Product Change Notice

(PCN Tracking Number: EE-QR-200701-01)

Version: 1

Customer:	ALL Customers
Renesas Product Type:	Synergy and RA HWQFN package products. The list of all affected products along with the new part numbers on page 9.
Description of Change:	New assembly and test factories. Further details stated on page 2
Reason for Change:	Renesas continuously changes manufacturing factories and assembly materials for stable supply.
Identification:	From the packing label or trace code, the production history data can be inquired.
Schedules:	Sample shipment & QT data: from b/o Nov. 2020 sequentially (p.9) Requested approval Nov. 2020 or 3 months after sample delivery Change Implementation from Jan. 2021 onwards sequentially
Anticipated Impact:	Fit, Form & Function: None Quality & Reliability: None QC Flow: None
Doc. No.:	EEQC-PCN-CR-20-0053
Internal Reference:	IMO-AZ-20-003-1

In case of any question, please contact:

INITIATOR	TITLE	E-mail	PHONE No.
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Düsseldorf, 15.07.2020

Customer Response:

(please fill in and return by e-mail, fax or mail)

☐ acknowledge
☐ acceptable
☐ inacceptable (pls. comment)
☐ not applicable

Company: _____

Name & Position: _____

Phone / Fax No.: _____

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

Comments:

_____ (Signature)

Details of Change:

1) Factory

1-1) Assembly factory:

Current: Amkor Technology Japan Kumamoto/Hakodate (ATJ Kumamoto/Hakodate) / JP
New: Powertech Technology Inc., Group Greatek Electronics Inc., (PTI_Greatek) / TW

1-2) Sorting factory:

Current: Amkor Technology Japan Kumamoto (ATJ Kumamoto) / JP
New: King Yuan Electronics Co., Ltd (KYEC) / TW

2) Material: Standard materials are used in new factory

2-1) Bonding wire change to Copper (Cu)
2-2) Lead frame, Plating (PPF→Pure-Sn), Die mount material and mold resin material change
2-3) Material Declaration Sheet may be provided upon request

3) Package outline (JEDEC compliant):

There are changes in dimensions.
The package surface becomes matte but does not affect the reliability.

4) Marking on package

4-1) Font change
4-2) Manufacturing lot number change (from 9 digit to 7 digit)
4-3) Delete country of origin indication

5) Packaging material:

5-1) Tray and the order of devices change
5-2) Addition of bundling band color (Black)
5-3) Emboss tape change
5-4) Reel for emboss taping change

6) Storage condition after opening:

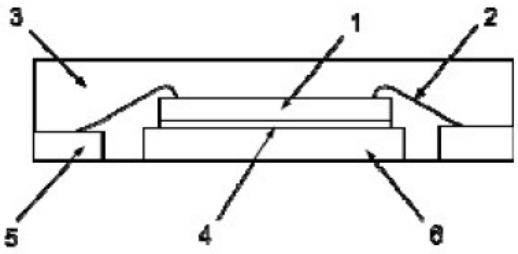
Current product: Amkor Technology Japan: Within 30°C/ 70%RH/ 168h
New product: Powertech Technology Inc., Group: Within 30°C/ 60%RH/ 168h (JEDEC compliant)

Difference of Specification:

Item		New	Current
Assembly factory		Greatek (PTI Group)	ATJ Kumamoto
Sorting factory		KYEC	ATJ Kumamoto
Package	Outline	Change	No change
Parts	Lead frame	Change	No change
	Die mount	Ag epoxy paste B	Ag epoxy paste A
	Bonding wire	Cu (Pd coating)	Au
	Mold resin	Mold resin B	Mold resin A
	Plating	Pure-Sn	PPF
Marking	Font	Change	No change
	Manufacturing lot number	7 digits	9 digits
Packing	Tray	Change (except 6x6)	No change
	bundling band color	Add Black (There are multiple colors)	Pink (There are multiple colors)
	Emboss tape	Change	No change
Storage condition	After opening	Within 30°C/ 60%RH/ 168h	Within 30°C/ 70%RH/ 168h

Package Structure:

