

## Product Change Notice (PCN)

**Subject:** Add Back-End factories, materials, and change packing material of Tape & Reel for RX LQFP package products

**Publication Date:** 5/27/2022

**Effective Date:** 9/1/2022

### Revision Description:

Initial release.

### Description of Change:

#### 1)Add Back-End factories

##### 1.1 Add the assembly factory

Current: Renesas Semiconductor (Beijing) Co., Ltd (RSB)

Addition: Greatek Electronics Inc., (Greatek)

##### 1.2 Add the final test factory

Current: Renesas Semiconductor (Beijing) Co., Ltd (RSB)

Addition: King Yuan Electronics Co., Ltd. (KYTEC)

#### 2)Add materials

When comparing with RSB products, there are some change as described below because of using the standard material and manufacturing equipment which are currently using in the Greatek factory.

##### 2.1 Material:

Lead frame, die mount and mold resin.

##### 2.2 Package outline and Marking on package:

Some differences for external dimensions. There is no change in footprint for Greatek products. Marking font.

##### 2.3 Packing material:

Addition of bundling band color (Black)

#### 3) Change an emboss tape width (Affected only 14x14mm package products)

Current: 32mm\*

Addition: 24mm.

According to the change an emboss tape width, we also need to change cavity width, cavity depth, sprocket hole, dimension between center of sprocket hole and cavity, reel width and cover tape width.

\* The tape width of the current factory will also be planned to be changed to 24 mm.

#### 4) Storage condition after opening

The storage conditions after opening the moisture proof bag of the Greatek product comply with JEDEC standards.

Current : 30° C /70%RH/within 168hr

Change : 30° C /60%RH/within 168hr(JEDEC compliant)

**Affected Product List :**

RX LQFP package products. For the P/N details, please refer to page 3.

Product group	Package	Product affected by changing an emboss tape width
RX24T	14x14mm 100pin	Affected
RX231	14x14mm 100pin	Affected
RX130	10x10mm 64pin	Not affected
RX130	7x7mm 48pin	Not affected
RX13T	7x7mm 32pin	Not affected

**Reason for Change:**

For Stable supply, we add Back-End factories.

**Impact on Fit, Form, Function, Quality & Reliability:**

Fit, Form: There are some changes in dimensions.

Function, Quality and reliability: There are no impact.

**Product Identification:**

Possible to confirm the production history data from the packing label or trace code.

**Qualification Status:** Completed. Please contact Renesas sales, distributor, or agency.

**Sample Availability Date:** 9/1/2022

**Device Material Declaration:** Contact Renesas sales, distributor, or agency.

Note:

1. Acknowledgement must be received by Renesas within 30 days or Renesas will consider the change as approved.
2. If timely acknowledgement is provided by Customer, then Customer shall have 90 days from the date of receipt of this PCN to make any objections to this PCN. If Customer fails to make objections to this PCN within 90 days of the receipt of the PCN then Renesas will consider the PCN changes as approved.
3. If customer cannot accept the PCN then customer must provide Renesas with a last time buy demand and purchase order.

**For additional information regarding this notice, please contact your Renesas sales representative.**

P/N list

<b>Affected P/N list</b>
R5F513T3ADPJ#10
R5F513T3ADPJ#50
R5F513T3AGPJ#10
R5F513T3AGPJ#50
R5F51303ADFL#10
R5F51303ADFL#50
R5F51305ADFL#10
R5F51305ADFL#50
R5F51303AGFL#10
R5F51303AGFL#50
R5F51305AGFL#10
R5F51305AGFL#50
R5F51303ADFM#10
R5F51303ADFM#50
R5F51305ADFM#10
R5F51305ADFM#50
R5F51305AGFM#10
R5F52317ADFP#10
R5F52317ADFP#50
R5F52317BDFP#10
R5F52318ADFP#10
R5F52318ADFP#50
R5F52318BDFP#10
R5F52318AGFP#10
R5F52318AGFP#50
R5F524T8ADFP#10
R5F524T8ADFP#11
R5F524TAADFP#11
R5F524TAADFP#51

# ADD BACK-END FACTORIES, MATERIALS AND CHANGE TAPE & REEL PACKAGING FOR RX LQFP PRODUCTS DIFFERENCE DOCUMENT

Greatek Electronics Inc.,

King Yuan Electronics Co., Ltd

MAY 27, 2022

IOT PLATFORM BUSINESS DIVISION  
IOT AND INFRASTRUCTURE BUSINESS UNIT  
RENESAS ELECTRONICS CORPORATION

IMO-AB-22-0068

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(Rev. 5.0-1 October 2020)

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  - 3 . 4M changing points

# Overview

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Thank you for continuously using our products.

For RX microcomputer products, we continuously add manufacturing factories and change assembly materials for stable supply.

For LQFP package products, manufacturing factories and assembly materials also are added this time.

Therefore, we would like to ask for your kind understanding and cooperation in order to make the procedure smoothly completed.

Yours sincerely,

Change points are reported in the following pages.

# 1. DIFFERENCE OF SPECIFICATION'S OUTLINE

Item		Current	Addition	Note
Assembly factory		Renesas Semiconductor (Beijing) Co., Ltd	Greatek Electronics Inc.	-
Sorting factory			King Yuan Electronics Co., Ltd	
Parts	Lead frame	-	Change to standard material used in new factory. The structure not changed.	Refer to page 6
	Die mount	-	Change to standard material used in new factory. The structure not changed.	
	Mould resin	-	Change to standard material used in new factory. The structure not changed.	
Package	Outline	-	There are changes in some of dimensions	Refer to page 7 to 19
Marking	Font	-	Font changed	Refer to page 20
Packing	Bundling band color	-	Add black	-
	Tape & Reel 14x14mm package	Embossed tape width 32 mm *	Embossed tape width 24 mm	Refer to page 21 to 22
Storage condition	After opening	Within 30°C/ 70%RH/ 168h	Within 30°C/ 60%RH/ 168h	—

\*Current factory will also be planned to be changed to 24 mm.

