Product Change Notification

(Notification - P1903016-DIGI)

(MCP-AC-19-0012 / DPE005 / MCP-AB-19-0008 / 3)

March 18, 2019

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 various changes to changes select RL78 G13/G14 devices. See Appendix 1 for a list of affected part numbers and changes. Appendix 2 provides additional change details.

There is no part number change. There is no change in product specifications and/or characteristics. There is no impact to quality and/or reliability.

Affected Products: A review of our records indicates the list of products in Appendix 1 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 new products begins. Cross shipments of old and new product may continue for a period of time.	**Aug. 1st, 2019**

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 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 1: Digi-Key Affected Part Number List

Booking PN	Change
R5F104GKAFB#30	1. Die Mount Material Change 2. Mold Resin Material Change 3. No Bond Wire Change 4. Addition of ASEKH as Assembly Site 5. Addition of RSB & KYEC as FT Sites 6. Package Dimension Change 7. Leadframe Material Change 8. Top Mark Change;
R5F104GKAFB#50	
R5F104GLAFB#30	
R5F104GLAFB#50	
R5F104LKAFB#30	
R5F104LKAFB#50	
R5F104LLAFB#30	
R5F104LLAFB#50	
R5F104MKAFB#30	
R5F104MKAFB#50	
R5F104MLAFB#30	
R5F104MLAFB#50	
R5F104PKAFB#30	
R5F104PKAFB#50	
R5F104PLAFB#30	
R5F104PLAFB#50	

Appendix 2: Change Details

DIFFERENCE OF SPECIFICATION (RL78/G13,G14)

ASSEMBLY: RSB → ASEKH , SORTING: RSB → RSB/KYEC

BONDING WIRE: Cu

BROAD-BASED SOLUTION BUSINESS UNIT
RENESAS ELECTRONICS CO., LTD.

MCP-AB-19-0008

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(Note 2) "Renesas Electronics product(s)" means any product developed or manufactured by or for Renesas Electronics

(Rev.4.0-2 November 2017)

Appendix 2: Change Details (cont.)

Outline

- Addition of assembly factory:
  Current factory: Renesas Semiconductor (Beijing) Co.,Ltd (RSB)
  Additional factory: ADVANCED SEMICONDUCTOR ENGINEERING, INC. (ASEKH)
- Addition of sorting factory:
  Current factory: Renesas Semiconductor (Beijing) Co.,Ltd (RSB)
  Additional factory: King Yuan Electronics Co., Ltd. （KYEC）
- Change of material: 1)Lead frame, 2)Die mount, 3)Resin
- Addition of package outline:
  Assembly factory is added, and the package outline form is also added.
- Change of marking: Changes at assembly factory
- Storage conditions after opening the moistureproof packaging of ASEKH products:
  Current: 30°C/70%RH/168hr
  New: 30°C/60%RH/168hr (Confirming to the JEDEC standard)
- Specification and characteristics of product:
  No change
- Quality and reliability:
  No change

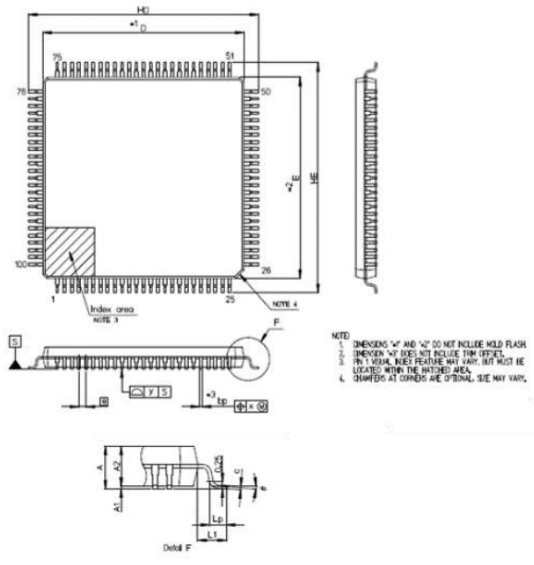
Difference of specification

Item		Current	New
Assembly factory		RSB	ASEKH
Sorting factory		RSB	RSB / KYEC
Package	Outline	No change	Change (Refer to pages 5 to 12)
Lead frame	Material	No change	
	Inner pattern	No change	Change (Refer to page13)
Die mount	Material	No change (Ag epoxy paste)	Change (Ag epoxy paste)
Bonding wire	Material	No change Cu (Pd coating)	
Resin	Material	No change (halogen-free)	Change (halogen-free)
Plating	Material	No change	
Marking	Font	No change	Change (Refer to page 14)
	Digit number	No change	
Packing	Tray/ Emboss tape	No change	

※ There is no impact on reliability and specification by material change.