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

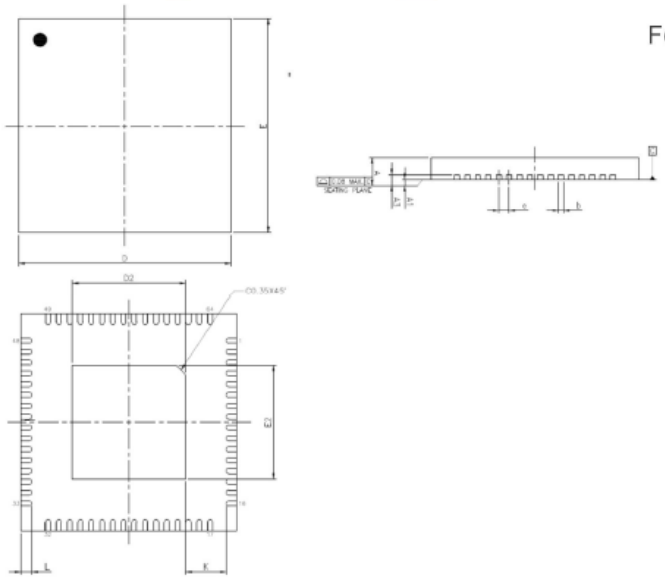


No.	部材 Part
1	チップ Die
2	ワイヤ Wire
3	封止材 Molding material
4	ダイアタッチ材 Die attach material
5	Cu リード：Pure-Sn メッキ Cu lead Pure-Sn plating
6	ダイパッド Die pad

*The materials are different because they use materials certified at the site, but the structure is equivalent.

64pin

Package Outline_8mm×8mm 64pin HWQFN



For the location of the symbol, please check the left.

* The indication format/standard has been changed to JEDEC compliant.

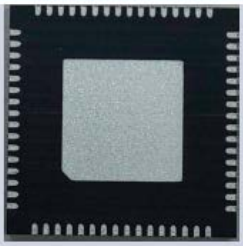
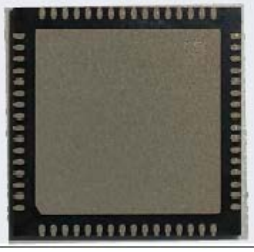
Item	Symbol	New			Current		
		Min.	Nom.	Max.	Min.	Nom.	Max.
Package length	D		8.00 BSC		7.95	8.00	8.05
Package width	E		8.00 BSC		7.95	8.00	8.05
Seated height	A	-	-	0.80	-	-	0.80
1st standoff height	A1	0.00	-	-	0.00	-	-
Terminal width	b	0.15	0.20	0.25	0.17	0.2	0.23
Terminal pitch	e		0.40 BSC		-	0.40	-
Terminal length	L	0.35	0.40	0.45	0.30	0.40	0.50
Coplanarity	-	-	-	0.08	-	-	0.05
Terminal to die pad length	K	0.20	-	-	-	-	-
Terminal thickness	A3		0.203 REF		0.15	0.20	0.25
Die pad length	D2	-	4.20	-	-	6.50	-
Die pad width (S5D3, S124, RA6M1)	E2	-	4.20	-	-	6.50	-
Die pad width (Other group)	E2	-	6.50	-	-	6.50	-

As Amkor Technology Japan Kumamoto (Current factory) is JEITA standard, items and symbols are different.

64pin

Outline_8mm×8mm 64pin HWQFN (S5D3, RA6M1, S124)

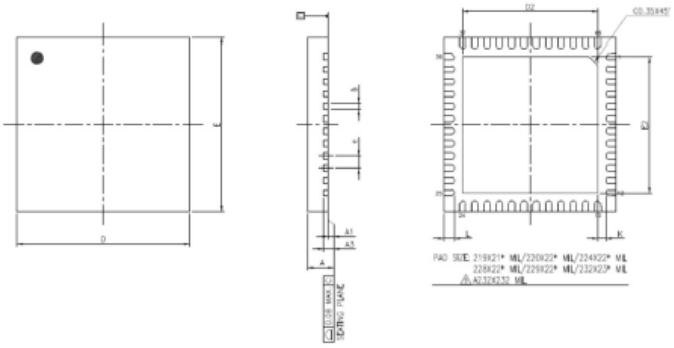
※Character is reference example

	Package surface	Package back	Package side
New			
Current			

48pin (7X7mm)

Outline_7mm×7mm 48pin HWQFN

Sample will be developing in 2H, 2020



* The indication format/standard has been changed to JEDEC compliant.

