PCN# : [MCP-AC-22-0060]

Product Change Notice (PCN)

Subject: **Materials and packing change for R8C/32x, R8C/M12A LSSOP 20pin package products**

Publication Date: 12/27/2022

Effective Date: 4/1/2023

Revision Description:

Initial release.

Description of Change:

Material change: Bonding wire (change from Au wire to Cu wire)
Lead frame (Shape change): Applicable only to R8C/M12A
(Refer to page 2 onward for target part number)
Mold resin (Mold resin type addition. Uses two types of mold resin)
Solder Plating (change from SnCu to Sn)

Packing change: Tube storage direction (Change 1 pin direction in tube)
Embossed tape storage quantity (2500pcs→4000pcs) and reel size (254mm→330mm)
(Refer to the "Deference specification" document)

Ordering P/N change: #U0, #W4 → #30, #54 (For details, refer to page 2 onward)

※ Please refer to the "Deference specification" document.
"MCP-AB-22-0131_R8C_32x_M12A_LSSOP20pin_Difference specification"

Affected Product List:

Refer to page 2 onwards.
Due to this change, the ordering part number is changed.

Reason for Change:

Stable supply for R8C products.

Impact on Fit, Form, Function, Quality & 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 2/28/2023.
Sample Availability Date: 4/1/2023
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.

Target part number list:

R8C/32x

Target part number	Part number after change
R5F21321DDSP#U0	R5F21321DDSP#30
R5F21321DDSP#W4	R5F21321DDSP#54
R5F21321DNSP#U0	R5F21321DNSP#30
R5F21321DNSP#W4	R5F21321DNSP#54
R5F21321DN102SP#W4	R5F21321DN102SP#54
R5F21321DN103SP#U0	R5F21321DN103SP#30
R5F21321DN104SP#U0	R5F21321DN104SP#30
R5F21321DN105SP#U0	R5F21321DN105SP#30
R5F21321DN107SP#W4	R5F21321DN107SP#54
R5F21321DN108SP#W4	R5F21321DN108SP#54
R5F21321DN109SP#W4	R5F21321DN109SP#54

Target part number	Part number after change
R5F21321DN110SP#U0	R5F21321DN110SP#30
R5F21322DDSP#U0	R5F21322DDSP#30
R5F21322DDSP#W4	R5F21322DDSP#54
R5F21322DNSP#U0	R5F21322DNSP#30
R5F21322DNSP#W4	R5F21322DNSP#54
R5F21322DN201SP#W4	R5F21322DN201SP#54
R5F21322DN207SP#W4	R5F21322DN207SP#54
R5F21322DN209SP#W4	R5F21322DN209SP#54
R5F21322DN211SP#W4	R5F21322DN211SP#54
R5F21322DN212SP#U0	R5F21322DN212SP#30
R5F21322DN213SP#U0	R5F21322DN213SP#30
R5F21322DN214SP#W4	R5F21322DN214SP#54
R5F21324DDSP#U0	R5F21324DDSP#30
R5F21324DDSP#W4	R5F21324DDSP#54
R5F21324DNSP#U0	R5F21324DNSP#30
R5F21324DNSP#W4	R5F21324DNSP#54
R5F21324DN310SP#W4	R5F21324DN310SP#54
R5F21324DN311SP#W4	R5F21324DN311SP#54
R5F21321MDSP#U0	R5F21321MDSP#30
R5F21321MDSP#W4	R5F21321MDSP#54
R5F21321MNSP#U0	R5F21321MNSP#30
R5F21321MNSP#W4	R5F21321MNSP#54
R5F21322MDSP#U0	R5F21322MDSP#30
R5F21322MDSP#W4	R5F21322MDSP#54
R5F21322MNSP#U0	R5F21322MNSP#30
R5F21322MNSP#W4	R5F21322MNSP#54
R5F21324MDSP#U0	R5F21324MDSP#30
R5F21324MDSP#W4	R5F21324MDSP#54
R5F21324MNSP#U0	R5F21324MNSP#30
R5F21324MNSP#W4	R5F21324MNSP#54
R5F21324MN500SP#W4	R5F21324MN500SP#54
R5F21324MYSP#W4	R5F21324MYSP#54
R5F21321CDSP#U0	R5F21321CDSP#30
R5F21321CDSP#W4	R5F21321CDSP#54
R5F21321CNSP#U0	R5F21321CNSP#30
R5F21321CNSP#W4	R5F21321CNSP#54
R5F21321CN110SP#W4	R5F21321CN110SP#54
R5F21322CDSP#U0	R5F21322CDSP#30
R5F21322CDSP#W4	R5F21322CDSP#54

