PCN# : [MCP-AC-22-0034]

Product Change Notice (PCN)

Subject: Addition of production sites for RL78/G11(24pin), G1F, G13, G14, G1C.

Publication Date: 11/2/2022
Effective Date: 1/31/2023
Revision Description: Initial release.

Description of Change:

1) Addition of QFN Assembly, Final test, Packing site : UTAC Thai Limited (UTAC)
2) Addition of Wafer fabrication site : Renesas Semiconductor Manufacturing Saijo

Production Flow

Before change			After change		
Wafer fab	ASSY	FT & PACKING	Wafer fab	ASSY	FT & PACKING
Kawashiri	Greatek	KYEC	Kawashiri	Greatek	KYEC
				UTAC	**UTAC**
			Saijo	**UTAC**	**UTAC**

Note: “**Bold**: Site addition”

3) Assembly material
   Lead frame, Die mount paste and Mold resin use materials certified by the additional site.
4) Package Outline
   There is no change in the footprint pattern of additional site products.
5) Marking
   Change the marking font.
6) Packing
   Packing use materials certified by the additional site.
   *A new packing form will be added.
   This means that the existing and new packing forms may be used concurrently.

Affected Product List:

R5F1057AANA#00	R5F1057AANA#20	R5F1057AANA#40	R5F1057AGNA#00
R5F1057AGNA#20	R5F1057AGNA#40	R5F11B7CANA#00	R5F11B7CANA#20
R5F11B7CANA#40	R5F11B7CGNA#00	R5F11B7CGNA#20	R5F11B7CGNA#40
R5F11B7EANA#00	R5F11B7EANA#20	R5F11B7EANA#40	R5F11B7EGNA#00
R5F11B7EGNA#20	R5F11B7EGNA#40	R5F100BFANA#00	R5F100BFANA#20
R5F100BFANA#40	R5F100BFGNA#00	R5F100BFGNA#20	R5F100BFGNA#40
R5F100BGANA#00	R5F100BGANA#20	R5F100BGANA#40	R5F100BGGNA#00
R5F100BGGNA#20	R5F100BGGNA#40	R5F101BFANA#00	R5F101BFANA#20
R5F101BFANA#40	R5F101BGANA#00	R5F101BGANA#20	R5F101BGANA#40
R5F104BAANA#00	R5F104BAANA#20	R5F104BAANA#40	R5F104BAGNA#00
R5F104BAGNA#20	R5F104BAGNA#40	R5F104BCANA#00	R5F104BCANA#20
R5F104BCANA#40	R5F104BCGNA#00	R5F104BCGNA#20	R5F104BCGNA#40
R5F104BDANA#00	R5F104BDANA#20	R5F104BDANA#40	R5F104BDGNA#00
R5F104BDGNA#20	R5F104BDGNA#40	R5F104BEANA#00	R5F104BEANA#20
R5F104BEANA#40	R5F104BEGNA#00	R5F104BEGNA#20	R5F104BEGNA#40
R5F104BFANA#00	R5F104BFANA#20	R5F104BFANA#40	R5F104BFGNA#00
R5F104BFGNA#20	R5F104BFGNA#40	R5F104BGANA#00	R5F104BGANA#20
R5F104BGANA#40	R5F104BGGNA#00	R5F104BGGNA#20	R5F104BGGNA#40
R5F10JBCANA#00	R5F10JBCANA#20	R5F10JBCANA#40	R5F10JBCGNA#00
R5F10JBCGNA#20	R5F10JBCGNA#40	R5F10KBCANA#00	R5F10KBCANA#20
R5F10KBCANA#40	R5F10KBCGNA#00	R5F10KBCGNA#20	R5F10KBCGNA#40
R5F11BBCANA#00	R5F11BBCANA#20	R5F11BBCANA#40	R5F11BBCGNA#00
R5F11BBCGNA#20	R5F11BBCGNA#40	R5F11BBEANA#00	R5F11BBEANA#20

R5F11BBEANA#40	R5F11BBEGNA#00	R5F11BBEGNA#20	R5F11BBEGNA#40
R5F1057AAA00NA#40	R5F1057AAA01NA#40	R5F1057AAA02NA#40	R5F100BGG301NA#20
R5F10KBCAA00NA#40			

Reason for Change:
Stable supply for RL78 series QFN package products.

Impact on Fit, Form, Function, Quality & Reliability:
Impact on Fit : No Impact
Form : Please refer to "MCP-AB-22-0105_RL78_QFN_Difference specification UTAC" for detail.
Function : No Impact
Quality : No Impact
Reliability : No Impact

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

Qualification Status: We will prepare by 11/30/2022.

Sample Availability Date: 1/31/2023
PCN sample is a representative CS sample.
The CS sample has the same functionality as the mass-produced product
and its sample is the representative (ROM/RAM capacity, Fields of application and Wafer fab).

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.

Difference of specification (RL78 family HWQFN products) 4mm×4mm 0.5mm pitch 24pin 5mm×5mm 0.5mm pitch 32pin

Additional Assembly & Final test & Packing site: UTAC
Additional Wafer fabrication: Saijo

November 2. 2022

MCU Product Marketing Department
MCU Device Solution Business Division
IoT and Infrastructure Business Unit
Renesas Electronics Corporation

Rev. 1.0

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MCP-AB-22-0105

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(Rev. 5.0-1 October 2020)

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Difference outline

■ Target packages

4mm×4mm 0.5mm pitch 24pin HWQFN

5mm×5mm 0.5mm pitch 32pin HWQFN

■ Difference points

1) Assembly site

Existing site: Greatek Electronics Inc. (Greatek)

Additional site: UTAC Thai Limited (UTAC)

2) Final test & Packing site

Existing site: King Yuan Electronics Co., Ltd (KYEC)

Additional site: UTAC Thai Limited (UTAC)

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Difference outline

3) Wafer fabrication
Existing site: Renesas Semiconductor Manufacturing Kawashiri
Additional site: Renesas Semiconductor Manufacturing Saijo
*At the same time as the addition of UTAC, the Saijo factory will be added to the wafer fabrication.

4) Assembly material
Lead frame, Die mount paste and Mold resin use materials certified by the additional site.

5) Package outline
There is no change in the footprint pattern of additional site products.
Please refer to the package outline drawing and dimension comparison for the external dimensions.