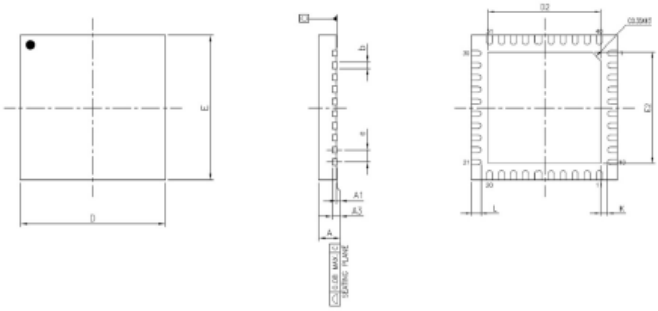
Item	Symbol	New			Current		
		Min.	Nom.	Max.	Min.	Nom.	Max.
Package length	D		7.00 BSC		6.95	7.00	7.05
Package width	E		7.00 BSC		6.95	7.00	7.05
Seated height	A	-	-	0.80	-	-	0.80
1st standoff height	A1	0.00	-	-	0.00	-	-
Terminal width	b	0.15	-	0.30	0.18	0.25	0.30
Terminal pitch	e		0.50 BSC		-	0.50	-
Terminal length	L	0.30	0.40	0.50	0.30	0.40	0.50
Coplanarity	-	-	-	0.08	-	-	0.05
Terminal to die pad length	K	0.20	-	-	-	-	-
Terminal thickness	A3		0.203 REF		0.15	0.20	0.25
Die pad length	D2	-	5.30	-	-	5.50	-
Die pad width	E2	-	5.30	-	-	5.50	-

As Amkor Technology Japan Kumamoto (Current factory) is JEITA standard, items and symbols are different.

40pin (6X6mm)

Outline_6mm×6mm 40pin HWQFN

Sample will be developing in 2H, 2020



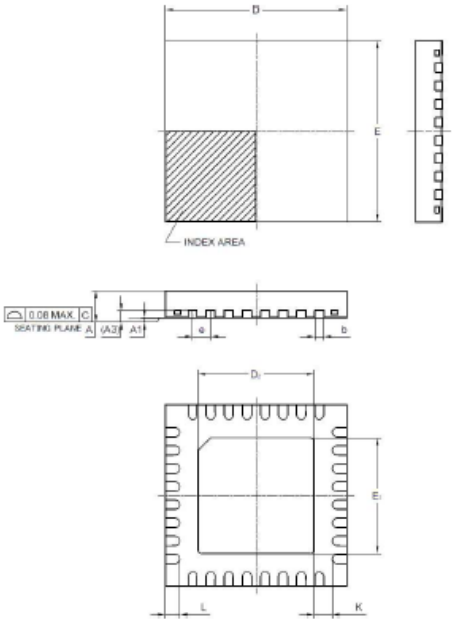
* The indication format/standard has been changed to JEDEC compliant.

Item	Symbol	New			Current		
		Min.	Nom.	Max.	Min.	Nom.	Max.
Package length	D		6.00 BSC		5.95	6.00	6.05
Package width	E		6.00 BSC		5.95	6.00	6.05
Seated height	A	-	-	0.80	-	-	0.80
1st standoff height	A1	0.00	-	-	0.00	-	-
Terminal width	b	0.15	-	0.30	0.18	0.25	0.30
Terminal pitch	e		0.50 BSC		-	0.50	-
Terminal length	L	0.30	0.40	0.50	0.30	0.40	0.50
Coplanarity	-	-	-	0.08	-	-	0.05
Terminal to die pad length	K	0.20	-	-	-	-	-
Terminal thickness	A3		0.203 REF		0.15	0.20	0.25
Die pad length	D2	-	4.50	-	-	4.50	-
Die pad width	E2	-	4.50	-	-	4.50	-

As Amkor Technology Japan Kumamoto (Current factory) is JEITA standard, items and symbols are different.

32pin

Package Outline_5mm×5mm 32pin HWQFN



For the location of the symbol, please check the left.

* The indication format/standard has been changed to JEDEC compliant.