Target part number	Part number after change
R5F21322CNSP#U0	R5F21322CNSP#30
R5F21322CNSP#W4	R5F21322CNSP#54
R5F21322CN102SP#W4	R5F21322CN102SP#54
R5F21322CN103SP#W4	R5F21322CN103SP#54
R5F21322CN104SP#W4	R5F21322CN104SP#54
R5F21322CN105SP#W4	R5F21322CN105SP#54
R5F21322CN106SP#W4	R5F21322CN106SP#54
R5F21322CN107SP#W4	R5F21322CN107SP#54
R5F21322CN108SP#W4	R5F21322CN108SP#54
R5F21322CN111SP#W4	R5F21322CN111SP#54
R5F21322CN114SP#W4	R5F21322CN114SP#54
R5F21322CN115SP#W4	R5F21322CN115SP#54
R5F21322CN120SP#W4	R5F21322CN120SP#54
R5F21322CN121SP#W4	R5F21322CN121SP#54
R5F21322CN123SP#W4	R5F21322CN123SP#54
R5F21322CN124SP#W4	R5F21322CN124SP#54
R5F21322CN125SP#W4	R5F21322CN125SP#54
R5F21322CN126SP#W4	R5F21322CN126SP#54
R5F21322CN127SP#W4	R5F21322CN127SP#54
R5F21324CDSP#U0	R5F21324CDSP#30
R5F21324CDSP#W4	R5F21324CDSP#54
R5F21324CD587SP#W4	R5F21324CD587SP#54
R5F21324CNSP#U0	R5F21324CNSP#30
R5F21324CNSP#W4	R5F21324CNSP#54
R5F21324CN551SP#W4	R5F21324CN551SP#54
R5F21324CN560SP#W4	R5F21324CN560SP#54
R5F21324CN569SP#W4	R5F21324CN569SP#54
R5F21324CN574SP#W4	R5F21324CN574SP#54
R5F21324CN578SP#W4	R5F21324CN578SP#54
R5F21324CN579SP#W4	R5F21324CN579SP#54
R5F21324CN584SP#W4	R5F21324CN584SP#54
R5F21324CN589SP#W4	R5F21324CN589SP#54
R5F21324CN593SP#W4	R5F21324CN593SP#54
R5F21324CN595SP#W4	R5F21324CN595SP#54
R5F21324CN600SP#W4	R5F21324CN600SP#54
R5F21324CN611SP#W4	R5F21324CN611SP#54
R5F21324CN620SP#U0	R5F21324CN620SP#30
R5F21324CN620SP#W4	R5F21324CN620SP#54
R5F21324CN621SP#W4	R5F21324CN621SP#54

Target part number	Part number after change
R5F21324CN623SP#U0	R5F21324CN623SP#30
R5F21324CN623SP#W4	R5F21324CN623SP#54
R5F21324CN628SP#W4	R5F21324CN628SP#54
R5F21324CN630SP#W4	R5F21324CN630SP#54
R5F21324CN633SP#W4	R5F21324CN633SP#54
R5F21324CN637SP#W4	R5F21324CN637SP#54
R5F21324CN638SP#W4	R5F21324CN638SP#54
R5F21324CN642SP#W4	R5F21324CN642SP#54
R5F21324CN646SP#U0	R5F21324CN646SP#30

R8C/M12A

Target part number	Part number after change
R5F2M120ADSP#U0	R5F2M120ADSP#30
R5F2M120ANSP#U0	R5F2M120ANSP#30
R5F2M120ANSP#W4	R5F2M120ANSP#54
R5F2M121ADSP#U0	R5F2M121ADSP#30
R5F2M121ANSP#U0	R5F2M121ANSP#30
R5F2M121AN200SP#W4	R5F2M121AN200SP#54
R5F2M121AN201SP#W4	R5F2M121AN201SP#54
R5F2M121AN202SP#W4	R5F2M121AN202SP#54
R5F2M122ADSP#U0	R5F2M122ADSP#30
R5F2M122ADSP#W4	R5F2M122ADSP#54
R5F2M122ANSP#U0	R5F2M122ANSP#30
R5F2M122ANSP#W4	R5F2M122ANSP#54

Difference of specification (R8C/32x, R8C/M12A LSSOP20pin)

(Wire, Mold resin, Lead frame, Plating, Packing)

Assembly factory: RSB Sorting factory: RSB

November. 26. 2022

MCU PRODUCT MARKETING DEPARTMENT
MCU DEVICE SOLUTION BUSINESS DIVISION
IoT AND INFRASTRUCTURE BUSINESS UNIT
RENESAS ELECTRONICS CO., LTD.

