

Product Change Notification

(Notification – P2104017-DIG)

(IMO-AB-21-0024 / IMO-AB-21-0026 / MCP-AC-20-0006)

April 15, 2021

To: *Our Valued Digi-Key Electronics Customer*

Overview: The purpose of this notification is to communicate a product change of select Renesas Electronics America, Inc. (REA) devices.

This notification announces the change of assembly materials, assembly site and final test site for select RX family devices in the HWQFN package (see the appendix for details).

There is a change to form, the part number and the addition of a full carton part number.

There is no impact to the function, quality & reliability of the products.

Affected Products: A review of our records indicates the list of products in the appendix may affect your company.

Part numbers given in this list are for active part numbers in REA database at the time of this notification.

Key Dates:

Shipments from REA of the devices with the new assembly materials, new assembly site & new final test site begins.
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July 1, 2021

Response: No response is required. REA will consider this notification approved 30 days after its issue. If you anticipate volumes beyond your regular rate prior to the transition date, please contact your REA sales representative with a forecast of your requirements.

If the customer provides a timely acknowledgement, the customer shall have 90 days (an additional 60 days) from the date of receipt of this notification in which to make any objections to the notification. If the customer does not make any objections to this notification within 90 days of the receipt of the notification, then Renesas will consider the notification as approved. If the customer cannot accept the notification, then the customer must provide Renesas with a last time buy demand and purchase order.

Please contact your REA sales representative for any questions or comments. Thank you for your attention.

Sincerely,

Renesas Electronics America, Inc.

Appendix A: Digi-Key Affected Part Numbers

Booking Part Number	Replacement PN	Full Carton PN	Full Carton Qty.
R5F51101ADNE#U0	R5F51101ADNE#20	R5F51101ADNE#00	3328
R5F51101ADNF#U0	R5F51101ADNF#20	R5F51101ADNF#00	3920
R5F51101AGNE#U0	R5F51101AGNE#20	R5F51101AGNE#00	3328
R5F51101AGNF#U0	R5F51101AGNF#20	R5F51101AGNF#00	3920
R5F51103ADNE#U0	R5F51103ADNE#20	R5F51103ADNE#00	3328
R5F51103ADNF#U0	R5F51103ADNF#20	R5F51103ADNF#00	3920
R5F51105ADNE#U0	R5F51105ADNE#20	R5F51105ADNE#00	3328
R5F5110HADNF#U0	R5F5110HADNF#20	R5F5110HADNF#00	3920
R5F5110JADNE#U0	R5F5110JADNE#20	R5F5110JADNE#00	3328
R5F5110JADNF#U0	R5F5110JADNF#20	R5F5110JADNF#00	3920
R5F51111ADNE#UA	R5F51111ADNE#2A	R5F51111ADNE#0A	3328
R5F51111ADNF#UA	R5F51111ADNF#2A	R5F51111ADNF#0A	3920
R5F51111AGNF#UA	R5F51111AGNF#2A	R5F51111AGNF#0A	3920
R5F51113ADNE#UA	R5F51113ADNE#2A	R5F51113ADNE#0A	3328
R5F51113ADNF#UA	R5F51113ADNF#2A	R5F51113ADNF#0A	3920
R5F51113AGNF#UA	R5F51113AGNF#2A	R5F51113AGNF#0A	3920
R5F51113AGNF#WA	R5F51113AGNF#4A	N/A	N/A
R5F51114ADNE#UA	R5F51114ADNE#2A	R5F51114ADNE#0A	3328
R5F51115ADNE#UA	R5F51115ADNE#2A	R5F51115ADNE#0A	3328
R5F51115AGNE#UA	R5F51115AGNE#2A	R5F51115AGNE#0A	3328
R5F51116ADNE#UA	R5F51116ADNE#2A	R5F51116ADNE#0A	3328
R5F51118ADNE#UA	R5F51118ADNE#2A	R5F51118ADNE#0A	3328
R5F5111JADNE#UA	R5F5111JADNE#2A	R5F5111JADNE#0A	3328
R5F5111JADNF#UA	R5F5111JADNF#2A	R5F5111JADNF#0A	3920
R5F51303ADNE#U0	R5F51303ADNE#20	R5F51303ADNE#00	3328
R5F51305ADNE#U0	R5F51305ADNE#20	R5F51305ADNE#00	3328
R5F52305ADND#U0	R5F52305ADND#20	R5F52305ADND#00	2080
R5F52305ADNE#U0	R5F52305ADNE#20	R5F52305ADNE#00	3328
R5F52305AGND#U0	R5F52305AGND#20	R5F52305AGND#00	2080
R5F52306ADND#U0	R5F52306ADND#20	R5F52306ADND#00	2080