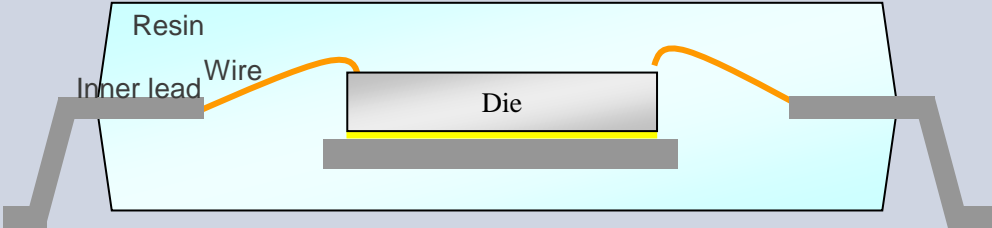

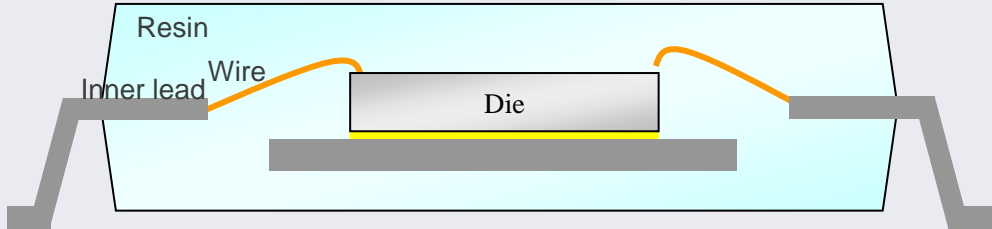

※ There is no impact on reliability and specification



# 2. DIFFERENCE OF SPECIFICATION'S DETAIL (1)

## PACKAGE STRUCTURE(IMAGE)

※PKG cross section and die pad shape are reference examples

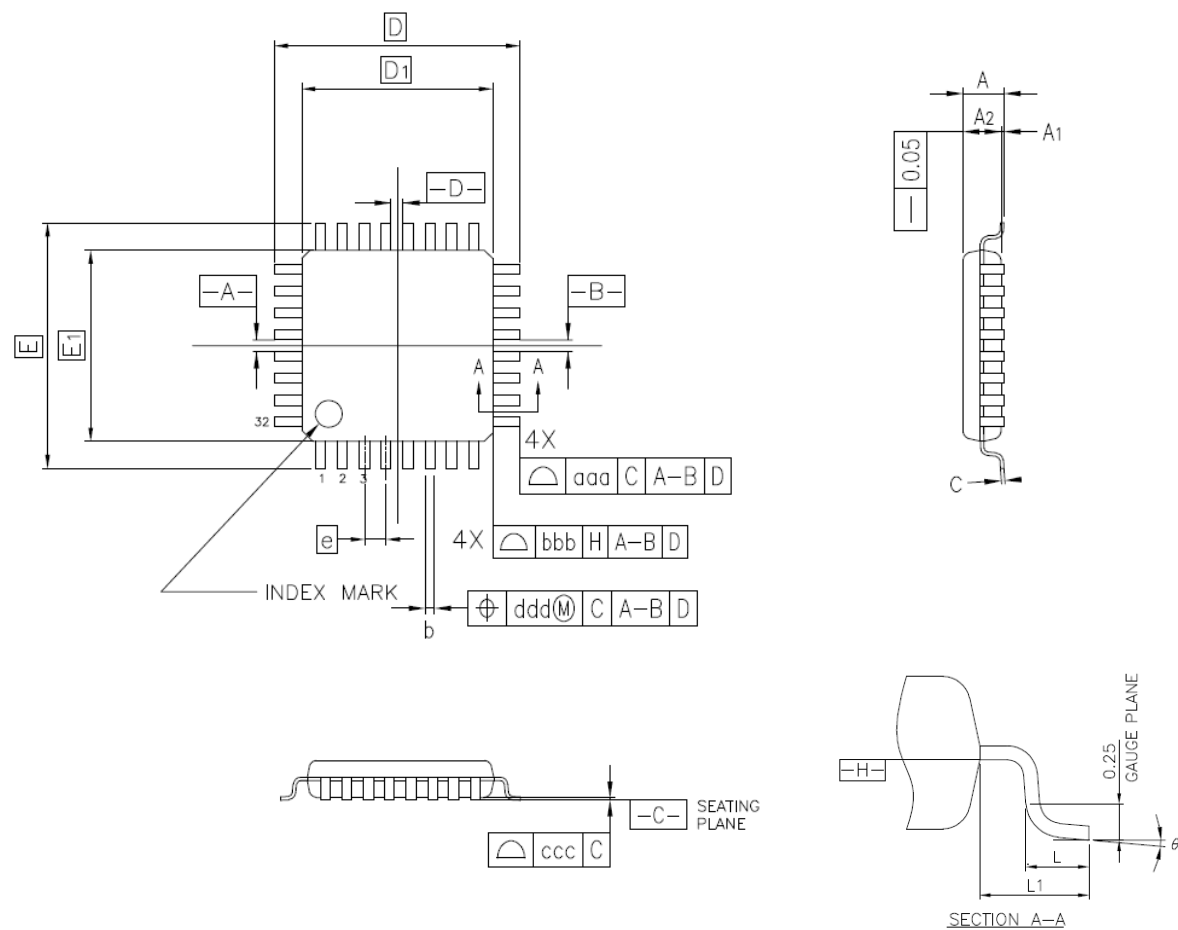
Assembly Line	PKG cross section	Die pad shape
Current		
Addition		

※ There is no impact on the reliability by die pad shape

# 2. DIFFERENCE OF SPECIFICATION'S DETAIL (2)

## 7x7mm 32pin LQFP package drawing (Addition)

RENESAS Code : PLQP0032GE-A

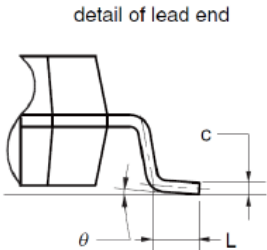
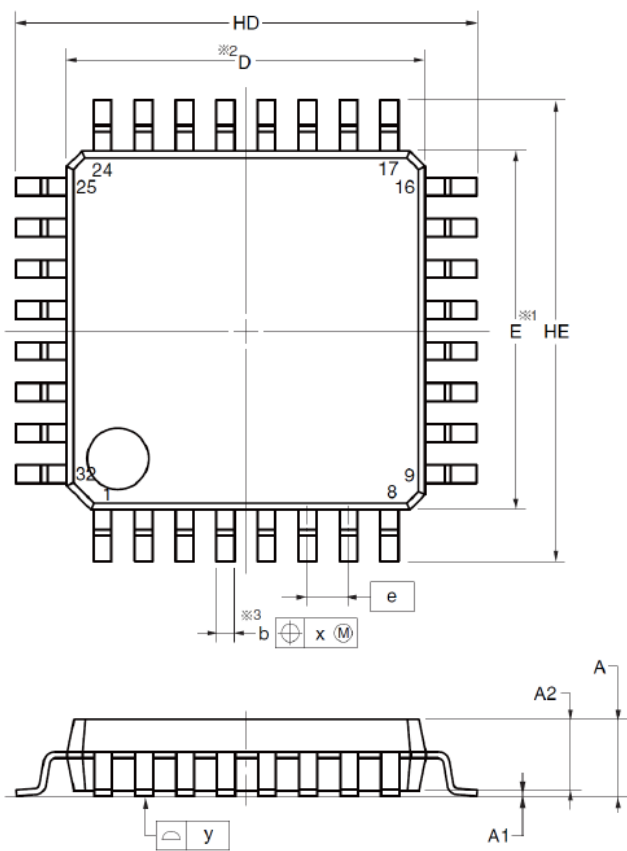


