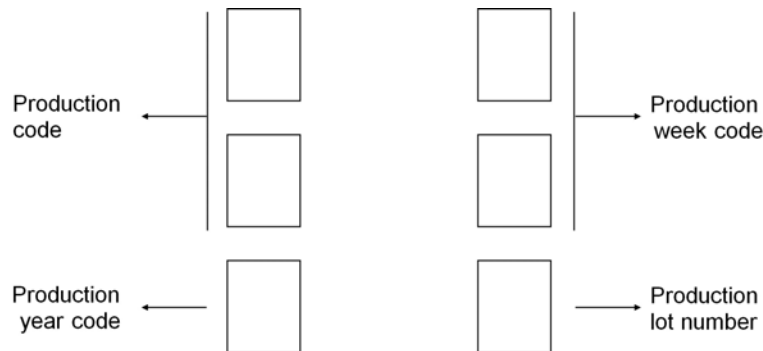
4. Footprint dimensions



(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	hour

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 [hour]
Reel (Note1)	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

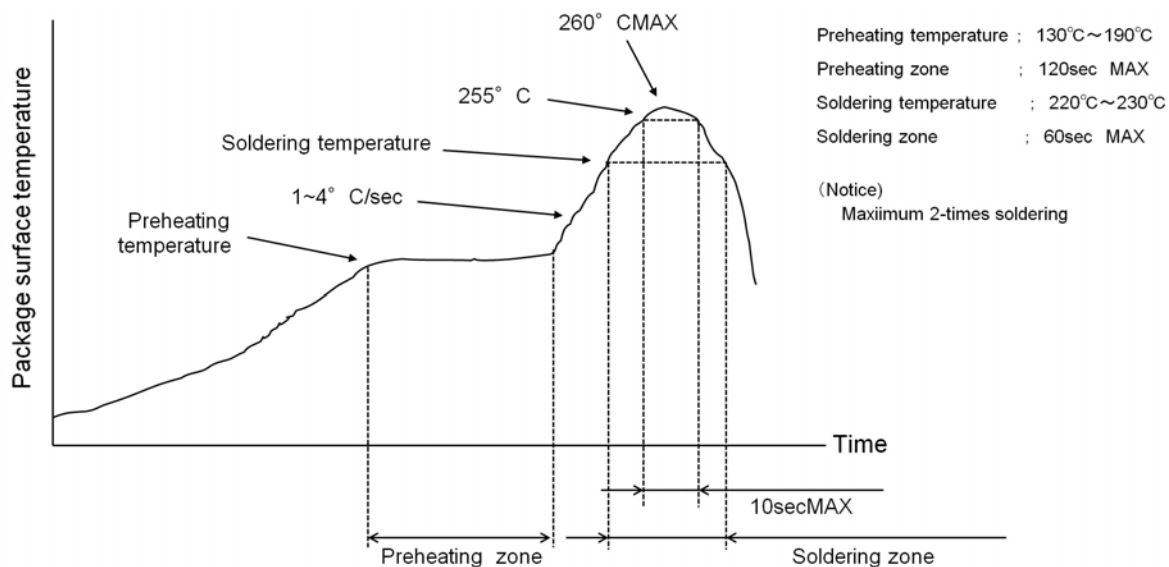
The drying process is the impact on the solderability because the oxidation of the terminal portion will occur. Therefore, specify the maximum times of the dry processing as follows:

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

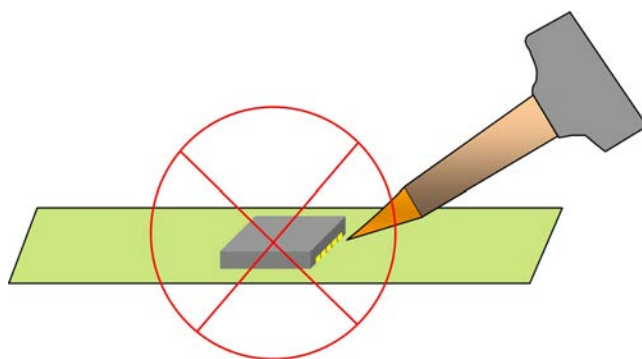


7.2 For wave soldering

The wave soldering method is not supported.

7.3 For solder iron

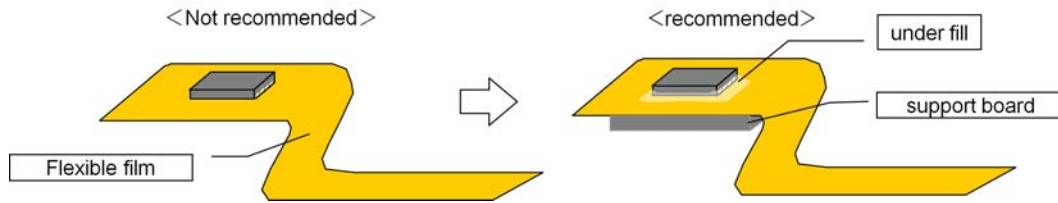
Rework by soldering iron is not allowed or it may cause mold crack and terminal open.



7.4 Caution for solder mounting

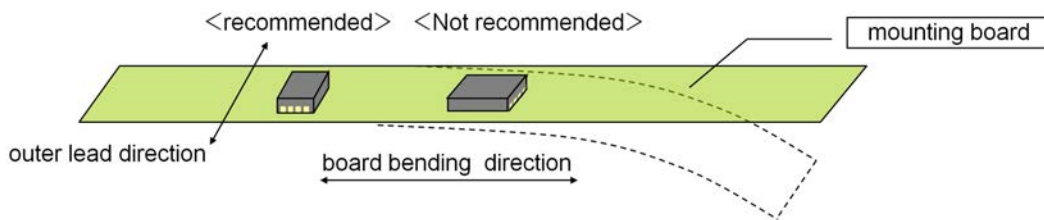
7.4.1 For mounting on flexible film

Mounting on flexible film, film bend may occur lack of lead from package, usage of support board and under fill is recommended.



7.4.2 For Mounting long and narrow board

Mounting on long and narrow board, bending stress may occur a lack of lead from package, bending board direction and outer lead direction is recommended as drawing (vertically layout) and under fill usage is recommended.



8. Appearance inspection criteria for foreign material, void and etc.

This products are made from clear resin.

This products are susceptible damage from foreign material and void in production process.

In case of the foreign material, void and etc. do not affect IC character, this damage are no object.

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