Appendix A (cont.): Digi-Key Affected Part Numbers

Booking Part Number	Replacement PN	Full Carton PN	Full Carton Qty.
R5F52306ADNE#U0	R5F52306ADNE#20	R5F52306ADNE#00	3328
R5F52315ADND#U0	R5F52315ADND#20	R5F52315ADND#00	2080
R5F52315ADNE#U0	R5F52315ADNE#20	R5F52315ADNE#00	3328
R5F52315CDND#U0	R5F52315CDND#20	R5F52315CDND#00	2080
R5F52315CDNE#U0	R5F52315CDNE#20	R5F52315CDNE#00	3328
R5F52316ADND#U0	R5F52316ADND#20	R5F52316ADND#00	2080
R5F52316ADNE#U0	R5F52316ADNE#20	R5F52316ADNE#00	3328
R5F52316CDND#U0	R5F52316CDND#20	R5F52316CDND#00	2080
R5F52316CDNE#U0	R5F52316CDNE#20	R5F52316CDNE#00	3328
R5F52316CGND#U0	R5F52316CGND#20	R5F52316CGND#00	2080
R5F52317ADND#U0	R5F52317ADND#20	R5F52317ADND#00	2080
R5F52317ADNE#U0	R5F52317ADNE#20	R5F52317ADNE#00	3328
R5F52317BDNE#U0	R5F52317BDNE#20	R5F52317BDNE#00	3328
R5F52318ADND#U0	R5F52318ADND#20	R5F52318ADND#00	2080
R5F52318ADNE#U0	R5F52318ADNE#20	R5F52318ADNE#00	3328
R5F52318AGND#U0	R5F52318AGND#20	R5F52318AGND#00	2080
R5F52318BDND#U0	R5F52318BDND#20	R5F52318BDND#00	2080
R5F52318BDNE#U0	R5F52318BDNE#20	R5F52318BDNE#00	3328
R5F523E5ADNF#U0	R5F523E5ADNF#20	R5F523E5ADNF#00	3920
R5F523E6ADNF#U0	R5F523E6ADNF#20	R5F523E6ADNF#00	3920
R5F523E6AGNF#U0	R5F523E6AGNF#20	R5F523E6AGNF#00	3920

Appendix B: Change Summary

Item		After change	Before change
Assembly factory		Powertech Technology Inc., Group_Gretek Electronics Inc.	Amkor Technology Japan Kumamoto
Sorting factory		King Yuan Electronics Co., Ltd	
Parts	Lead frame	Change to standard material used in new factory. The structure not changed.	-
	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.	-
	Bonding wire	Cu (Pd coating)	Au
Package	Outline	There are changes in some of dimensions	-
Marking	Font	Font changed	-
	Country of origin indication	No indication	Indicated
	Manufacturing lot number	7 digits	9 digits
	Pb-Free Marking	No indication	Indicated
Packing	Bundling band color	Add black	-
	Tray	Tray and the order of devices change	-
	Emboss tape	Emboss tape, Reel for emboss taping and Desiccant change	-
Storage condition	After opening	Within 30°C/ 60%RH/ 168h	Within 30°C/ 70%RH/ 168h
Ordering P/N		R5F*****N*#2* / #0* / #4*	R5F*****N*#U* / #W*
The others		Add full carton P/N for tray package	-

Appendix C: Part Number Change

- Due to the change to Cu bond wire, #U* changes to #2* or #0* for tray packed part numbers, and #W* changes to #4* for embossed taping part numbers.
- Example of the part number change is shown below.
RX111 (Example of 64kB Code flash)

Package type	P/N before change	P/N after change		
			Full carton P/N	Full carton quantity
Tray	R5F1113AGNF#UA	R5F1113AGNF#2A	R5F1113AGNF#0A	3,920
Embossed taping	R5F1113AGNF#WA	R5F1113AGNF#4A	-	-

Appendix D: 4M Changing Points

Item	Check result	Judgement
Machine	Changing at assembly and sorting. The machines are equivalent to present machines. To prevent copper wire oxidization, inert gas is used to wire bonding process. There are production results of copper wire products in new site and we have already checked there is no risk at the start of this product's production.	No risk
Method	Bonding method (thermosonic bonding) and process flow for the Cu wiring are same as the Au wiring.	No risk
Man	Using operator certification system. Only certificated operator can work for the production.	No risk
Material	Using only certificated copper wire. And applying certificated lead frame, die attach epoxy and mold compound for copper wire products. The products has been certificated by reliability test same as gold wire products and have no risk.	No risk

Appendix E: Full Carton Part Number Addition

- The replacement part number adds a full carton part number version (full state tray package and inner box).
- Full carton shipment will combine maximum 3 production lots at worst case.

	Item	Normal package (Fraction)	Full carton package
①	Packing form	Any vacancy in the tray and any free space in the carton	Tray and Carton is packed with every product
②	Label	No printed at upper left area on the label	Combined Lots are printed at upper left area on the label
③	Lot combine	1 lot in 1 carton	Combined maximum 3 lots for fulfill a Carton at worst case
④	Booking Part Number	The right next to “#” character of Booking Part Number : #2*	The right next to “#” character of Booking Part Number : #0*
⑤	Order Quantity	One product unit (fraction quantity)	Full Carton quantity unit

- Below is an example of the label change.
The current label (fractional packing)
 No print in the upper left area of the label.

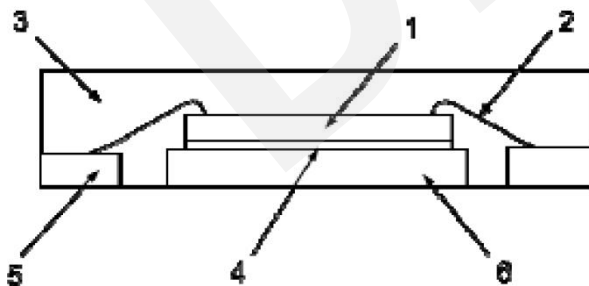
The new label (full carton)

The production lot information is printed in the upper left area of the label (3 combined lots), serial number code, week code and quantity.



Appendix F: Package Structure Image

- Package section and die pad shape are reference examples.
- The materials are different as they use materials certified at the specific site, but the structure is equivalent.
- Refer to the specific package drawing as some sizes differ depending on the package.