6) Marking
Change the marking font.

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Difference outline

7) Packing

Packing will be added. Packing use materials certified by the additional site.

*A new packing form will be added.

This means that the existing and new packing forms may be used concurrently.

8) Storage conditions after opening the moisture barrier bag

No change

Less than 30℃/60%RH/168hr（JEDEC standard）

9) Specification and characteristics of product

No change

10) Quality and reliability

No change

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Difference of specification

Item		Additional site	Existing site
Wafer fabrication		Saijo	Kawashiri
Assembly site		UTAC	Greatek
Final test & Packing site		UTAC	KYEC
Package	Outline	There are differences (Refer to pages 7 to 13)	
Lead frame	Material	No change	
	Inner pattern	No change	
Die mount	Material	Ag epoxy paste B *	Ag epoxy paste A *
Bonding wire	Material	No change; Cu (Pd coating)	
Resin	Material	Epoxy resin B * (halogen-free)	Epoxy resin A * (halogen-free)
Plating	Material	No change	
Marking	Font	There are differences (Refer to page 14)	
	Digit number	No change	
Packing	Tray/ Emboss tape	There are differences (Refer to pages 15 to 23)	
Storage conditions	after opening	No change	

* Site certified materials.
There are differences in materials, but there is no change in reliability or characteristics.

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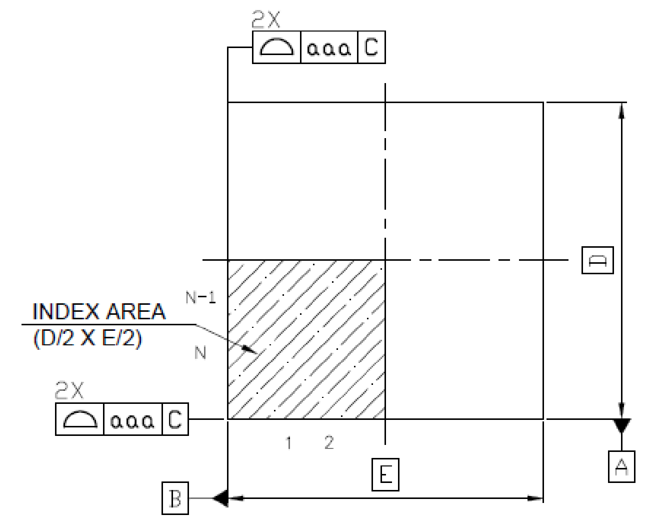
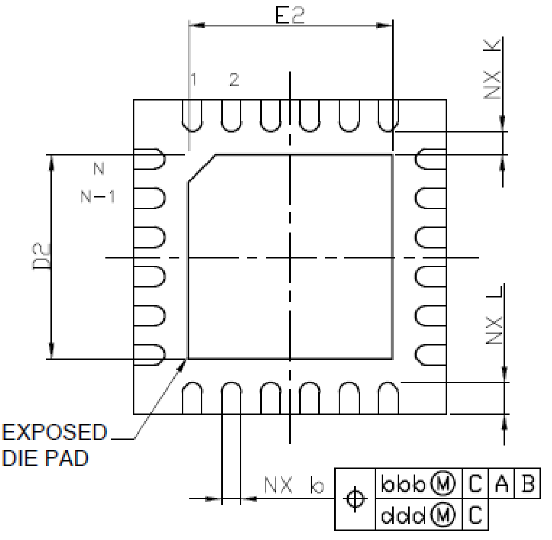
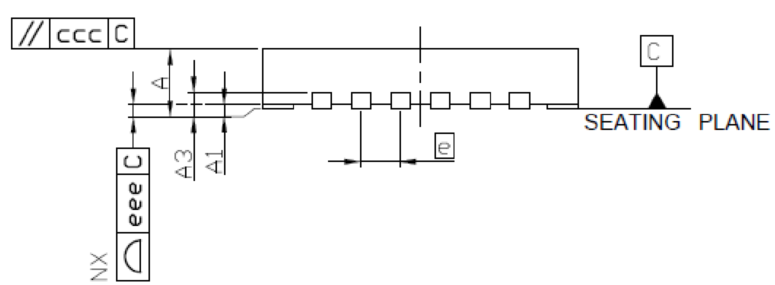
4mm×4mm 0.5mm pitch 24pin HWQFN Package outline (UTAC)

RENESAS Code : PWQN0024KH-A







UTAC Symbol	4x4mm 24pin HWQFN PWQN0024KH-A		
	Dimension in Millimeters		
	Min	Nom	Max
	-	-	0.80
A1	0.00	-	0.05
A3	0.20 REF.		
b	0.20	0.25	0.30
D	-	4.00	-
E	-	4.00	-
e	-	0.50	-
N	24		
L	0.30	0.40	0.50
K	0.20	-	-
D2	2.50	2.60	2.70
E2	2.50	2.60	2.70
aaa	-	-	0.15
bbb	-	-	0.10
ccc	-	-	0.10
ddd	-	-	0.05
eee	-	-	0.08