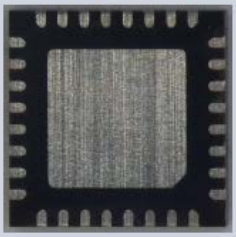
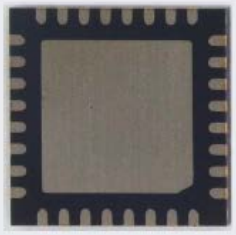
Item	Symbol	New			Current		
		Min.	Nom.	Max.	Min.	Nom.	Max.
Package length	D		5.00 BSC		4.95	5.00	5.05
Package width	E		5.00 BSC		4.95	5.00	5.05
Seated height	A	-	-	0.80	-	-	0.80
1st standoff height	A1	0.00	-	-	0.00	-	-
Terminal width	b	0.18	0.25	0.30	0.18	0.25	0.30
Terminal pitch	e		0.50 BSC		-	0.50	-
Terminal length	L	0.35	0.40	0.45	0.30	0.40	0.50
Coplanarity	-	-	-	0.08	-	-	0.05
Terminal to die pad length	K	0.20	-	-	-	-	-
Terminal thickness	A3		0.203 REF		0.15	0.20	0.25
Die pad length	D2	-	3.50	-	-	3.50	-
Die pad width	E2	-	3.50	-	-	3.50	-

As Amkor Technology Japan Kumamoto (Current factory) is JEITA standard, items and symbols are different.

32pin

Outline_5mm×5mm 32pin HWQFN

※Character is reference example

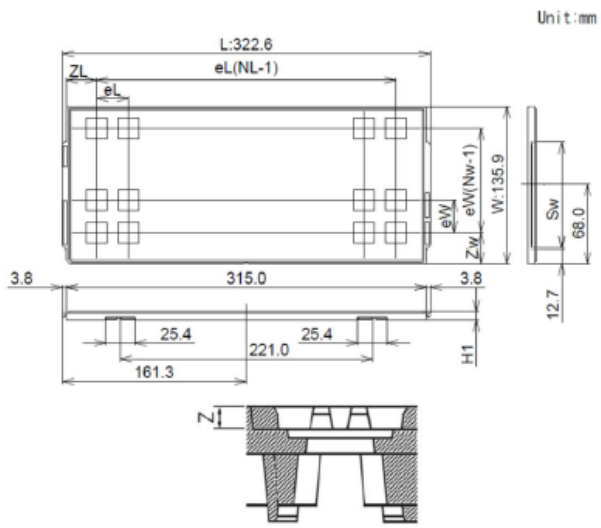
	Package surface	Package back	Package side
New			
Current			

Packing Specification (Tray and Emboss Taping):

64pin (8X8mm)

PACKING SPECIFICATION (TRAY)

NEW

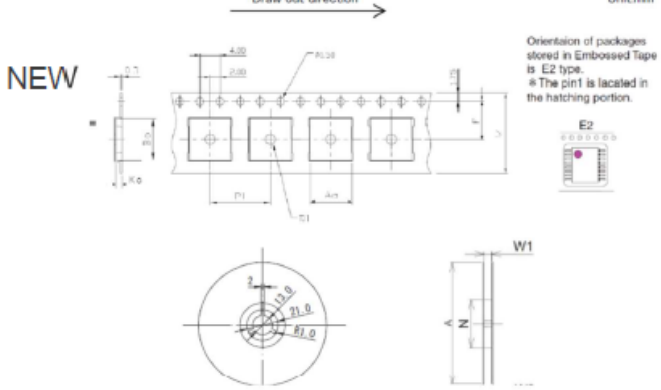


Tray Code		New	Current
		EA708080-10	EAM0808-10 REV.A
Position dimension of cells	Z	1.50	1.45
	Zw	10.75	10.35
	ZL	11.90	10.00
	eW	10.4	12.8
	eL	10.4	11.8
	Sw	92.1	92.1
Thickness (mm)	H1	7.62	7.62
Number of cells	Nw	12	10
	NL	29	26
Maximum storage pcs IC/Tray		348	260
Maximum storage pcs IC/Inner box		2784	2080
Material		Carbon PPE	Carbon PPE
Heat resistant temperature		135ºC MAX	150ºC MAX
JEDECorCustom		JEDEC	JEDEC
Surface resistance		Less than $1x10^{11}\Omega/\square$	---

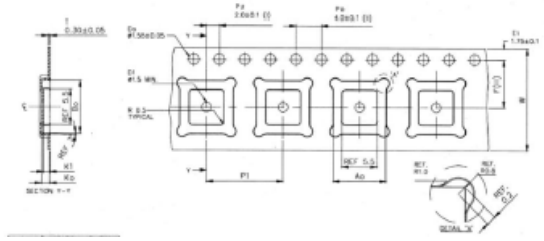
64pin (8X8mm)