Reference Symbol	Dimension in Millimeters		
	Min.	Nom.	Max.
A	—	—	1.60
A <sub>1</sub>	0.05	—	0.15
A <sub>2</sub>	1.35	1.40	1.45
D	—	9.00	—
D1	—	7.00	—
E	—	9.00	—
E <sub>1</sub>	—	7.00	—
N	—	32	—
e	—	0.80	—
b	0.30	0.37	0.45
c	0.09	—	0.20
θ	0°	3.5°	7°
L	0.45	0.60	0.75
L <sub>1</sub>	—	1.00	—
aaa	—	—	0.20
bbb	—	—	0.20
ccc	—	—	0.10
ddd	—	—	0.20

# 2. DIFFERENCE OF SPECIFICATION'S DETAIL (3)

## 7x7mm 32pin LQFP package drawing (Current)

RENESAS Code : PLQP0032GB-A



(UNIT:mm)

ITEM	DIMENSIONS
D	7.00±0.10
E	7.00±0.10
HD	9.00±0.20
HE	9.00±0.20
A	1.70 MAX.
A1	0.10±0.10
A2	1.40
b	0.37±0.05
c	0.145±0.055
L	0.50±0.20
θ	0° to 8°
e	0.80
x	0.20
y	0.10

## 2. DIFFERENCE OF SPECIFICATION'S DETAIL (4)

### Dimension comparison: 7x7mm 32pin LQFP package

Greatek symbol is the same as the JEDEC standard.

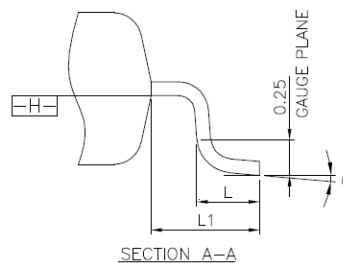
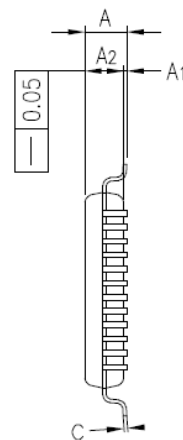
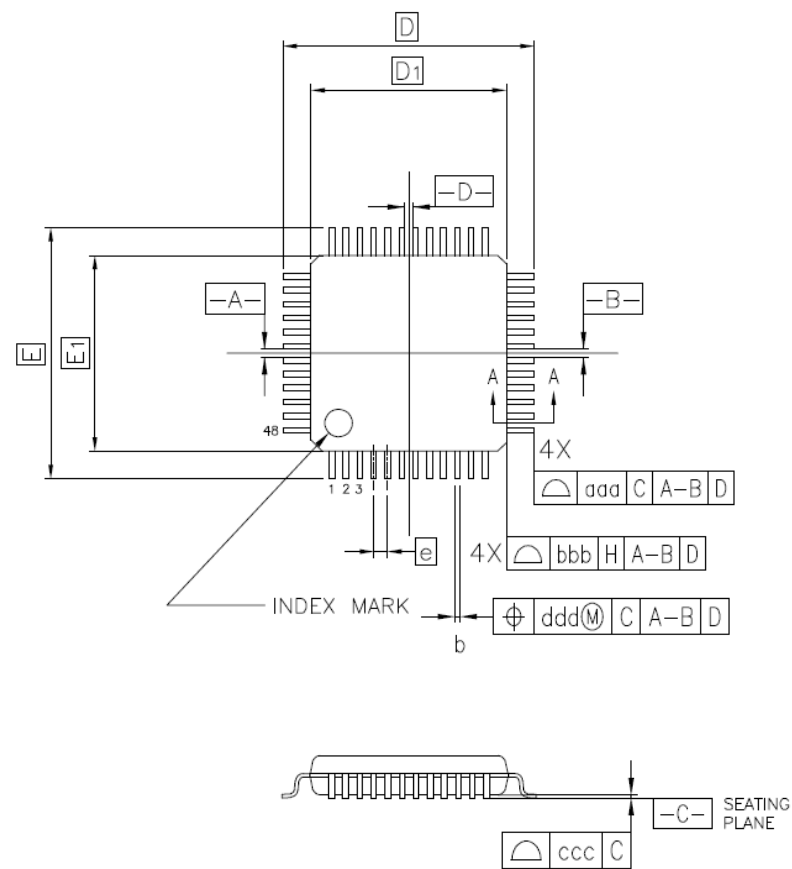
Addition	7x7mm 32pin LQFP PLQP0032GE-A			Current	7x7mm 32pin LQFP PLQP0032GB-A		
Greatek Symbol	Dimension in Millimeters			RSB Symbol	Dimension in Millimeters		
	Min	Nom	Max		Min	Nom	Max
A	-	-	1.60	A	-	-	1.70
A1	0.05	-	0.15	A1	0.00	0.10	0.20
A2	1.35	1.40	1.45	A2	-	1.40	-
D	-	9.00	-	HD	8.80	9.00	9.20
D1	-	7.00	-	D	6.90	7.00	7.10
E	-	9.00	-	HE	8.80	9.00	9.20
E1	-	7.00	-	E	6.90	7.00	7.10
N	-	32	-	-	-	-	-
e	-	0.80	-	e	-	0.80	-
b	0.30	0.37	0.45	b	0.32	0.37	0.42
c	0.09	-	0.20	c	0.09	0.145	0.20
θ	0°	3.5°	7°	θ	0°	-	8°
L *	0.45	0.60	0.75	L	0.30	0.50	0.70
L1	-	1.00	-	-	-	-	-
aaa	-	-	0.20	-	-	-	-
bbb	-	-	0.20	-	-	-	-
ccc	-	-	0.10	y	-	0.10	-
ddd	-	-	0.20	x	-	0.20	-

\*The dimensions are equivalent to the current ones.  
The difference in the numerical value is because the part specified as the dimension is different.