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

Appendix G: 6x6mm 40pin HWQFN Package Comparison

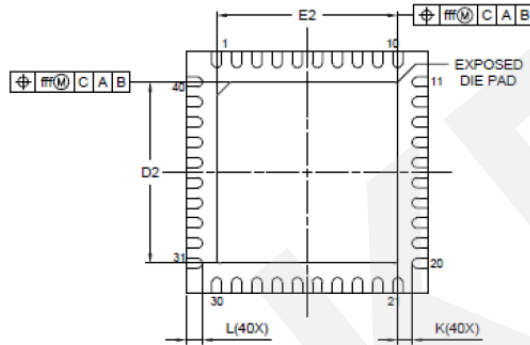
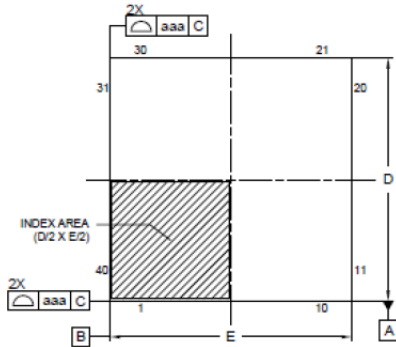
JEDEC notation is used instead of the conventional notation.

Symbol (After change)	6x6mm 40pin HWQFN PWQN0040KD-A			Symbol (Before change)	6x6mm 40pin HWQFN PWQN0040KC-A		
	Dimension in Millimeters				Dimension in Millimeters		
	Min	Nom	Max		Min	Nom	Max
A	-	-	0.80	A	-	-	0.80
A1	0.00	0.02	0.05	A1	0.00	-	-
A3	0.203 REF.			C2	0.15	0.20	0.25
b	0.18	0.25	0.30	b	0.18	0.25	0.30
D	6.00 BSC			E	5.95	6.00	6.05
E	6.00 BSC			D	5.95	6.00	6.05
e	0.50 BSC			e	-	0.50	-
L	0.30	0.40	0.50	Lp	0.30	0.40	0.50
K	0.20	-	-	-	-	-	-
D2	4.45	4.50	4.55	E2	-	4.50	-
E2	4.45	4.50	4.55	D2	-	4.50	-
-	-	-	-	ZD	-	0.75	-
-	-	-	-	ZE	-	0.75	-
aaa	0.15			-	-	-	-
bbb	0.10			x	-	-	0.05
ccc	0.10			-	-	-	-
ddd	0.05			-	-	-	-
eee	0.08			y	-	-	0.05
fff	0.10			-	-	-	-

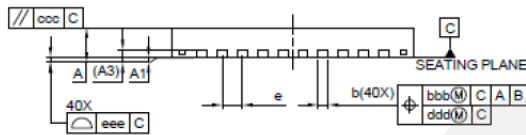
Appendix G (cont.): 6x6mm 40pin HWQFN Package Comparison

After Change

JEITA Package code	RENESAS code	MASS(TYP.)[g]
P-HWQFN040-6x6-0.50	PWQN0040KD-A	0.08

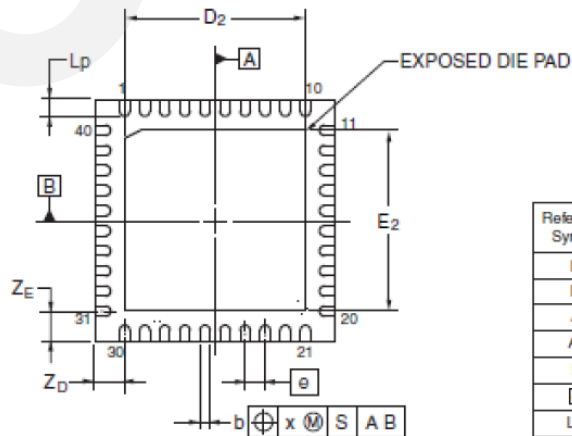
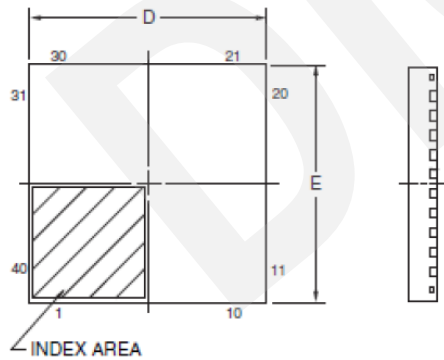


Reference Symbol	Dimension in Millimeters		
	Min.	Nom.	Max.
A	—	—	0.80
A _v	0.00	0.02	0.05
A _s	0.203 REF.		
b	0.18	0.25	0.30
D	6.00 BSC		
E	6.00 BSC		
e	0.50 BSC		
L	0.30	0.40	0.50
K	0.20	—	—
D _s	4.45	4.50	4.55
E _s	4.45	4.50	4.55
aaa	0.15		
bbb	0.10		
occ	0.10		
ddd	0.05		
eee	0.08		
fff	0.10		

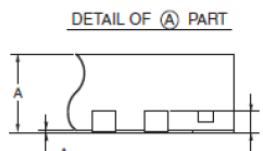
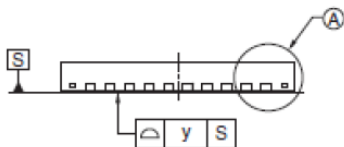


Before Change

JEITA Package code	RENESAS code	Previous code	MASS(TYP.)[g]
P-HWQFN40-6x6-0.50	PWQN0040KC-A	P40K8-50-4B4-5	0.09



Reference Symbol	Dimension in Millimeters		
	Min	Nom	Max
D	5.95	6.00	6.05
E	5.95	6.00	6.05
A	—	—	0.80
A ₁	0.00	—	—
b	0.18	0.25	0.30
Ⓜ	—	0.50	—
Lp	0.30	0.40	0.50
x	—	—	0.05
y	—	—	0.05
Z _D	—	0.75	—
Z _E	—	0.75	—
c ₂	0.15	0.20	0.25
D ₂	—	4.50	—
E ₂	—	4.50	—