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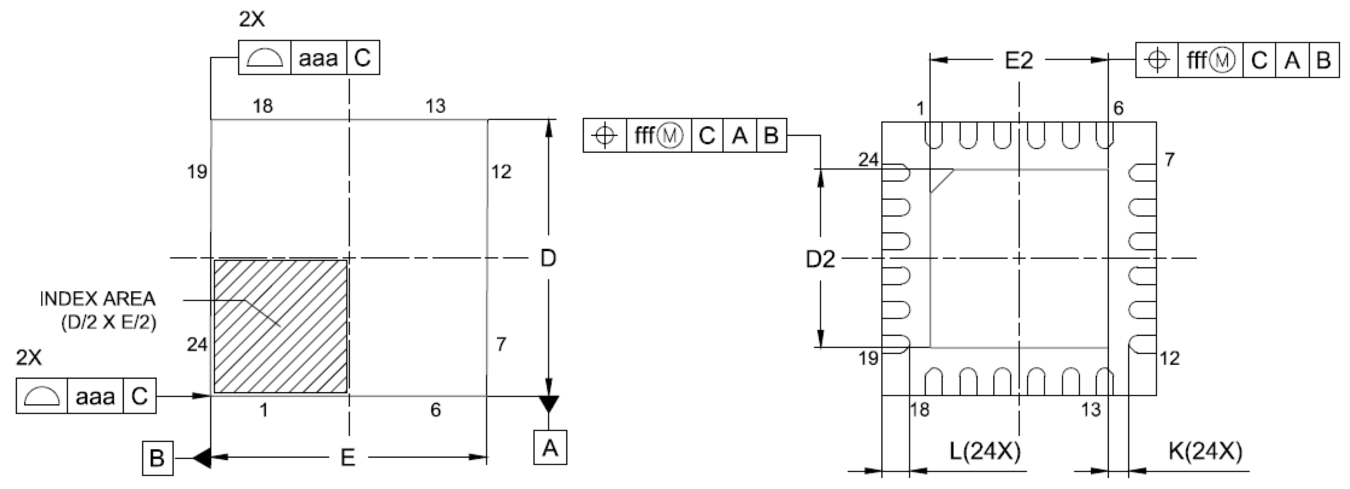
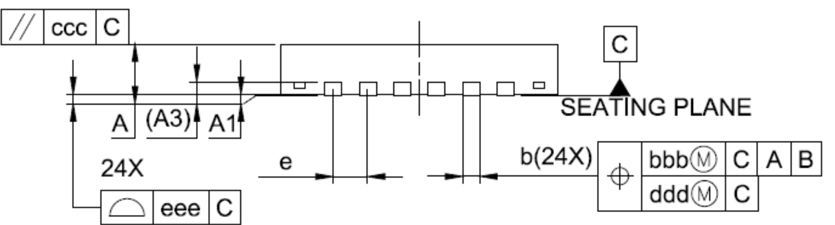
4mm×4mm 0.5mm pitch 24pin HWQFN Package outline (Greatek)

RENESAS Code : PWQN0024KF-A





Greatek Symbol	4x4mm 24pin HWQFN PWQN0024KF-A		
	Dimension in Millimeters		
	Min	Nom	Max
A	-	-	0.80
A1	0.00	0.02	0.05
A3	0.203 REF.		
b	0.18	0.25	0.30
D	4.00 BSC		
E	4.00 BSC		
e	0.50 BSC		
L	0.35	0.40	0.45
K	0.20	-	-
D2	2.55	2.60	2.65
E2	2.55	2.60	2.65
aaa	0.15		
bbb	0.10		
ccc	0.10		
ddd	0.05		
eee	0.08		
fff	0.10		

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Dimension comparison: 4mm×4mm 0.5mm pitch 24pin HWQFN

Package symbols
complied JEDEC standard.

UTAC Symbol	4x4mm 24pin HWQFN PWQN0024KH-A Dimension in Millimeters			Greatek Symbol	4x4mm 24pin HWQFN PWQN0024KF-A Dimension in Millimeters		
	Min	Nom	Max		Min	Nom	Max
A	-	-	0.80	A	-	-	0.80
A1	0.00	-	0.05	A1	0.00	0.02	0.05
A3	0.20 REF.			A3	0.203 REF.		
b	0.20	0.25	0.30	b	0.18	0.25	0.30
D	-	4.00	-	D	4.00 BSC		
E	-	4.00	-	E	4.00 BSC		
e	-	0.50	-	e	0.50 BSC		
N	24			-	-	-	-
L	0.30	0.40	0.50	L	0.35	0.40	0.45
K	0.20	-	-	K	0.20	-	-
D2	2.50	2.60	2.70	D2	2.55	2.60	2.65
E2	2.50	2.60	2.70	E2	2.55	2.60	2.65
aaa	-	-	0.15	aaa	0.15		
bbb	-	-	0.10	bbb	0.10		
ccc	-	-	0.10	ccc	0.10		
ddd	-	-	0.05	ddd	0.05		
eee	-	-	0.08	eee	0.08		
-	-	-	-	fff	0.10		

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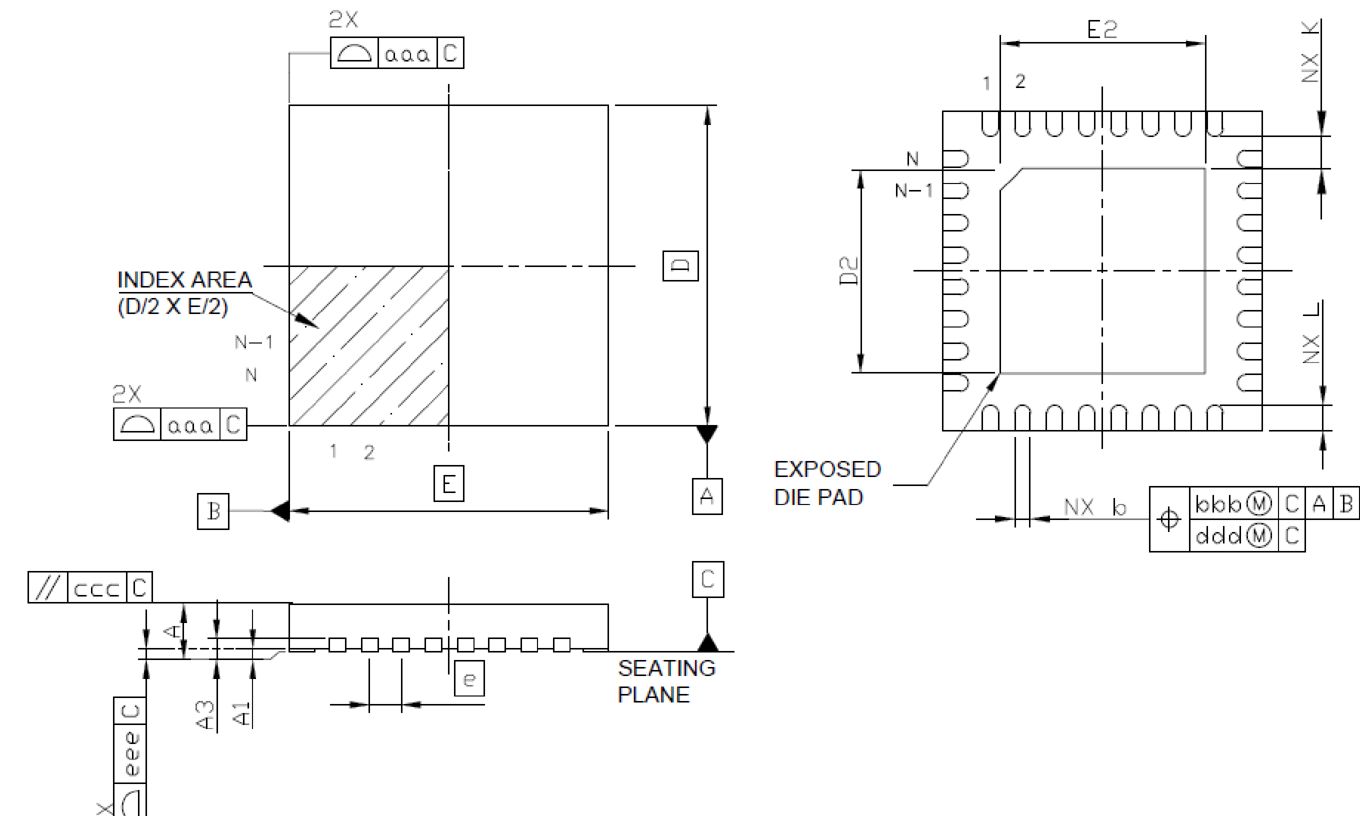
5mm×5mm 0.5mm pitch 32pin HWQFN Package outline (UTAC)