MCP-AB-22-0131

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(Rev. 5.0-1 October 2020)

Difference outline

■ Target products

R8C/32x, R8C/M12A LSSOP 20pin products

■ Change items

Material change: Bonding wire (change form Au wire to Cu wire)
Lead frame (Shape change): Applicable only to R8C/M12A (Refer to the PCN document)
Mold resin (Mold resin type addition. Uses two types of mold resin)
Solder Plating (change from SnCu to Sn)

Packing change: Tube storage direction: Change 1 pin direction in tube (Refer to Page 6)
Embossed tape storage quantity (2500pcs→4000pcs) and reel size (254mm→330mm)
(Refer to Page 7)

Ordering P/N change: #U0, #W4 → #30, #54 (For details, refer to the part number of PCN#:[MCP-AC-22-0060])

■ Reason for change

Stabilization of supply.

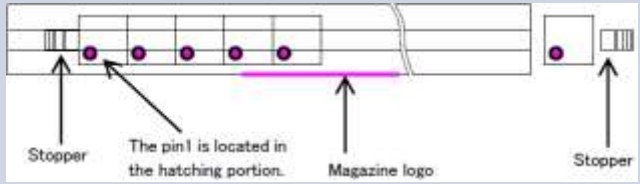
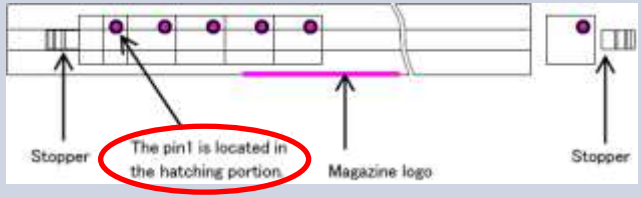
- Impact on Fit, Form, Function: No impact. Outline does not change.
- Quality & Reliability: No impact

Material change items

Item		Before change	After change
Bonding wire	Material	Au wire	Cu wire
Lead frame	Shape	Shape is different. Applicable only to R8C/M12A (same as R8C/32x)	
	Material	No change	
Mold resin	Material	Epoxy resin A * (halogen-free)	Epoxy resin A or B * (halogen-free)
Solder plating	Material	SnCu	Sn

* Although there are material changes, the combination after the change has a track record of mass production, and there is no change in reliability and characteristics.

Packing change items

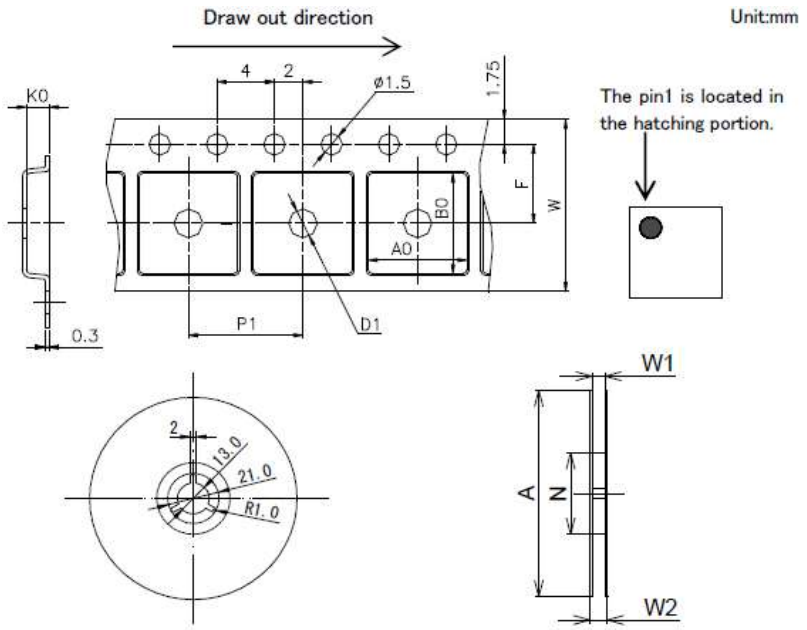
Items		Before change	After change
Tube	Storage direction*1		
Embossed tape	Reel size *2	254mm (refer to next page for detail)	330mm (refer to next page for detail)
	Storage number *2	2,500 pcs	4,000 pcs
	Desiccant *2		

*1 The method after the change has been mass-produced in RL78.