Appendix H: 7x7mm 48pin HWQFN Package Comparison

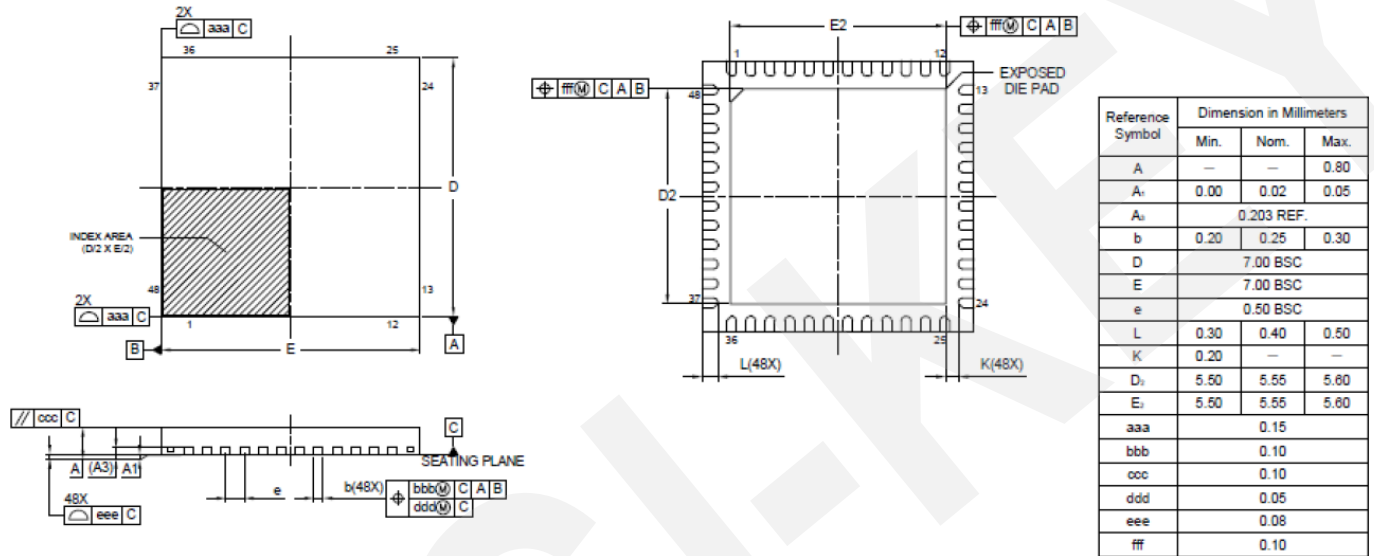
JEDEC notation is used instead of the conventional notation.

Symbol (After change)	7x7mm 48pin HWQFN PWQN0048KE-A			Symbol (Before change)	7x7mm 48pin HWQFN PWQN0048KB-A		
	Dimension in Millimeters				Dimension in Millimeters		
	Min	Nom	Max		Min	Nom	Max
A	-	-	0.80	A	-	-	0.80
A1	0.00	0.02	0.05	A1	0.00	-	-
A3	0.203 REF.			C2	0.15	0.20	0.25
b	0.20	0.25	0.30	b	0.18	0.25	0.30
D	7.00 BSC			E	6.95	7.00	7.05
E	7.00 BSC			D	6.95	7.00	7.05
e	0.50 BSC			e	-	0.50	-
L	0.30	0.40	0.50	Lp	0.30	0.40	0.50
K	0.20	-	-	-	-	-	-
D2	5.50	5.55	5.60	E2	-	5.50	-
E2	5.50	5.55	5.60	D2	-	5.50	-
-	-	-	-	ZD	-	0.75	-
-	-	-	-	ZE	-	0.75	-
aaa	0.15			-	-	-	-
bbb	0.10			x	-	-	0.05
ccc	0.10			-	-	-	-
ddd	0.05			-	-	-	-
eee	0.08			y	-	-	0.05
fff	0.10			-	-	-	-