RENESAS Code : PWQN0032KG-A



UTAC Symbol	5x5mm 32pin HWQFN PWQN0032KG-A		
	Dimension in Millimeters		
	Min	Nom	Max
A	-	-	0.80
A1	0.00	-	0.05
A3	0.20 REF.		
B	0.20	0.25	0.30
D	-	5.00	-
E	-	5.00	-
e	-	0.50	-
N	32		
L	0.30	0.40	0.50
K	0.20	-	-
D2	3.10	3.20	3.30
E2	3.10	3.20	3.30
aaa	-	-	0.15
bbb	-	-	0.10
ccc	-	-	0.10
ddd	-	-	0.05
eee	-	-	0.08

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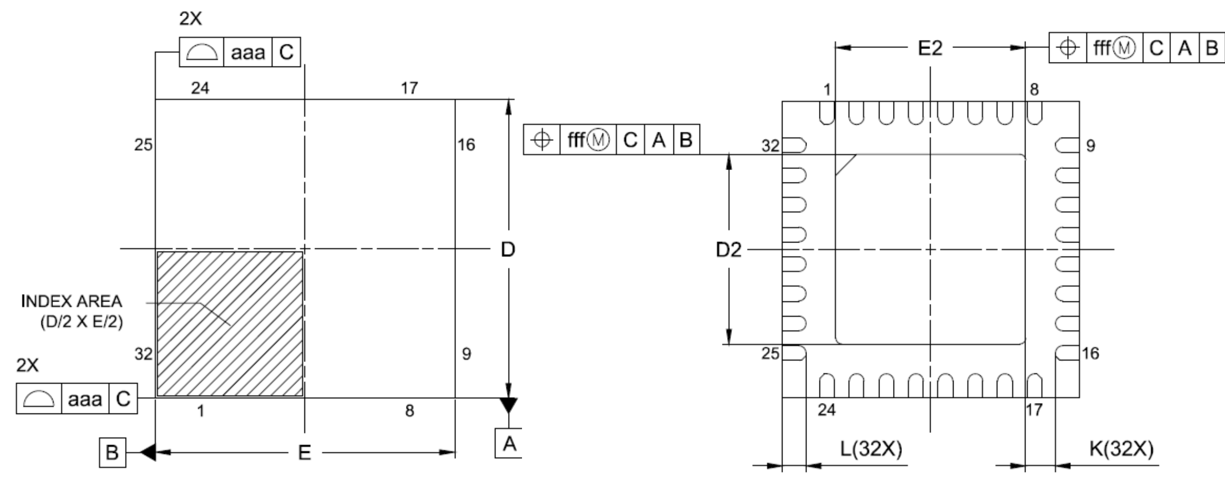
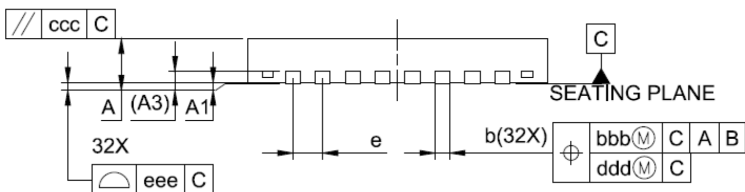
5mm×5mm 0.5mm pitch 32pin HWQFN Package outline (Greatek)

RENESAS Code : PWQN0032KE-A





Greatek Symbol	5x5mm 32pin HWQFN PWQN0032KE-A		
	Dimension in Millimeters		
	Min	Nom	Max
A	-	-	0.80
A1	0.00	0.02	0.05
A3	0.203 REF.		
b	0.18	0.25	0.30
D	5.00 BSC		
E	5.00 BSC		
e	0.50 BSC		
L	0.35	0.40	0.45
K	0.20	-	-
D2	3.15	3.20	3.25
E2	3.15	3.20	3.25
aaa	0.15		
bbb	0.10		
ccc	0.10		
ddd	0.05		
eee	0.08		
fff	0.10		

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Dimension comparison: 5mm×5mm 0.5mm pitch 32pin HWQFN

Package symbols complied JEDEC standard.

UTAC Symbol	5x5mm 32pin HWQFN PWQN0032KG-A			Greatek Symbol	5x5mm 32pin HWQFN PWQN0032KE-A		
	Dimension in Millimeters				Dimension in Millimeters		
	Min	Nom	Max		Min	Nom	Max
A	-	-	0.80	A	-	-	0.80
A1	0.00	-	0.05	A1	0.00	0.02	0.05
A3	0.20 REF.			A3	0.203 REF.		
B	0.20	0.25	0.30	b	0.18	0.25	0.30
D	-	5.00	-	D	5.00 BSC		
E	-	5.00	-	E	5.00 BSC		
e	-	0.50	-	e	0.50 BSC		
N	32			N	-	-	-
L	0.30	0.40	0.50	L	0.35	0.40	0.45
K	0.20	-	-	K	0.20	-	-
D2	3.10	3.20	3.30	D2	3.15	3.20	3.25
E2	3.10	3.20	3.30	E2	3.15	3.20	3.25
aaa	-	-	0.15	aaa	0.15		
bbb	-	-	0.10	bbb	0.10		
ccc	-	-	0.10	ccc	0.10		
ddd	-	-	0.05	ddd	0.05		
eee	-	-	0.08	eee	0.08		
-	-	-	-	fff	0.10		