PACKING SPECIFICATIONS (EMBOSS TAPING)

NEW



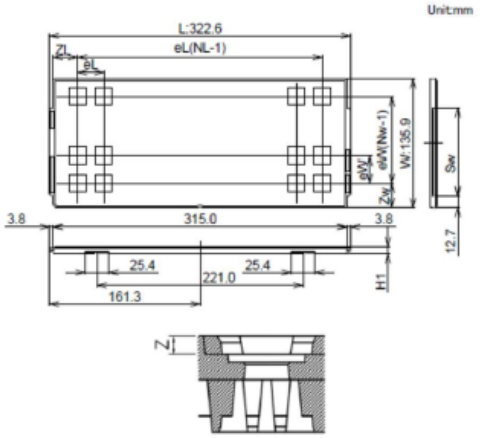
CURRENT



Tape Code		New	Current
		EC7080801-112	E16*12-☐☐-C0CA
Tape Dimensions (mm)	W	16.0	16.0
	P1	12.0	12.0
	A0	8.3	8.3
	B0	8.3	8.3
	K0	1.2	1.0
	F	7.5	7.5
	D1	2.0	1.5
Reel Dimensions (mm)	A	330	330
	W1	16.8	17.5
	W2	22.2	21.5
Maximum storage Pcs. IC/ Reel		2500	2500
Material		Carbon PS	Carbon PS
Surface resistance		Less than $1x10^{11}\Omega/\square$	Less than $1x10^{11}\Omega/\square$

48pin (7X7mm)

PACKING SPECIFICATION (TRAY)

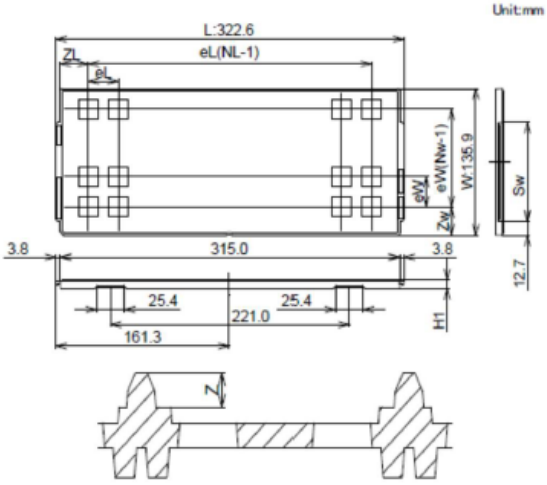


Tray Code		New	Current
		REV.C EAG0707-10	EAM0707-10
Position dimension of cells	Z	1.40	1.55
	Zw	11.55	10.35
	ZL	11.80	10.00
	eW	9.40	12.80
	eL	9.40	11.80
	Sw	92.1	92.1
Thickness (mm)	H1	7.62	7.62
Number of cells	Nw	13	10
	NL	32	26
Maximum storage pcs IC/Tray		416	260
Maximum storage pcs IC/Inner box		3328	2080
Material		Carbon PPE	Carbon PPE
Heat resistant temperature		135°C MAX	135°C MAX
JEDECorCustom		JEDEC	JEDEC
Surface resistance		Less than $1x10^{11}\Omega/\square$	Less than $1x10^{11}\Omega/\square$

40pin (6X6mm)

PACKING SPECIFICATION (TRAY)