Appendix H (cont.): 7x7mm 48pin HWQFN Package Comparison

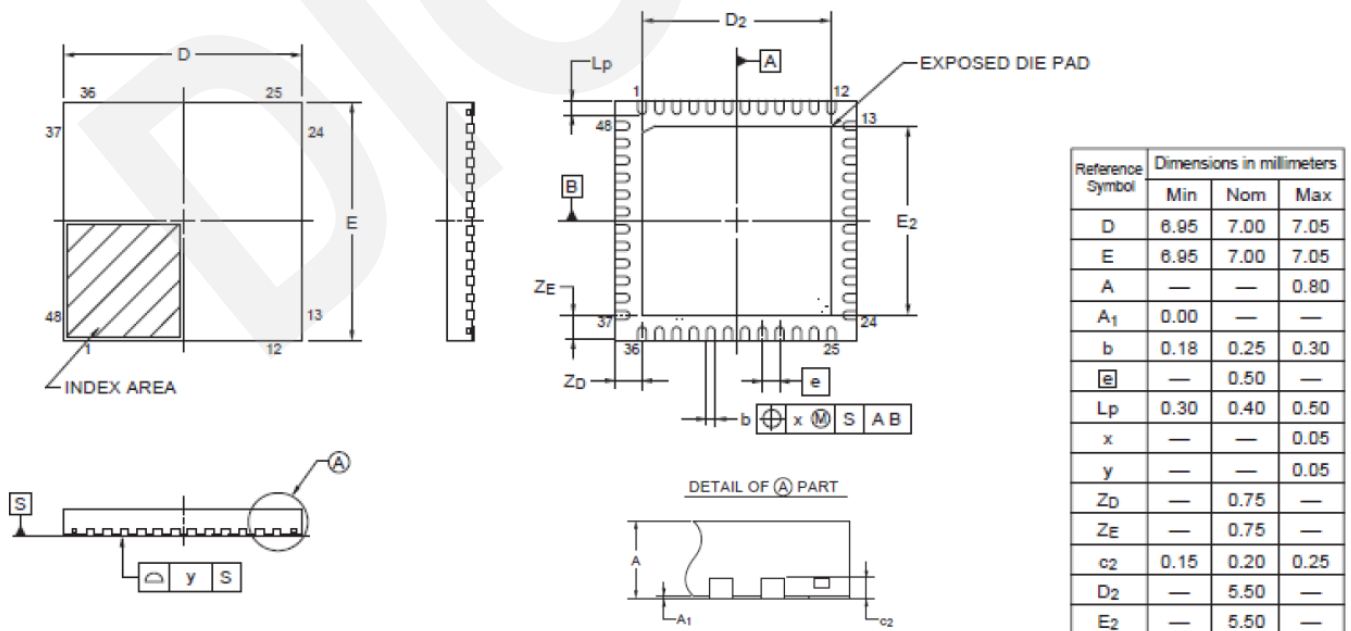
After Change

JEITA Package code	RENESAS code	MASS(TYP.)[g]
P-HWQFN048-7x7-0.50	PWQN0048KE-A	0.13



Before Change

JEITA Package Code	RENESAS Code	Previous Code	MASS (Typ) [g]
P-HWQFN48-7x7-0.50	PWQN0048KB-A	48PJN-A P48K8-50-5B4-7	0.13



Appendix I: 9x9mm 64pin HWQFN Package Comparison

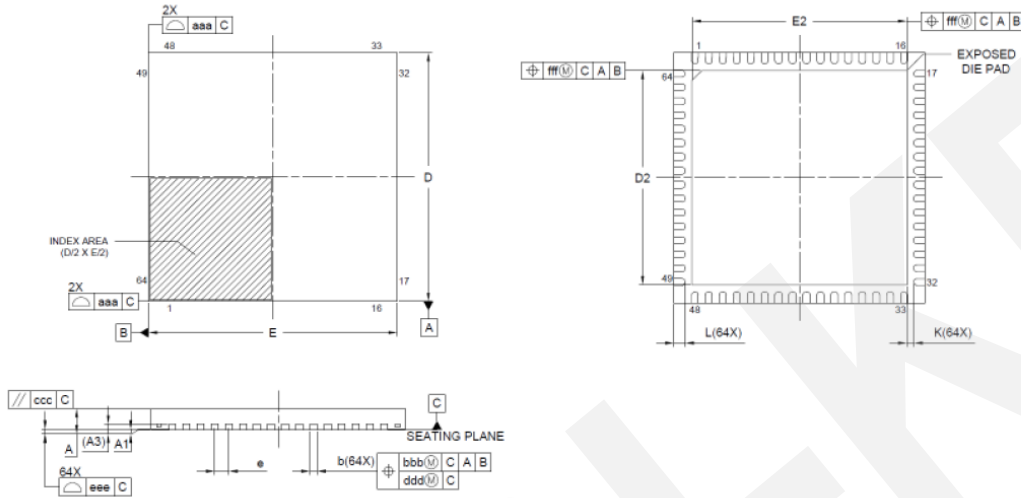
JEDEC notation is used instead of the conventional notation.

Symbol (After change)	9x9mm 64pin HWQFN PWQN0064??-A			Symbol (Before change)	9x9mm 64pin HWQFN PWQN0064LA-A		
	Dimension in Millimeters				Dimension in Millimeters		
	Min	Nom	Max		Min	Nom	Max
A	0.70	0.75	0.80	A	0.70	0.75	0.80
A1	0.00	0.02	0.05	A1	-	-	0.05
C2	0.203 REF.			C2	0.15	0.20	0.25
b	0.18	0.25	0.30	b	0.18	0.25	0.30
D	9.00 BSC			E	8.95	9.00	9.05
E	9.00 BSC			D	8.95	9.00	9.05
e	0.50 BSC			e	0.47	0.50	0.53
L	0.30	0.40	0.50	Lp	0.30	0.40	0.50
K	0.20	-	-	-	-	-	-
D2	7.65	7.70	7.75	E2	7.45	7.50	7.55
E2	7.65	7.70	7.75	D2	7.45	7.50	7.55
-	-	-	-	ZD	-	0.75	-
-	-	-	-	ZE	-	0.75	-
aaa	0.15			-	-	-	-
bbb	0.10			x	-	-	0.05
ccc	0.10			-	-	-	-
ddd	0.05			-	-	-	-
eee	0.08			y	-	-	0.05
fff	0.10			-	-	-	-

Appendix I (cont.): 9x9mm 64pin HWQFN Package Comparison

After Change

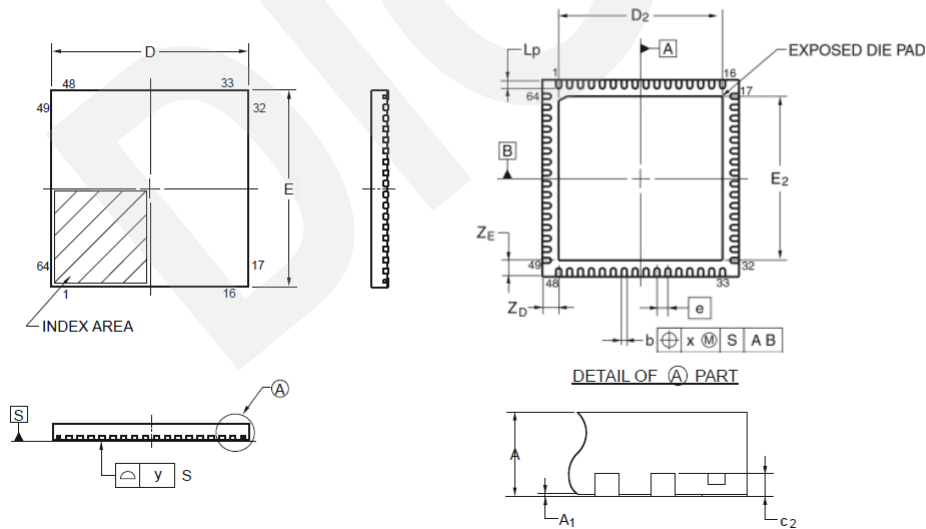
JEITA Package code	RENESAS code	MASS(TYP.)[g]
P-HWQFN064-9x9-0.50	PWQN0064KD-A	0.17