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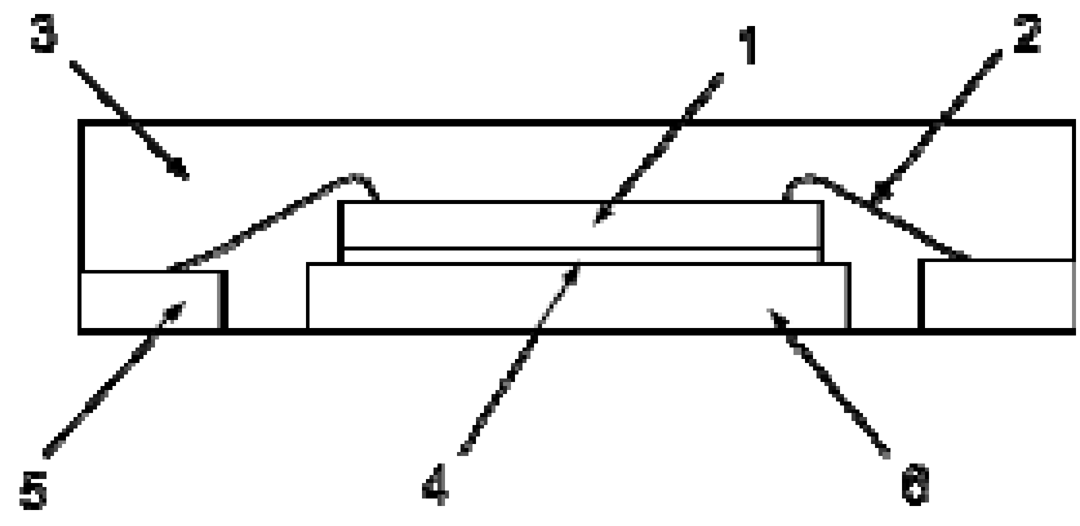
Package structure image

* Package Section and die pad shape is a reference example.



No.	部材 Part
1	チップ Die
2	ワイヤ Wire
3	封止材 Molding material
4	ダイアタッチ材 Die attach material
5	Cu リード:Ni/Pd/Au めっき Cu lead:Ni/Pd/Au plating
6	ダイパッド Die pad

* Different materials will be used at UTAC but their structure is same as those conventionally used.

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Marking visibility

*Character is reference example

Assembly site	Additional (UTAC)	Existing (Greatek)
Overall photo	R5F1007EA 1234567	R5F1027AA 9428902
Enlarged photo	R5F	R5F

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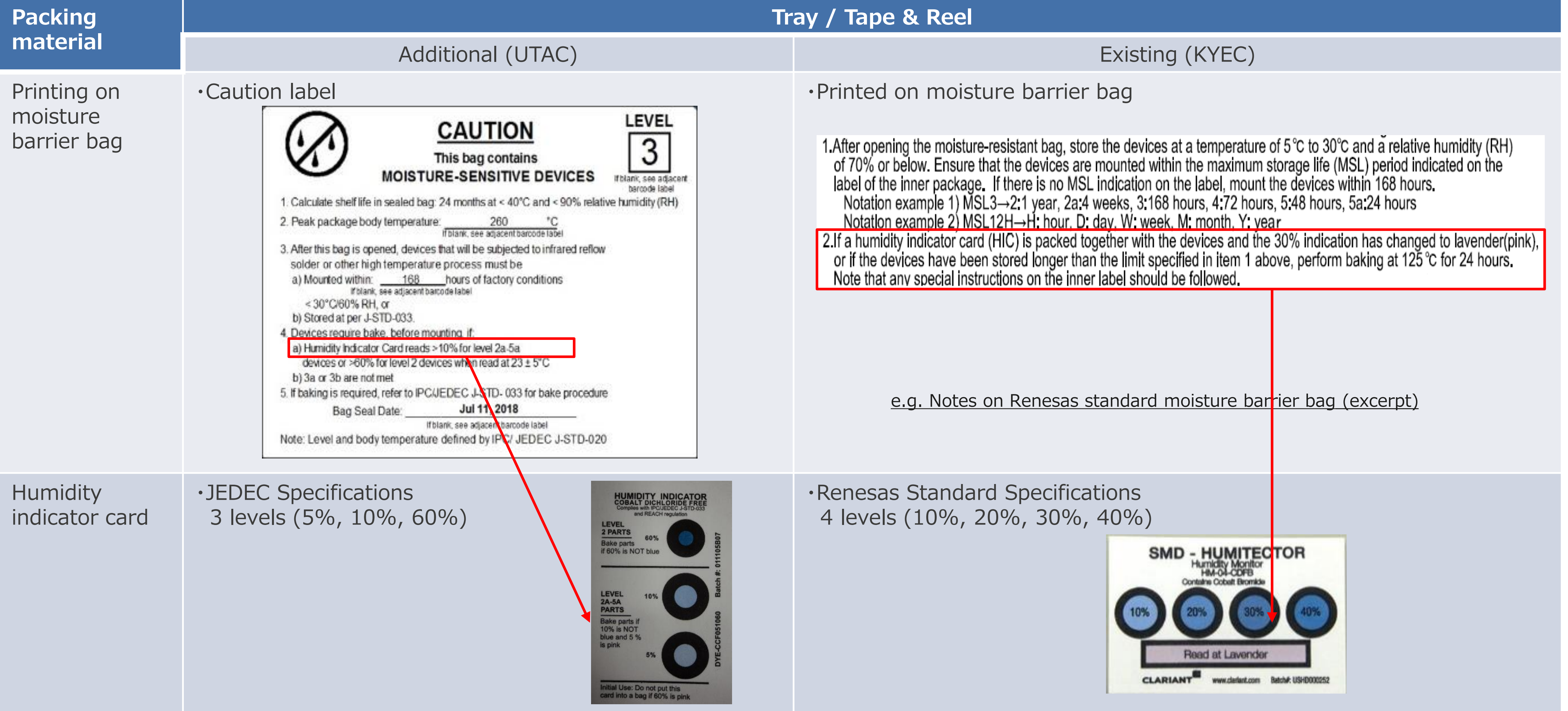
Printing on moisture barrier bag / Humidity indicator card (Tray/Tape & Reel common)