*2 The material and method after the change has a track record of mass production in RL78.

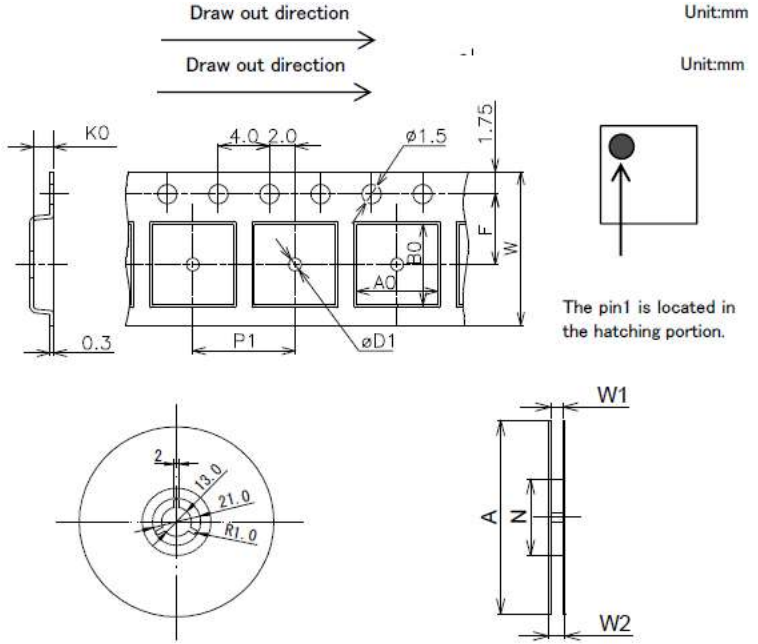
Packing change items: detail of reel size

Before change



Tape Code		MTE1208G-20P2E-A
Tape Dimensions (mm)	W	12.0
	P1	8.0
	A0	6.9
	B0	7.0
	K0	1.6
	F	5.5
	D1	2.0
Reel Dimensions (mm)	A	254
	N	100
	W1	13.4
	W2	17.4
Maximum storage No. IC/ Reel		2500

After change



Tape Code		MTE1208G-20P2E-A
Tape Dimensions (mm)	W	12
	P1	8
	A0	6.9
	B0	7.0
	K0	1.6
	F	5.5
	D1	2.0
Reel Dimensions (mm)	A	330
	N	100
	W1	13.4
	W2	17.4
Maximum storage No. IC/ Reel		4000

* The material and method after the change has a track record of mass production in RL78.

Lead frame shape

R8C/M12A 20pin LSSOP lead frame

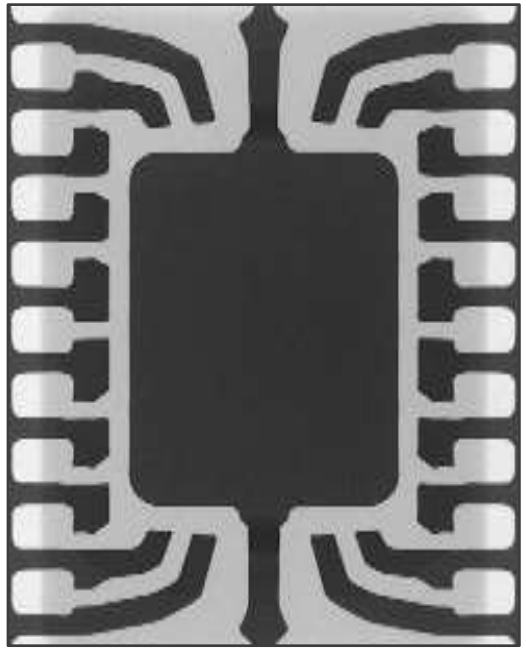
Consolidate into certified and proven lead frames.