Reference Symbol	Dimension in Millimeters		
	Min.	Nom.	Max.
A	—	—	0.80
A ₁	0.00	0.02	0.05
A ₂	0.203 REF.		
b	0.18	0.25	0.30
D	9.00 BSC		
E	9.00 BSC		
e	0.50 BSC		
L	0.30	0.40	0.50
K	0.20	—	—
D ₂	7.65	7.70	7.75
E ₂	7.65	7.70	7.75
aaa	0.15		
bbb	0.10		
ccc	0.10		
ddd	0.05		
eee	0.08		
fff	0.10		

Before Change

JEITA Package code	RENESAS code	Previous code	MASS(TYP.)[g]
P-HWQFN64-9x9-0.50	PWQN0064KC-A	P64K8-50-6B4-4	0.21



Reference Symbol	Dimension in Millimeters		
	Min	Nom	Max
D	8.95	9.00	9.05
E	8.95	9.00	9.05
A			0.80
A ₁	0.00		
b	0.18	0.25	0.30
e		0.50	
Lp	0.30	0.40	0.50
x			0.05
y			0.05
ZD		0.75	
ZE		0.75	
c2	0.15	0.20	0.25
D ₂		7.50	
E ₂		7.50	

Appendix J: Appearance Change

- Comparison with ATJ Kumamoto
- Example of 7x7mm 48pin
- Character is reference example

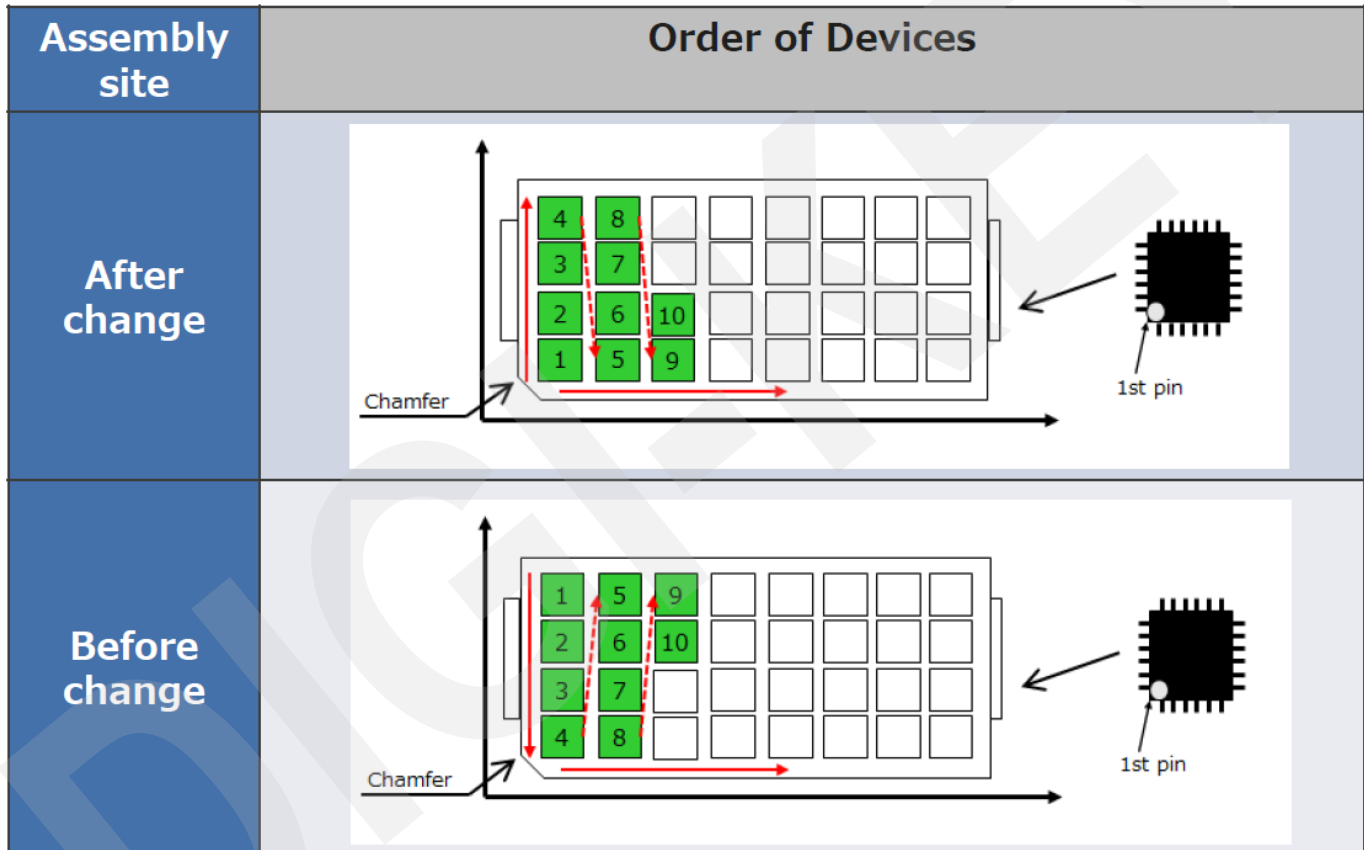
	Package surface	Package back	Package side
After change			
Before change			