# 2. DIFFERENCE OF SPECIFICATION'S DETAIL (5)

## 7x7mm 48pin LQFP package drawing (Addition)

RENESAS Code : PLQP0048KL-A

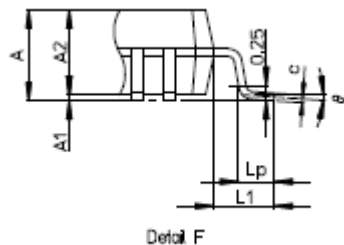
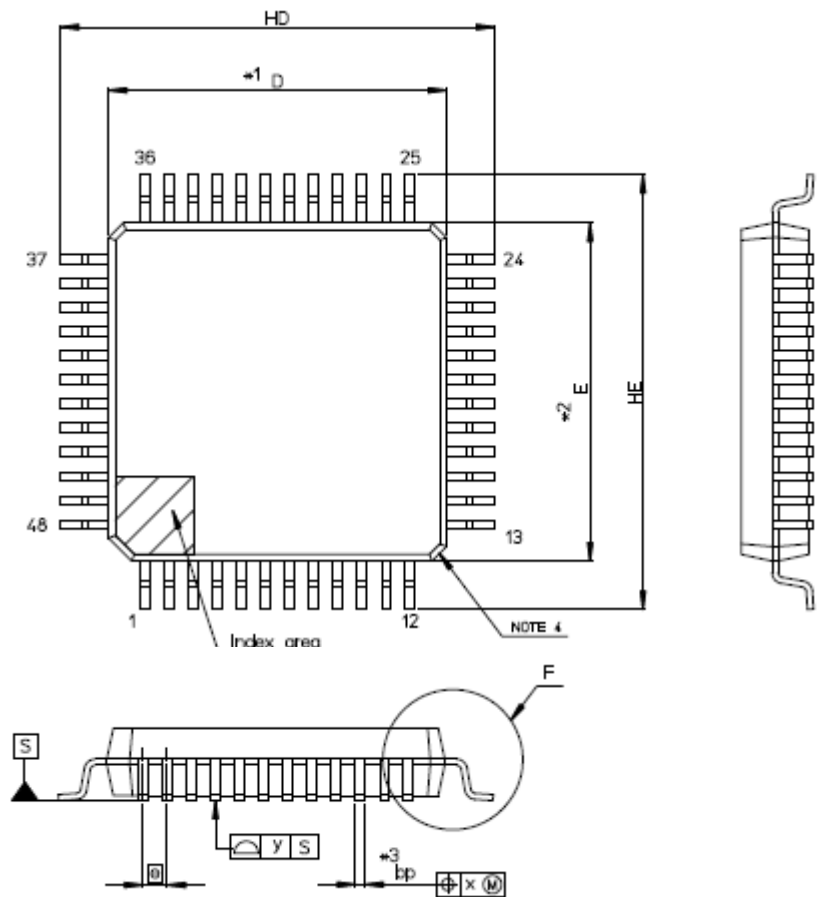


Reference Symbol	Dimension in Millimeters		
	Min.	Nom.	Max.
A	—	—	1.60
A <sub>1</sub>	0.05	—	0.15
A <sub>2</sub>	1.35	1.40	1.45
D	—	9.00	—
D1	—	7.00	—
E	—	9.00	—
E <sub>1</sub>	—	7.00	—
N	—	48	—
e	—	0.50	—
b	0.17	0.22	0.27
c	0.09	—	0.20
θ	0°	3.5°	7°
L	0.45	0.60	0.75
L <sub>1</sub>	—	1.00	—
aaa	—	—	0.20
bbb	—	—	0.20
ccc	—	—	0.08
ddd	—	—	0.08

# 2. DIFFERENCE OF SPECIFICATION'S DETAIL (6)

## 7x7mm 48pin LQFP package drawing (Current)

RENESAS Code : PLQP0048KB-B



Reference Symbol	Dimension in Millimeters		
	Min	Nom	Max
D	6.9	7.0	7.1
E	6.9	7.0	7.1
A2	—	1.4	—
HD	8.8	9.0	9.2
HE	8.8	9.0	9.2
A	—	—	1.7
A1	0.05	—	0.15
bp	0.17	0.20	0.27
c	0.09	—	0.20
e	0 <sup>°</sup>	3.5 <sup>°</sup>	8 <sup>°</sup>
e	—	0.5	—
x	—	—	0.08
y	—	—	0.08
Lp	0.45	0.6	0.75
L1	—	1.0	—

## 2. DIFFERENCE OF SPECIFICATION'S DETAIL (7)

### Dimension comparison: 7x7mm 48pin LQFP package

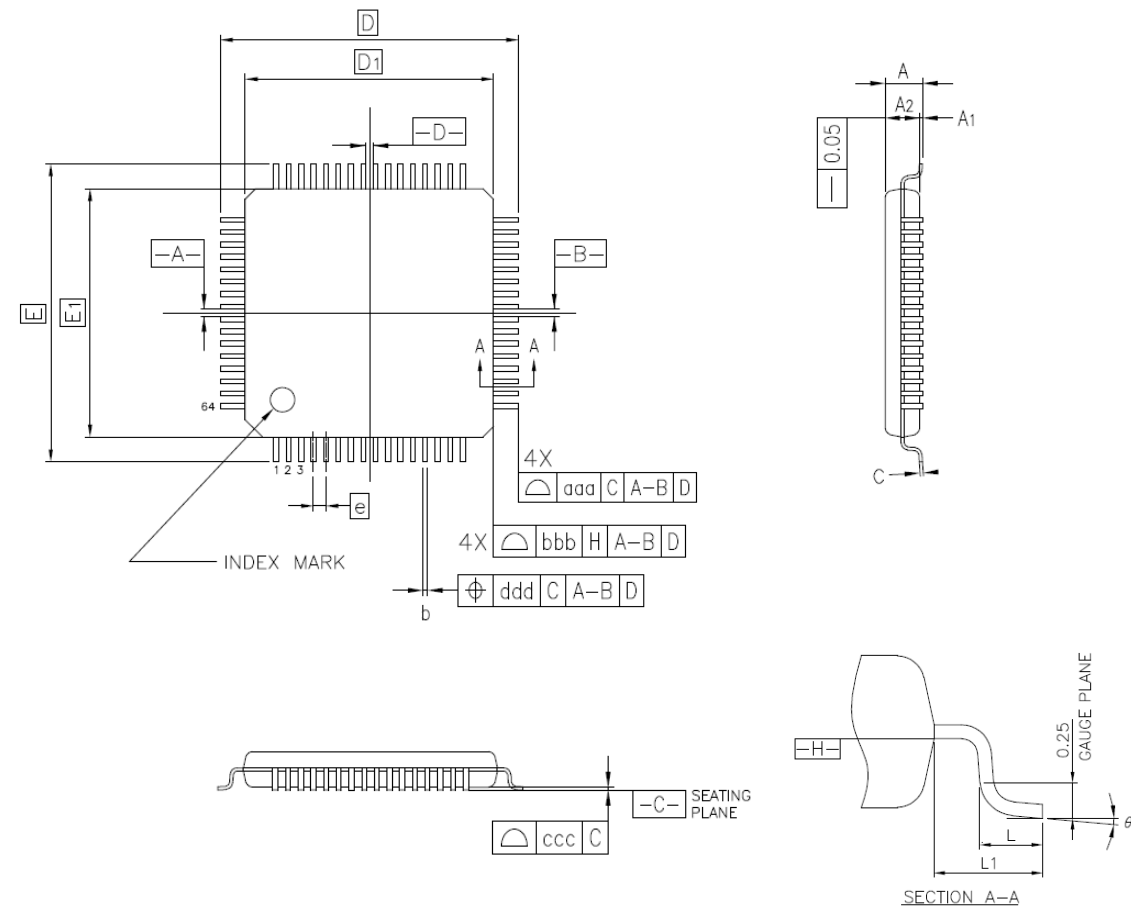
Greatek symbol is the same as the JEDEC standard.