Appendix 2: Change Details (cont.)

Difference of Outline Dimension_14mm×14mm 100pin



Symbol	Terminology	New	Current
D	Package length	14.0±0.1	14±0.1
E	Package width	14.0±0.1	14±0.1
A2	Package height	1.4	(1.4)
HD	Overall length	16.0±0.2	16±0.2
HE	Overall width	16.0±0.2	16±0.2
A	Seated height	1.70max	1.7max
A1	1st standoff height	0.05 to 0.15	0.1±0.05
bp	Terminal width	0.20 +0.07/-0.05	0.2±0.05
c	Terminal thickness	0.09 to 0.20	0.145±0.055
θ	Angle of terminal flat portions	3.5° +4.5°/-3.5°	0 to 8°
e	Terminal pitch	0.5	0.5
x	Tolerance value of terminal center position	0.08max	0.08max
y	Coplanarity	0.08max	0.08max
Lp	Length of soldered part	0.60±0.15	-
L1	Terminal length	1.0	-

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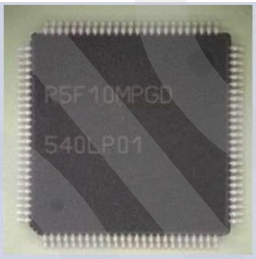
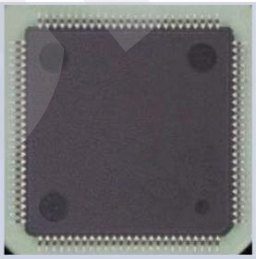
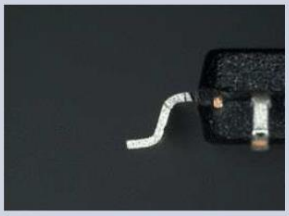
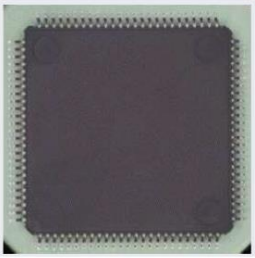
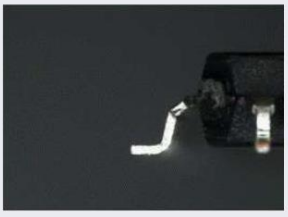
Difference of Appearance_14mm×14mm 100pin

※Character is reference example

	Package surface	Package back	Lead bending shape
New			
Current			

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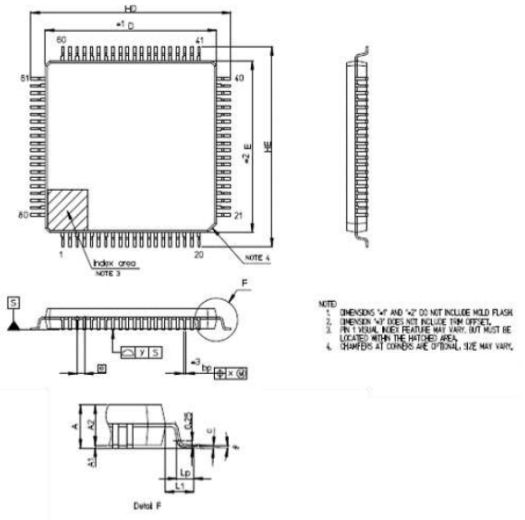
Appendix 2: Change Details (cont.)