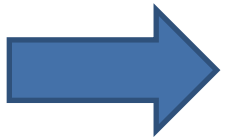
Before change
Frame A

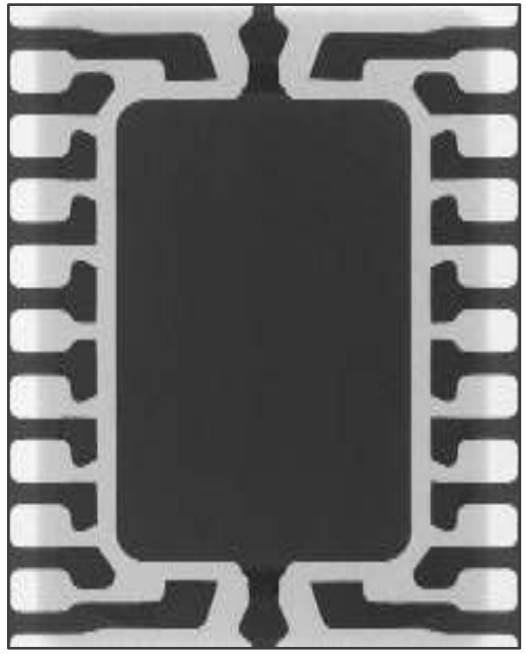
Applicable only to
R8C/M12A

After change
Frame B

R8C/32x and others







Marking visibility

※Character is reference example

	Surface	Back side
Additional mold resin		
Current mold resin		

Manufacturing equipment and manufacturing process

Verification item	Before change	After change	
Manufacturing equipment and process	Dicing process	Dicing process	There are no changes in equipment or manufacturing methods.
	Die bonding process	Die bonding process	There are no changes in equipment or manufacturing methods.
	Wire bonding process	Wire bonding process	The wire material will be Au wire or Cu wire. Cu wire will be bonding under forming gas to avoid Oxidation of Cu wire at wire bonding process. There is no equipment change.
	Molding process	Molding process	There are no changes in equipment or manufacturing methods.
	Marking / lead treatment process	Marking / lead treatment process	There are no changes in equipment or manufacturing methods.
	Inspection	Inspection	There is no change in inspection.
	Packing	Packing	There is no change in packing.
	Warehousing / Shipment	Warehousing / Shipment	There are no changes in warehousing or shipments.

4M change points (from Au wire to Cu wire)

Item	Check Result	Judgment
Machine	Bonding of Cu wire products is performed using the equipment used for Au wire products. It has been released after adjustment of bonding condition for the Cu wiring. Cu wire is bonding under forming gas to avoid Oxidation of Cu wire at wire bonding process. Similar products using the Cu wire has been mass-produced and confirmed that there is no problem with quality.	**No risk**
Method	Bonding method (thermosonic bonding) and process flow for the Cu wiring are same as the Au wiring.	**No risk**
Man	Adopt operator certification system. Only certificated operator can work for the production.	**No risk**
Material	Only use certified Cu wire, same as Au wire. The finished product is also tested for reliability equivalent to the Au wire product, and we have confirmed that there is no problem.	**No risk**

4M change points (Lead frame shape change)

Item	Check Result	Judgement
Machine	There is no change in the equipment.	**No risk**
Method	There is no change in the manufacturing method.	**No risk**
Man	Adopt operator certification system. Only certificated operator can work for the production.	**No risk**
Material	Only use certificated materials. The lead frame to be changed has a mass production record. It has been confirmed that there is no problem with quality.	**No risk**

4M change points (Mold resin change)

Item	Check Result	Judgement
Machine	There is no change in the molding equipment.	**No risk**
Method	There is no change in the mold manufacturing method.	**No risk**
Man	Adopt operator certification system. Only certificated operator can work for the production.	**No risk**
Material	Only use certificated materials. The mold resin to be changed has a mass production record. It has been confirmed that there is no problem with quality.	**No risk**

4M change points (Solder plating)

Item	Check Result	Judgment
Machine	There is no change in the equipment.	**No risk**
Method	There is no change in the manufacturing method.	**No risk**
Man	Adopt operator certification system. Only certificated operator can work for the production.	**No risk**
Material	The solder plating material changes from SnCu to Sn. We have confirmed that there is no problem with quality.	**No risk**

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