Addition  Greatek Symbol	7x7mm 48pin LQFP PLQP0048KL-A			Current  RSB Symbol	7x7mm 48pin LQFP PLQP0048KB-B		
	Dimension in Millimeters				Dimension in Millimeters		
	Min	Nom	Max		Min	Nom	Max
A	-	-	1.60	A	-	-	1.70
A1	0.05	-	0.15	A1	0.05	-	0.15
A2	1.35	1.40	1.45	A2	-	1.40	-
D	-	9.00	-	HD	8.80	9.00	9.20
D1	-	7.00	-	D	6.90	7.00	7.10
E	-	9.00	-	HE	8.80	9.00	9.20
E1	-	7.00	-	E	6.90	7.00	7.10
N	-	48	-	-	-	-	-
e	-	0.50	-	e	-	0.50	-
b	0.17	0.22	0.27	bp	0.17	0.20	0.27
c	0.09	-	0.20	c	0.09	-	0.20
θ	0°	3.5°	7°	θ	0°	3.5°	8°
L	0.45	0.60	0.75	Lp	0.45	0.60	0.75
L1	-	1.00	-	L1	-	1.00	-
aaa	-	-	0.20	-	-	-	-
bbb	-	-	0.20	-	-	-	-
ccc	-	-	0.08	y	-	-	0.08
ddd	-	-	0.08	x	-	-	0.08

# 2. DIFFERENCE OF SPECIFICATION'S DETAIL (8)

## 10x10mm 64pin LQFP package drawing (Addition)

RENESAS Code : PLQP0064KL-A



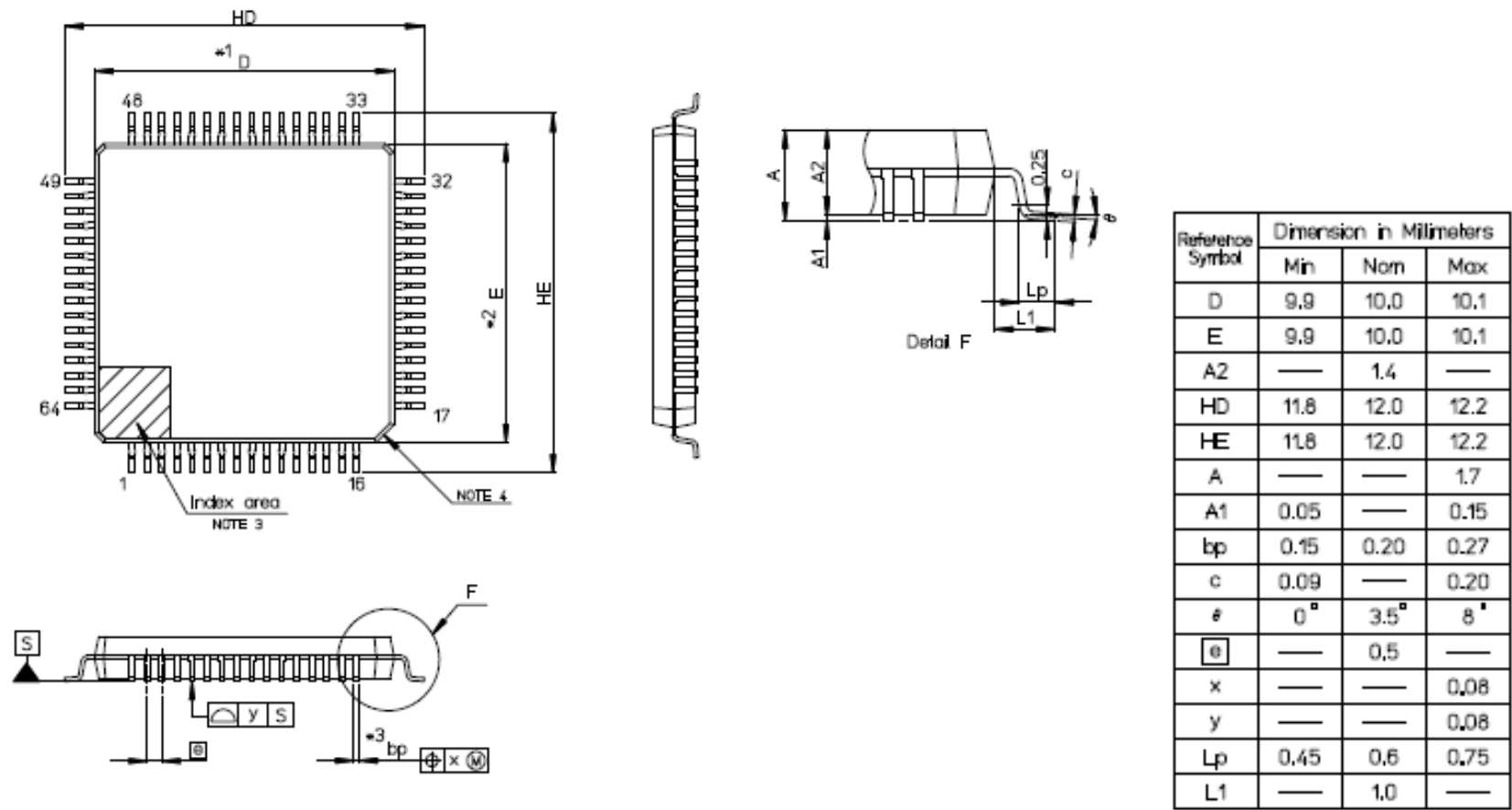
Reference Symbol	Dimension in Millimeters		
	Min.	Nom.	Max.
A	—	—	1.60
A <sub>1</sub>	0.05	—	0.15
A <sub>2</sub>	1.35	1.40	1.45
D	—	12.00	—
D1	—	10.00	—
E	—	12.00	—
E <sub>1</sub>	—	10.00	—
N	—	64	—
e	—	0.50	—
b	0.17	0.22	0.27
c	0.09	—	0.20
θ	0°	3.5°	7°
L	0.45	0.60	0.75
L <sub>1</sub>	—	1.00	—
aaa	—	—	0.20
bbb	—	—	0.20
ccc	—	—	0.08
ddd	—	—	0.08