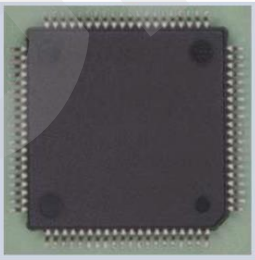
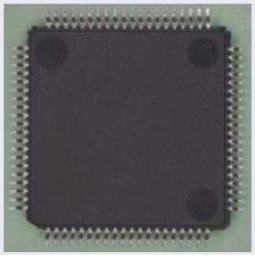
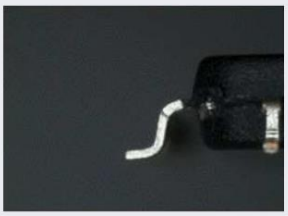
Difference of Outline Dimension_12mm×12mm 80pin



Symbol	Terminology	New	Current
D	Package length	12.0±0.1	12±0.1
E	Package width	12.0±0.1	12±0.1
A2	Package height	1.4	(1.4)
HD	Overall length	14.0±0.2	14±0.2
HE	Overall width	14.0±0.2	14±0.2
A	Seated height	1.70max	1.7max
A1	1st standoff height	0.05 to 0.15	0.1±0.05
bp	Terminal width	0.20 +0.07/-0.05	0.2±0.05
c	Terminal thickness	0.09 - 0.20	0.145±0.055
θ	Angle of terminal flat portions	3.5° +4.5°/-3.5°	0 to 8°
e	Terminal pitch	0.5	0.5
x	Tolerance value of terminal center position	0.08max	0.08max
y	Coplanarity	0.08max	0.08max
Lp	Length of soldered part	0.60±0.15	–
L1	Terminal length	1.0	–

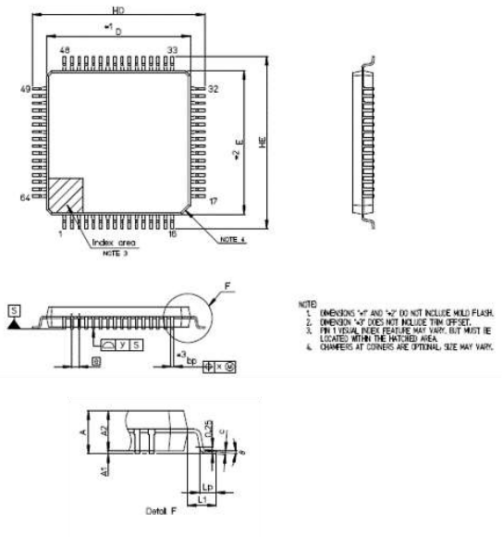
Difference of Appearance_12mm×12mm 80pin

※Character is reference example

	Package surface	Package back	Lead bending shape
New			
Current			

Appendix 2: Change Details (cont.)

Difference of Outline Dimension_10mm×10mm 64pin



Symbol	Terminology	New	Current
D	Package length	10.0±0.1	10±0.1
E	Package width	10.0±0.1	10±0.1
A2	Package height	1.4	(1.4)
HD	Overall length	12.0±0.2	12±0.2
HE	Overall width	12.0±0.2	12±0.2
A	Seated height	1.70max	1.7max
A1	1st standoff height	0.05 to 0.15	0.1±0.05
bp	Terminal width	0.20 +0.07/-0.05	0.2±0.05
c	Terminal thickness	0.09 - 0.20	0.145±0.055
θ	Angle of terminal flat portions	3.5° +4.5°/-3.5°	0 to 8°
e	Terminal pitch	0.5	0.5
x	Tolerance value of terminal center position	0.08max	0.08max
y	Coplanarity	0.08max	0.08max
Lp	Length of soldered part	0.60±0.15	–
L1	Terminal length	1.0	–