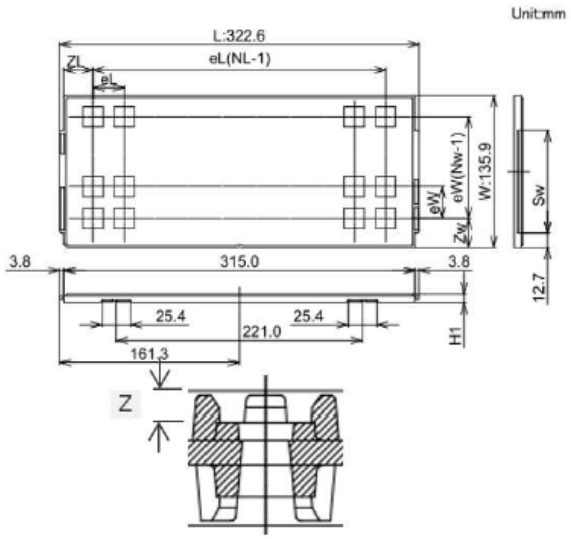
No Change



Tray Code		New	Current
		EAM0606-10	EAM0606-10
Position dimension of cells	Z	1.35	1.35
	Zw	8.15	8.15
	ZL	7.90	7.90
	eW	9.20	9.20
	eL	8.80	8.80
	Sw	92.1	92.1
Thickness (mm)	H1	7.62	7.62
Number of cells	Nw	14	14
	NL	35	35
Maximum storage pcs IC/Tray		490	490
Maximum storage pcs IC/Inner box		3920	3920
Material		Carbon PPE	Carbon PPE
Heat resistant temperature		135°C MAX	135°C MAX
JEDECorCustom		JEDEC	JEDEC
Surface resistance		Less than $1x10^{11}\Omega/\square$	Less than $1x10^{11}\Omega/\square$

32pin (5X5mm)

PACKING SPECIFICATION (TRAY)



Tray Code		New	Current
		EAM050501-10	Rev.B EAM050503-10
Position dimension of cells	Z	1.75	1.50
	Zw	8.15	8.15
	ZL	7.90	7.90
	eW	9.20	9.20
	eL	8.80	8.80
	Sw	92.10	92.10
Thickness (mm)	H1	7.62	7.62
Number of cells	Nw	14	14
	NL	35	35
Maximum storage pcs IC/Tray		490	490
Maximum storage pcs IC/Inner box		3920	3920
Material		Carbon PPE	Carbon PPE
Heat resistant temperature		135°C MAX	135°C MAX
JEDECorCustom		JEDEC	JEDEC
Surface resistance		Less than $1x10^{11}\Omega/\square$	Less than $1x10^{11}\Omega/\square$

4M Changing Points:

Change of material (Au to Cu), assembly and sorting factory

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

Product List:

	Current	Change	
pins	Part numer	Part numer	CS availablility date
64	R7FS5D37A3A01CNB#AC0	R7FS5D37A3A01CNB#AA0	Nov.1, 2020
64	R7FS5D37A3A01CNB#HC0	R7FS5D37A3A01CNB#HA0	Dec.1, 2020
64	R7FS3A77C3A01CNB#AC1	R7FS3A77C3A01CNB#AA1	Nov.31, 2020
40	R7FS3A6783A01CNF#AC0	R7FS3A6783A01CNF#AA0	under planning in 2021
48	R7FS3A6783A01CNE#AC0	R7FS3A6783A01CNE#AA0	under planning in 2021
64	R7FS3A6783A01CNB#AC0	R7FS3A6783A01CNB#AA0	under planning in 2021
64	R7FS3A37A3A01CNB#AC0	R7FS3A37A3A01CNB#AA0	under planning in 2021
64	R7FS3A17C3A01CNB#AC0	R7FS3A17C3A01CNB#AA0	under planning in 2021
40	R7FS1JA783A01CNF#AC0	R7FS1JA783A01CNF#AA0	under planning in 2021
48	R7FS1JA783A01CNE#AC0	R7FS1JA783A01CNE#AA0	under planning in 2021
32	R7FS128783A01CNG#AC1	R7FS128783A01CNG#AA1	under planning in 2021
48	R7FS128783A01CNE#AC1	R7FS128783A01CNE#AA1	under planning in 2021
40	R7FS124773A01CNF#AC1	R7FS124773A01CNF#AA1	under planning in 2021
48	R7FS124773A01CNE#AC1	R7FS124773A01CNE#AA1	under planning in 2021
64	R7FS124773A01CNB#AC1	R7FS124773A01CNB#AA1	under planning in 2021
64	R7FA6M1AD3CNB#AC0	R7FA6M1AD3CNB#AA0	Nov.1, 2020
64	R7FA4M1AB3CNB#AC0	R7FA4M1AB3CNB#AA0	under planning in 2021
48	R7FA4M1AB3CNE#AC0	R7FA4M1AB3CNE#AA0	under planning in 2021
40	R7FA4M1AB3CNF#AC0	R7FA4M1AB3CNF#AA0	under planning in 2021
48	R7FA2A1AB3CNE#AC0	R7FA2A1AB3CNE#AA0	under planning in 2021
40	R7FA2A1AB3CNF#AC0	R7FA2A1AB3CNF#AA0	under planning in 2021