Appendix K: Laser Visibility Change

- Comparison with ATJ Kumamoto
- Character is reference example

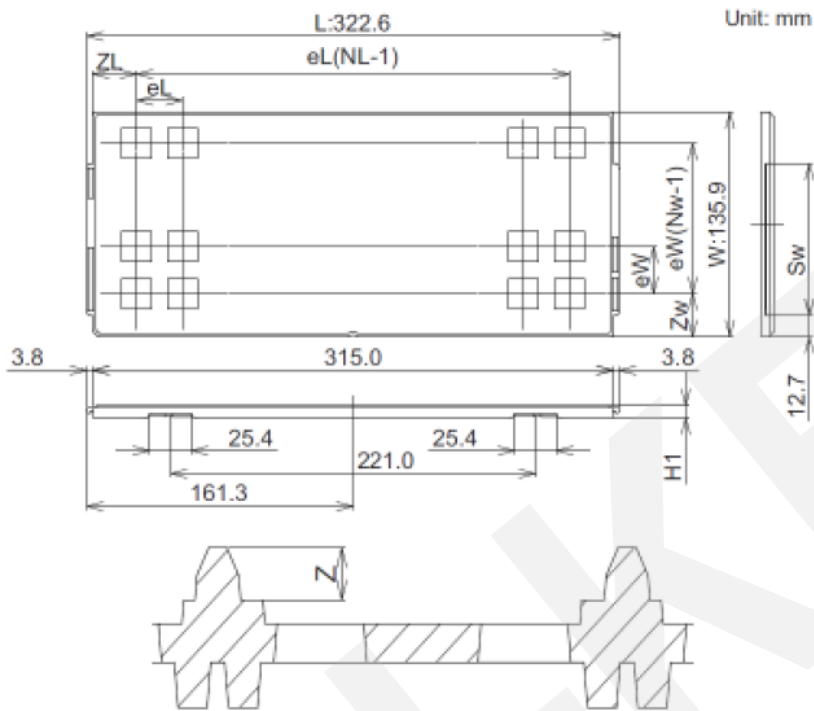
Assembly site	After change	Before change
Whole Photo		
Detail Photo		

Appendix L: Tray Packing Specification Change



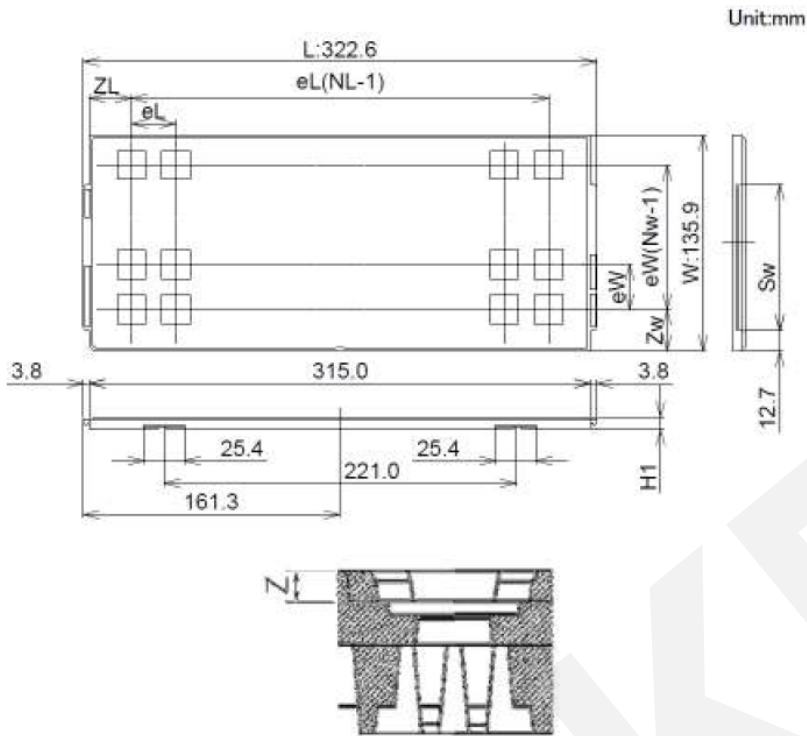
Appendix M: Tray Packing Specification for 6mm×6mm 40pin HWQFN

No change from current product.



Tray Code	After change / Before change	
Position dimension of cells	Z	1.35
	Zw	8.15
	ZL	7.90
	eW	9.20
	eL	8.80
	Sw	92.10
Thickness (mm)	H1	7.62
Number of cells	Nw	14
	NL	35
Maximum storage pcs IC/Tray	490	
Maximum storage pcs IC/Inner box	3,920	
Material	Carbon PPE	
Heat resistant temperature	135°C MAX	
JEDECorCustom	JEDEC	
Surface resistance	Less than $1 \times 10^{11} \Omega / \square$	