Packing material	Tray / Tape & Reel	
	Additional (UTAC)	Existing (KYEC)
Printing on moisture barrier bag	・Caution label	・Printed on moisture barrier bag e.g. Notes on Renesas standard moisture barrier bag (excerpt)
Humidity indicator card	・JEDEC Specifications 3 levels (5%, 10%, 60%)	・Renesas Standard Specifications 4 levels (10%, 20%, 30%, 40%)

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Packing specification for Tray

Packing material	Tray	
	Additional (UTAC)	Existing (KYEC)
Number of trays contained in the inner box	・Tray : 8 trays＋ 1 cover Band	・Tray : 8 trays＋ 1 cover Band
Band	・Band : 4 (3 on the short side + 1 on the long side)	・Band : 3 (3 on the short side)
Desiccant	・Weight : 33g	・Weight : 25g+25g

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Packing specification for Tray

Packing material	Tray	
	Additional (UTAC)	Existing (KYEC)
Moisture barrier bag *Refer to page 18 for printed characters.	・Size：228.6mm×508mm Inner label Caution label	・Size：250mm×510mm Inner label
Inner box	・Size：163mm×375mm×115mm Inner Box Filament tape Inner label Bubble sheet	・Size：152mm×330mm×75mm Inner Box Inner label

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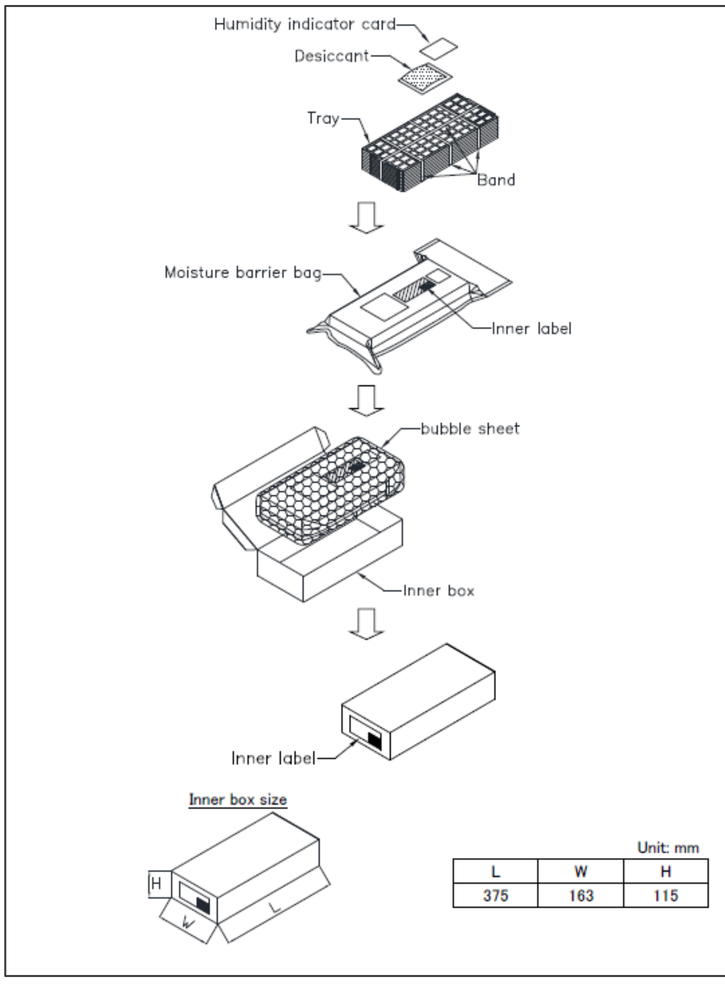
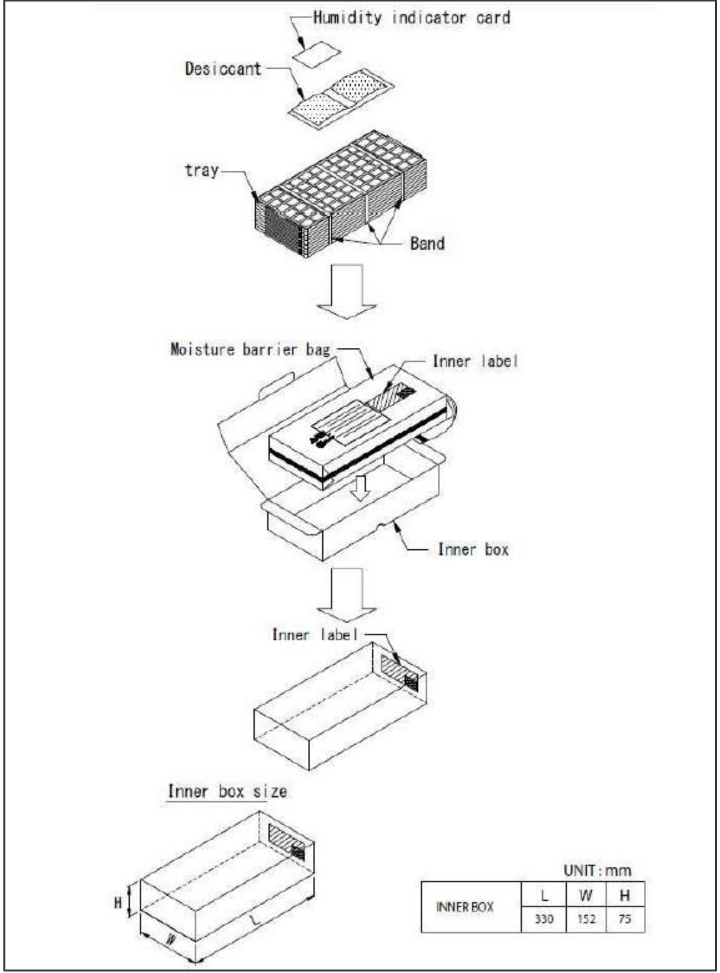
Packing specification for Tray

Additional (UTAC)



Existing (KYEC)