# 2. DIFFERENCE OF SPECIFICATION'S DETAIL (9)

## 10x10mm 64pin LQFP package drawing (Current)

RENESAS Code : PLQP0064KB-C



## 2. DIFFERENCE OF SPECIFICATION'S DETAIL (10)

### Dimension comparison: 10x10mm 64pin LQFP package

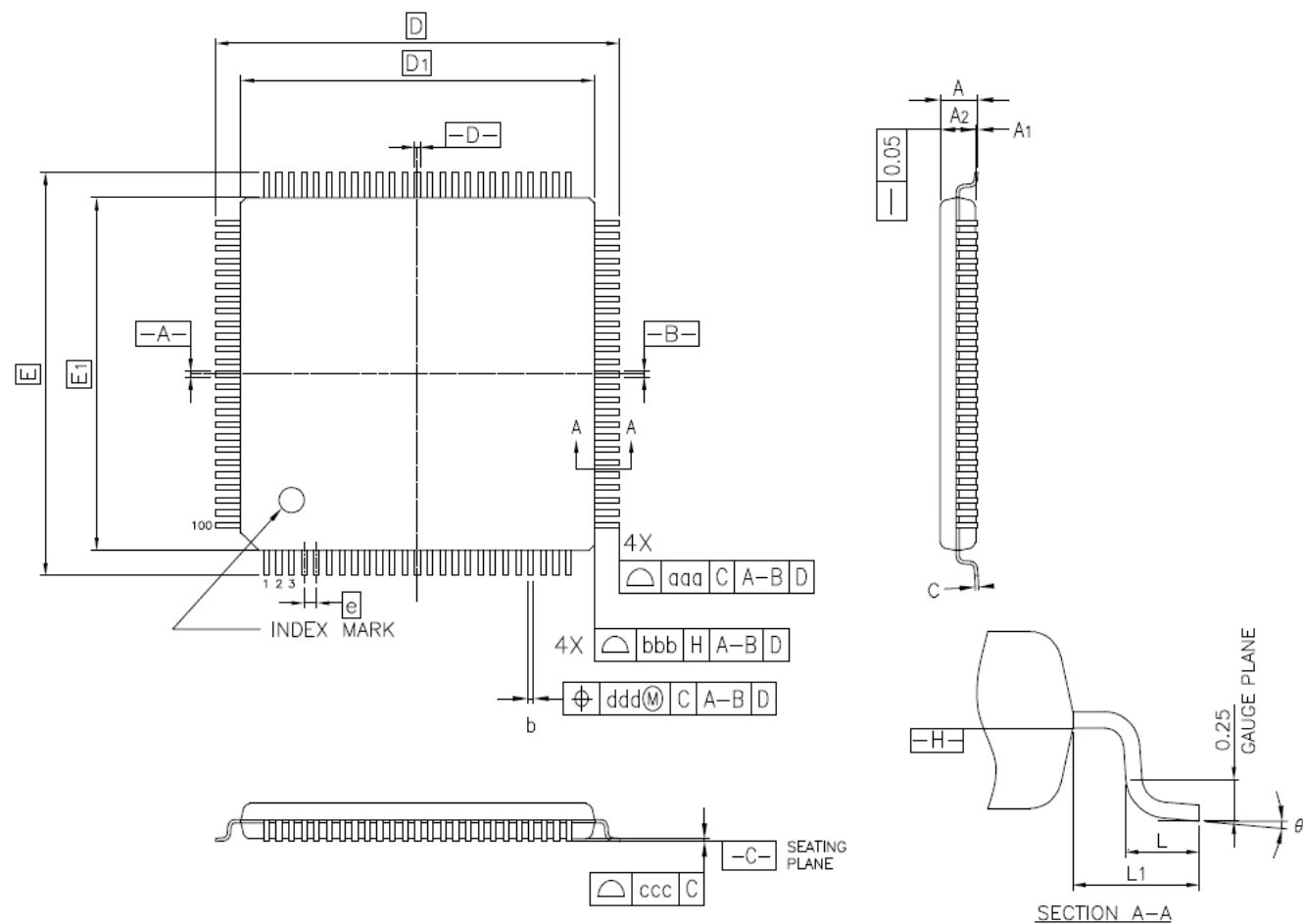
Greatek symbol is the same as the JEDEC standard.

Addition  Greatek Symbol	10x10mm 64pin LQFP PLQP0064KL-A			Current  RSB Symbol	10x10mm 64pin LQFP PLQP0064KB-C		
	Dimension in Millimeters				Dimension in Millimeters		
	Min	Nom	Max		Min	Nom	Max
A	-	-	1.60	A	-	-	1.70
A1	0.05	-	0.15	A1	0.05	-	0.15
A2	1.35	1.40	1.45	A2	-	1.40	-
D	-	12.00	-	HD	11.80	12.00	12.20
D1	-	10.00	-	D	9.90	10.00	10.10
E	-	12.00	-	HE	11.80	12.00	12.20
E1	-	10.00	-	E	9.90	10.00	10.10
N	-	64	-	-	-	-	-
e	-	0.50	-	e	-	0.50	-
b	0.17	0.22	0.27	bp	0.15	0.20	0.27
c	0.09	-	0.20	c	0.09	-	0.20
θ	0°	3.5°	7°	θ	0°	3.5°	8°
L	0.45	0.60	0.75	Lp	0.45	0.60	0.75
L1	-	1.00	-	L1	-	1.000	-
aaa	-	-	0.20	-	-	-	-
bbb	-	-	0.20	-	-	-	-
ccc	-	-	0.08	y	-	-	0.08
ddd	-	-	0.08	x	-	-	0.08