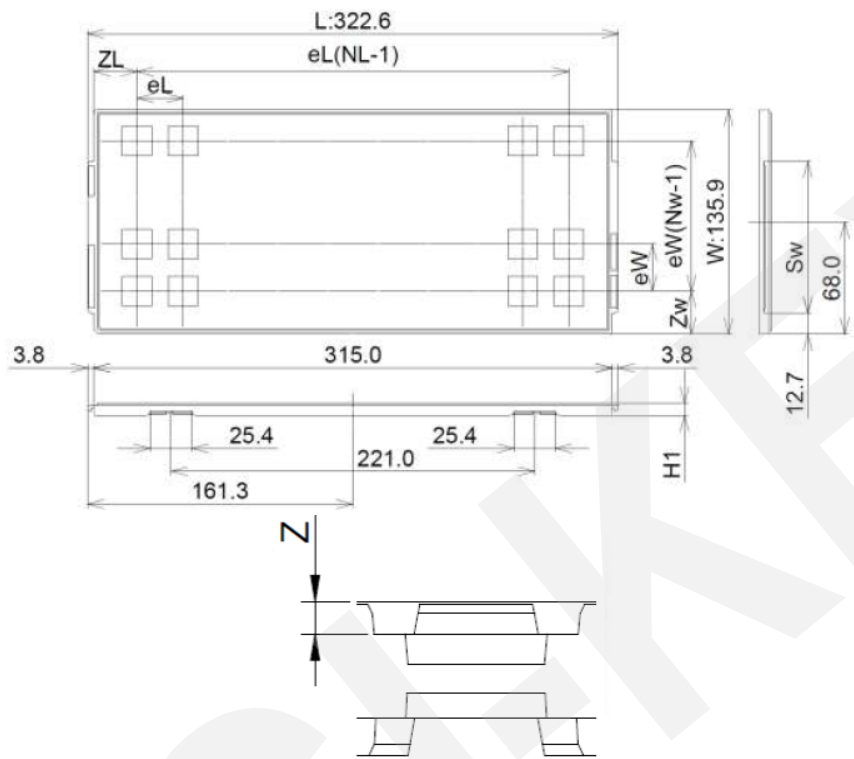
Appendix N: Tray Packing Specification for 7mm×7mm 48pin HWQFN



Tray Code		After change	Before change
Position dimension of cells	Z	1.40	1.55
	Zw	11.55	10.35
	ZL	11.80	10.00
	eW	9.40	12.80
	eL	9.40	11.80
	Sw	92.10	92.10
Thickness (mm)	H1	7.62	7.62
Number of cells	Nw	13	10
	NL	32	26
Maximum storage pcs IC/Tray		416	260
Maximum storage pcs IC/Inner box		3,328	2,080
Material		Carbon PPE	Carbon PPE
Heat resistant temperature		135°C MAX	135°C MAX
JEDEC or Custom		JEDEC	JEDEC
Surface resistance		Less than $1 \times 10^{11} \Omega / \square$	Less than $1 \times 10^{11} \Omega / \square$

Appendix O: Tray Packing Specification for 9mm×9mm 64pin HWQFN

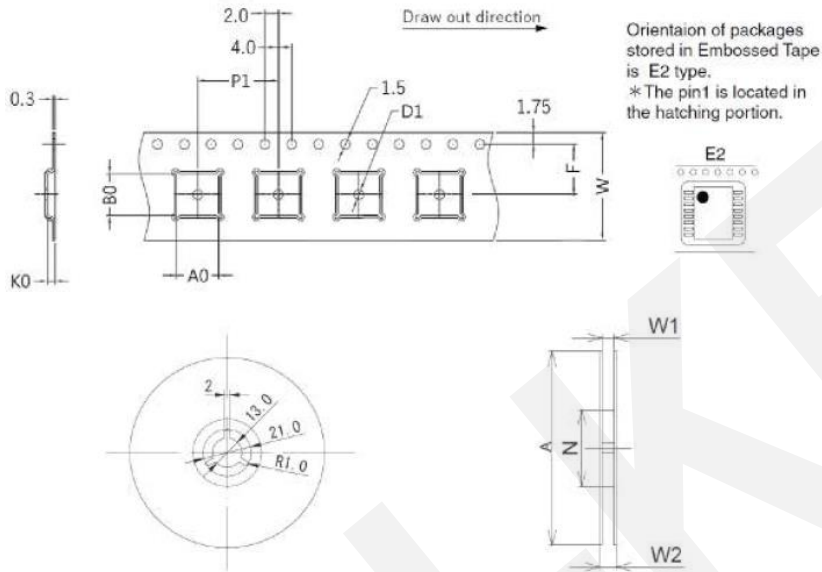
Unit:mm



Tray Code		After change	Before change
Position dimension of cells	Z	1.55	1.50
	Zw	10.35	10.75
	ZL	10.00	11.90
	eW	12.80	10.40
	eL	11.80	10.40
	Sw	92.10	92.10
Thickness (mm)	H1	7.62	7.62
Number of cells	Nw	10	12
	NL	26	29
Maximum storage pcs IC/Tray		260	348
Maximum storage pcs IC/Inner box		2,080	2,784
Material		Carbon PPE	Carbon PPE
Heat resistant temperature		135°C MAX	135°C MAX
JEDECorCustom		JEDEC	JEDEC
Surface resistance		Less than 1x10 ¹¹ Ω/□	Less than 1x10 ¹¹ Ω/□

Appendix P: Embossed Tape (Tape & Reel) Packing Specification for 6mm×6mm 40pin HWQFN

Unit:mm



Tape Code		After change	Before change
Tape Dimensions (mm)	W	16.0	16.0
	P1	12.0	12.0
	A0	6.3	6.3
	B0	6.3	6.3
	K0	1.1	1.0
	F	7.5	7.5
	D1	1.5	1.5
Reel Dimensions (mm)	A	330	330
	N	96.5	100
	W1	16.8	17.5
	W2	22.2	21.5
Maximum storage Pcs. IC/ Reel		2,500	2,500
Material		Carbon PS	Carbon PS
Surface resistance		Less than $1 \times 10^{11} \Omega / \square$	Less than $1 \times 10^{11} \Omega / \square$

- The desiccant is changed, but there is no change to the storage period.
- Shape or the likeness might be changed.

	After change	Before change
Desiccant		