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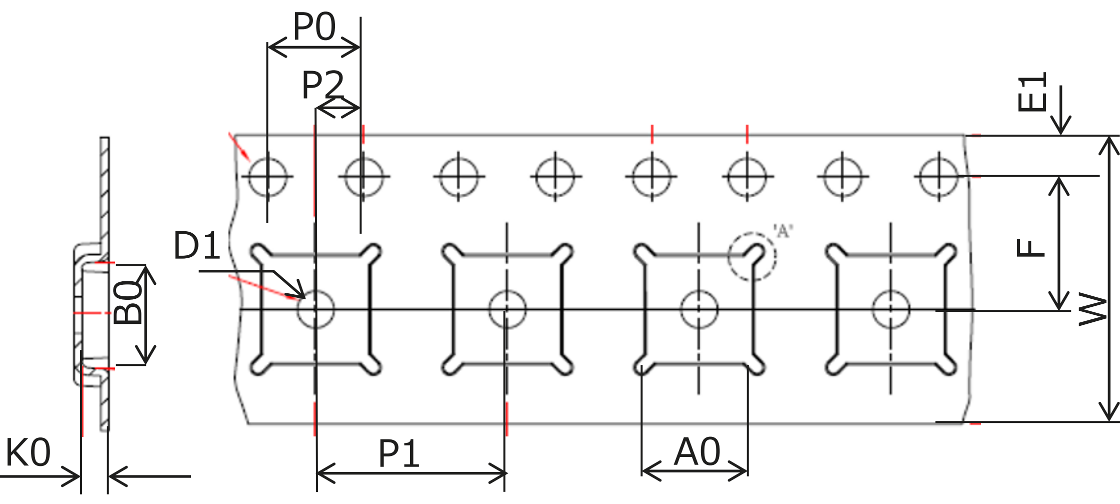
Dimension comparison: 4mm×4mm 24pin HWQFN Emboss tape



Unit: mm

Symbol	Additional (UTAC)	Existing (KYEC)
A0	4.30	4.25
B0	4.30	4.25
K0	1.10	1.10
P1	8.00	8.00
W	12.00	12.00
E1	1.75	1.75
P0	4.00	4.00
F	5.50	5.50
P2	2.00	2.00
D1	Φ1.50MIN	Φ1.60

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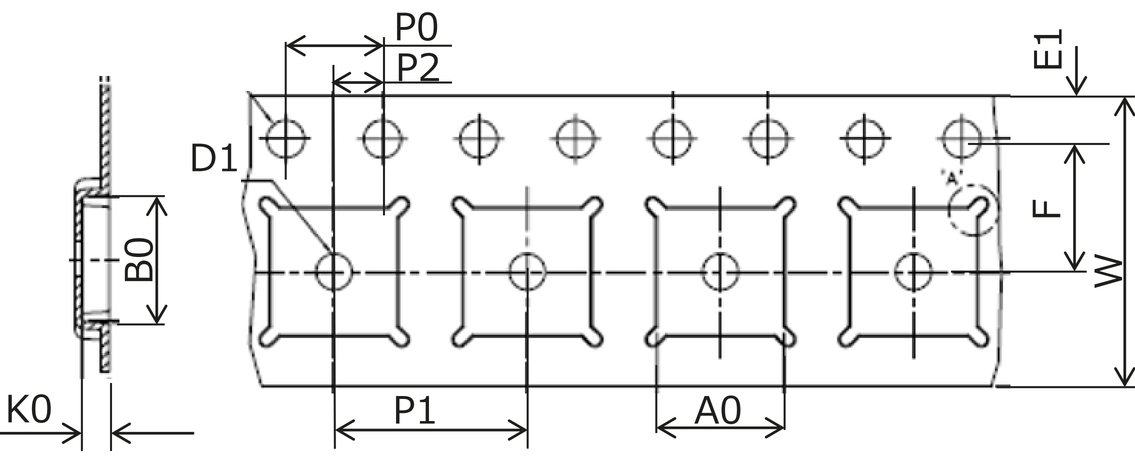
Dimension comparison: 5mm×5mm 32pin HWQFN Emboss tape



Unit: mm

Symbol	Additional (UTAC)	Existing (KYEC)
A0	5.25	5.30
B0	5.25	5.30
K0	1.10	1.10
P1	8.00	8.00
W	12.00	12.00
E1	1.75	1.75
P0	4.00	4.00
F	5.50	5.50
P2	2.00	2.00
D1	Φ1.50MIN	Φ1.60

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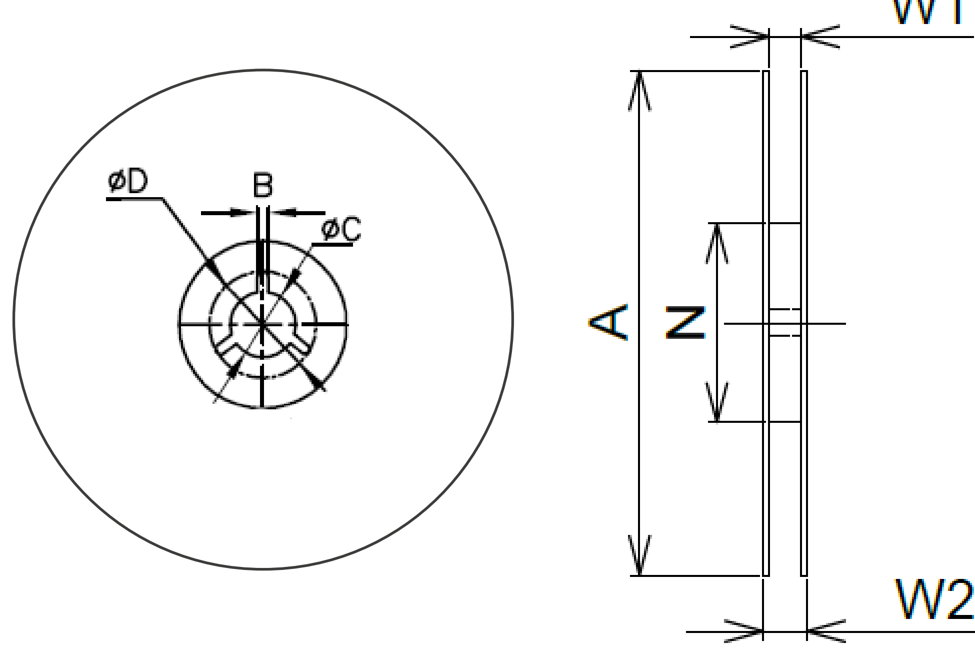
Dimension comparison: Reel (HWQFN common)