# 2. DIFFERENCE OF SPECIFICATION'S DETAIL (11)

## 14x14mm 100pin LQFP package drawing (Addition)

RENESAS Code : PLQP0100KP-A

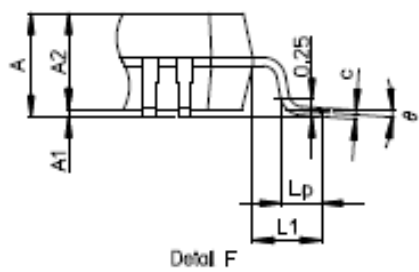
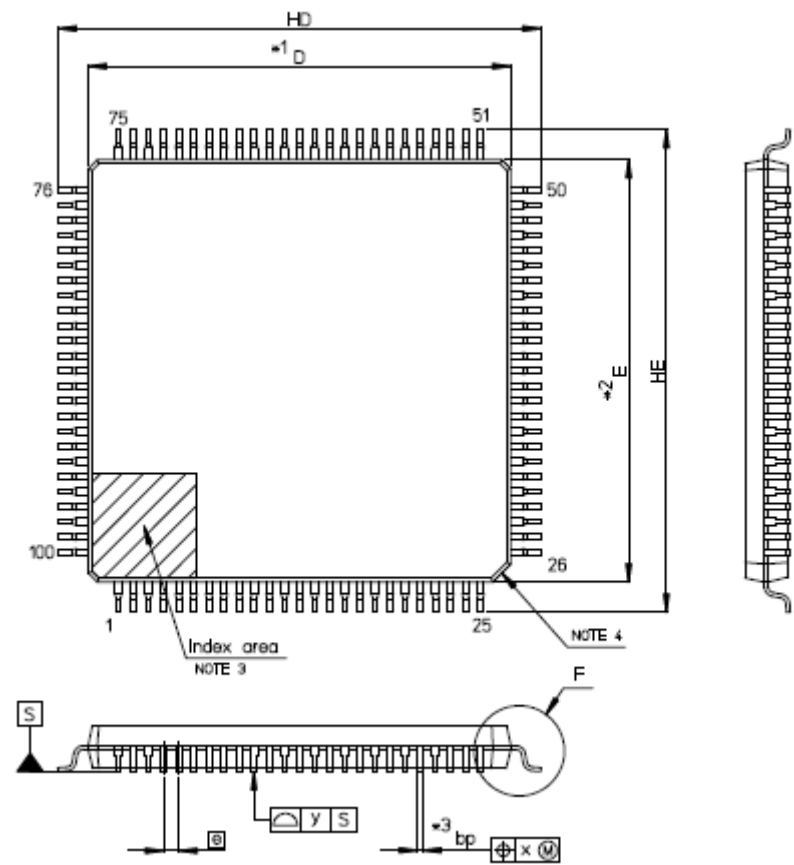


Reference Symbol	Dimension in Millimeters		
	Min.	Nom.	Max.
A	—	—	1.60
A <sub>1</sub>	0.05	—	0.15
A <sub>2</sub>	1.35	1.40	1.45
D	—	16.00	—
D <sub>1</sub>	—	14.00	—
E	—	16.00	—
E <sub>1</sub>	—	14.00	—
N	—	100	—
e	—	0.50	—
b	0.17	0.22	0.27
c	0.09	—	0.20
θ	0°	3.5°	7°
L	0.45	0.60	0.75
L <sub>1</sub>	—	1.00	—
aaa	—	—	0.20
bbb	—	—	0.20
ccc	—	—	0.08
ddd	—	—	0.08

# 2. DIFFERENCE OF SPECIFICATION'S DETAIL (12)

## 14x14mm 100pin LQFP package drawing (Current)

RENESAS Code : PLQP0100KB-B



Reference Symbol	Dimension in Millimeters		
	Min	Nom	Max
D	13.9	14.0	14.1
E	13.9	14.0	14.1
A2	—	1.4	—
HD	15.8	16.0	16.2
HE	15.8	16.0	16.2
A	—	—	1.7
A1	0.05	—	0.15
bp	0.15	0.20	0.27
c	0.09	—	0.20
e	0*	3.5*	8*
e	—	0.5	—
x	—	—	0.08
y	—	—	0.08
Lp	0.45	0.6	0.75
L1	—	1.0	—

## 2. DIFFERENCE OF SPECIFICATION'S DETAIL (13)

### Dimension comparison: 14x14mm 100pin LQFP package

Greatek symbol is the same as the JEDEC standard.

Addition  Greatek Symbol	14x14mm 100pin LQFP PLQP0100KP-A			Current  RSB Symbol	14x14mm 100pin LQFP PLQP0100KB-B		
	Dimension in Millimeters				Dimension in Millimeters		
	Min	Nom	Max		Min	Nom	Max
A	-	-	1.60	A	-	-	1.70
A1	0.05	-	0.15	A1	0.05	-	0.15
A2	1.35	1.40	1.45	A2	-	1.40	-
D	-	16.00	-	HD	15.80	16.00	16.20
D1	-	14.00	-	D	13.90	14.00	14.10
E	-	16.00	-	HE	15.80	16.00	16.20
E1	-	14.00	-	E	13.90	14.00	14.10
N	-	100	-	-	-	-	-
e	-	0.50	-	e	-	0.50	-
b	0.17	0.22	0.27	bp	0.15	0.20	0.27
c	0.09	-	0.20	c	0.09	-	0.20
θ	0°	3.5°	7°	θ	0°	3.5°	8°
L	0.45	0.60	0.75	Lp	0.45	0.60	0.75
L1	-	1.00	-	L1	-	1.000	-
aaa	-	-	0.20	-	-	-	-
bbb	-	-	0.20	-	-	-	-
ccc	-	-	0.08	y	-	-	0.08
ddd	-	-	0.08	x	-	-	0.08