Unit: mm

Symbol	Additional (UTAC)	Existing (KYEC)
B	1.5	2.0
ΦC	13.0	13.0
ΦD	20.2	21.0
A	330	330
N	100	102
W1	12.4	12.8
W2	18.4	18.4

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Packing specification for Tape & Reel

Packing material	Tape & Reel	
	Additional (UTAC)	Existing (KYEC)
Moisture barrier bag *Refer to page 18 for printed characters.	・Size：406.4mm×457.2mm Inner label Caution label Bubble sheet	・Size：415mm×500mm Inner label
Inner box	・Size：370mm×355mm×55mm Inner Box Inner label	・Size：347mm×368mm×54mm Inner Box Inner label
Desiccant	・Weight：33g	・Weight：25g+25g

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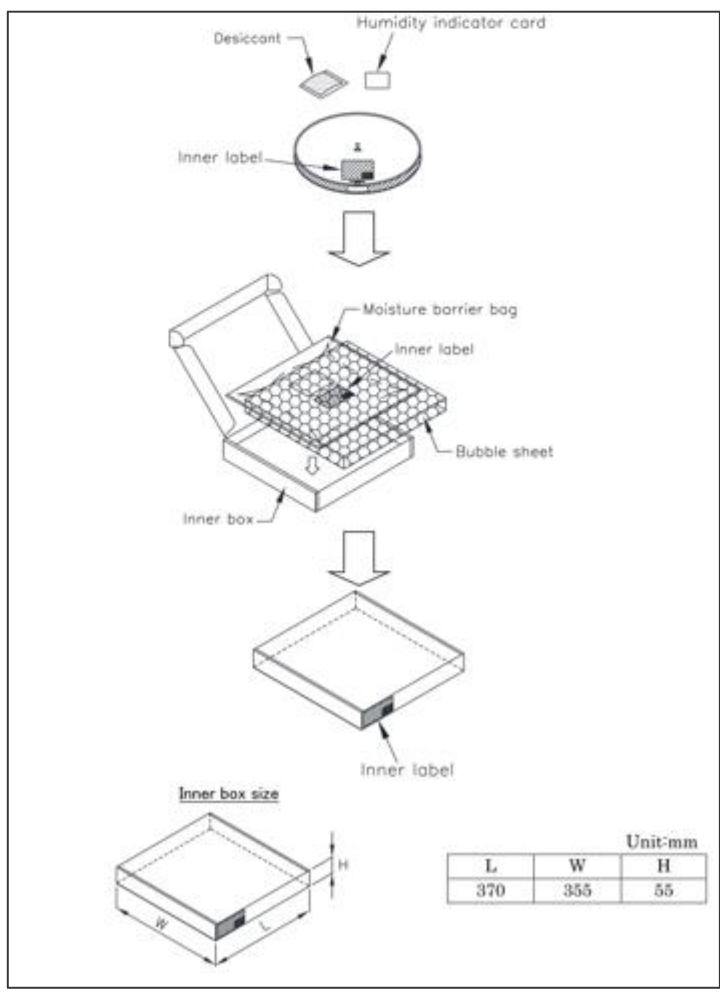
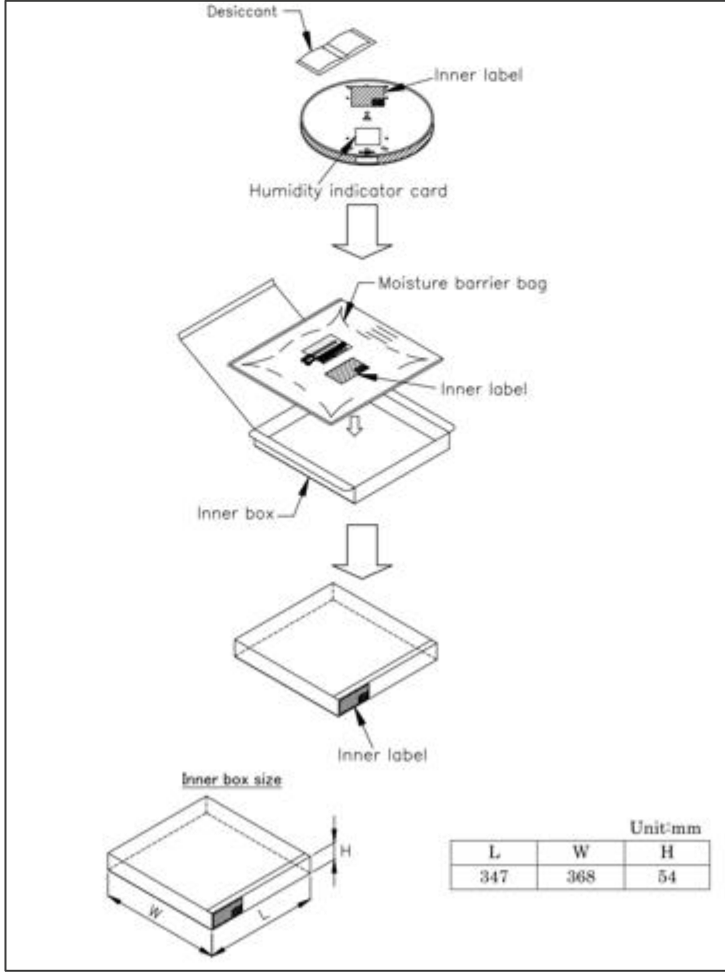
Packing specification for Tape & Reel

Additional (UTAC)



L	W	H
370	355	55

Existing (KYEC)



L	W	H
347	368	54

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4M changing points (Addition of assembly and final test site , Change of material)

Item	Check Result	Judgement
Machine	Changing at assembly and final test. 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.	**No risk**
Method	The same as current products.	**No risk**
Man	Using operator certification system. Only certificated operator can work for the production.	**No risk**
Material	Only use certificated materials. The products has been certificated by reliability test same as existing products and have no risk.	**No risk**

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4M changing points (Wafer fabrication addition)

Process transfer will be performed without change of the basic chip design (chip size, chip patterns).

Item	Check Result	Judgement
Machine	The machines are equivalent to current machines.	**No risk**
Method	The same as current products.	**No risk**
Man	Using operator certification system. Only certificated operator can work for the production.	**No risk**
Material	The same material is used.	**No risk**

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