# 2. DIFFERENCE OF SPECIFICATION'S DETAIL (14)

Appearance: 14x14mm 100pin LQFP package

※Marked character is reference example

	Package surface	Package back	Worked Leads shape
Current			
Addition			





\* There is no WS notation in the actual product



# 2. DIFFERENCE OF SPECIFICATION'S DETAIL (15)

## Marking Font

※Marked character is reference example

Assembly Line	Current	Addition
Whole Photo		
Detail Photo		

\* There is no WS notation in the actual product

## 2. DIFFERENCE OF SPECIFICATION'S DETAIL (16)

Comparison of tape & reel material details: 14x14mm 100pin LQFP package

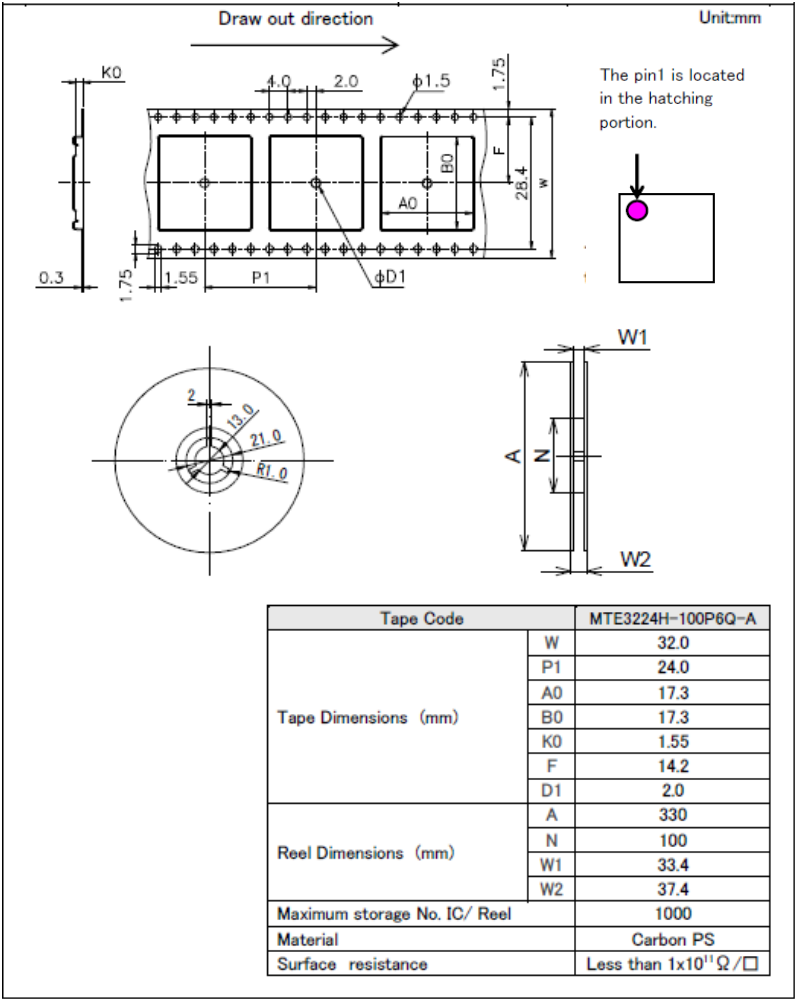
Packing material	Item	Current	Addition
Emboss tape	Taping code	MTE3224H-100P6Q-A	E2424Q14RA
	Sprocket hole	Both side	One side
	Tape width	32mm	24mm
	Tape thickness	0.3mm	0.3mm
	Cavity size	17.3x17.3	16.5x16.5
	Cavity depth	1.55mm	1.4mm
	Distance between cavity centers	24mm	24mm
	Material	PS	PS
Reel	Reel diameter	330mm	330mm
	Core diameter	100mm	100mm
	Reel width	32mm	24mm
Cover tape	Width	25.5mm	21.3mm



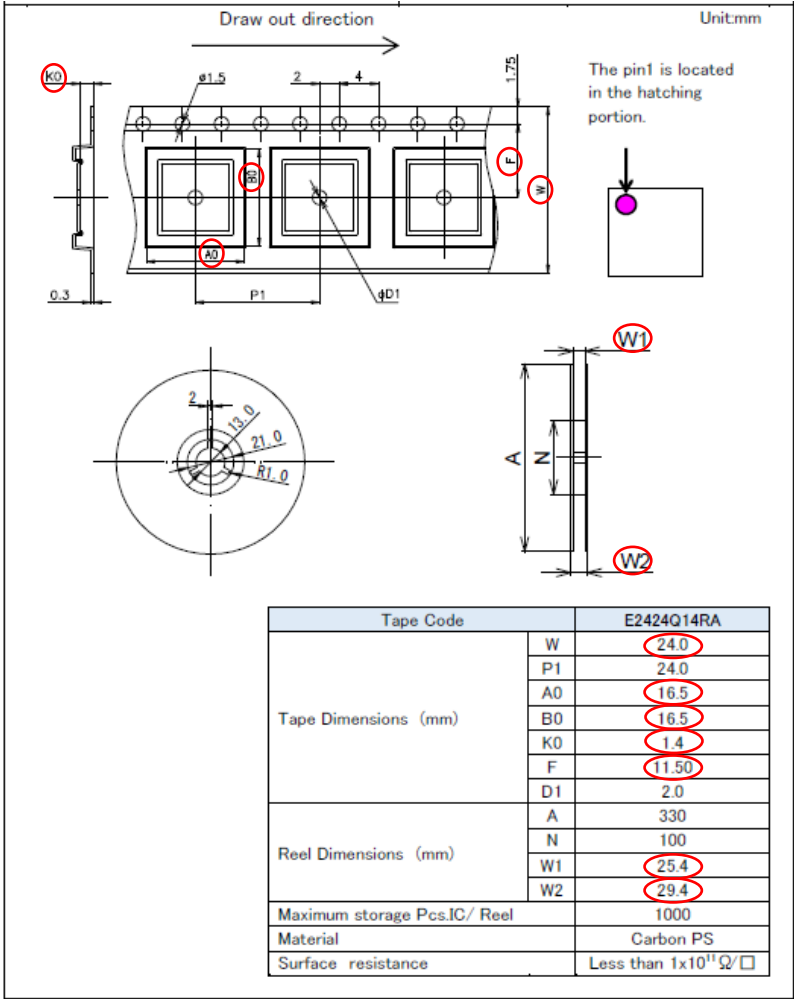
# 2. DIFFERENCE OF SPECIFICATION'S DETAIL (17)

Comparison of tape & reel dimension: 14mm x14mm x 1.4mm Tape & Reel

Current (W:32mm)



Addition (W:24mm)



### 3. 4M changing points (Add the assembly factory and materials)

Item	Check result	Judgement
<b>Machine</b>	Changing at assembly. The machines are equivalent to present machines. There are production of similar copper wire products and we have already checked the additional products have no risk on the production.	<b>No risk</b>
<b>Method</b>	The same as current products.	<b>No risk</b>
<b>Man</b>	Adopt operator certification system. Only certificated operator can work for the production.	<b>No risk</b>
<b>Material</b>	Only use certificated materials. The products has been certificated by reliability test same as present products and have no risk.	<b>No risk</b>

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