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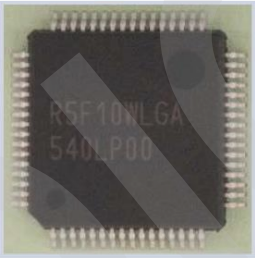
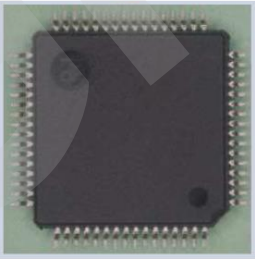
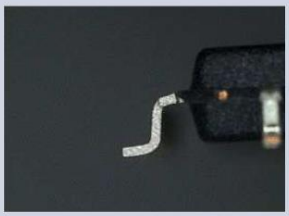
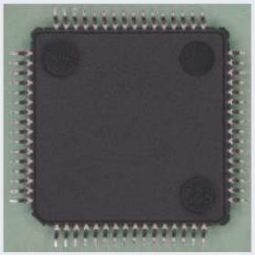
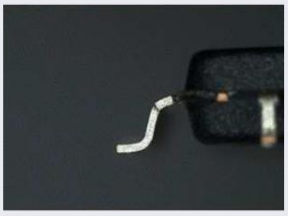
Difference of Appearance_10mm×10mm 64pin

※Character is reference example

	Package surface	Package back	Lead bending shape
New			
Current			

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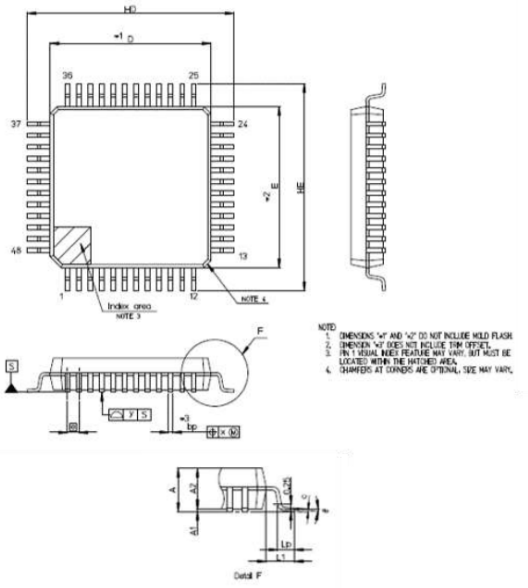
Appendix 2: Change Details (cont.)

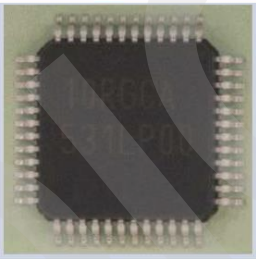
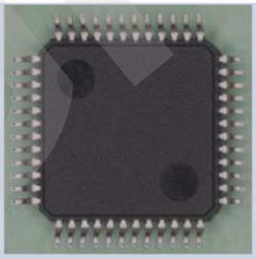
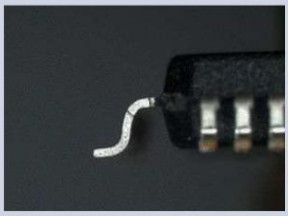
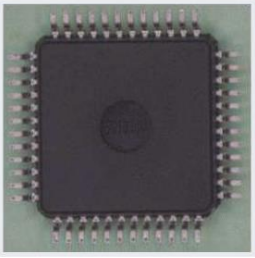
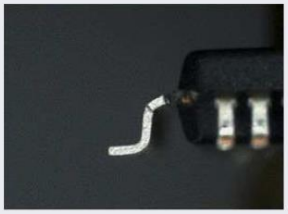
Difference of Outline Dimension_7mm×7mm 48pin



Symbol	Terminology	New	Current
D	Package length	7.0±0.1	7±0.1
E	Package width	7.0±0.1	7±0.1
A2	Package height	1.4	(1.4)
HD	Overall length	9.0±0.2	9±0.2
HE	Overall width	9.0±0.2	9±0.2
A	Seated height	1.70max	1.7max
A1	1st standoff height	0.05 - 0.15	0.1±0.1
bp	Terminal width	0.20 +0.07/-0.03	0.22±0.05
c	Terminal thickness	0.09 to 0.20	0.125+0.02/-0.05
θ	Angle of terminal flat portions	3.5° +4.5°/-3.5°	0 to 8°
e	Terminal pitch	0.5	0.5
x	Tolerance value of terminal center position	0.08max	0.08max
y	Coplanarity	0.08max	0.1max
Lp	Length of soldered part	0.60±0.15	–
L1	Terminal length	1.0	–

Difference of Appearance_7mm×7mm 48pin

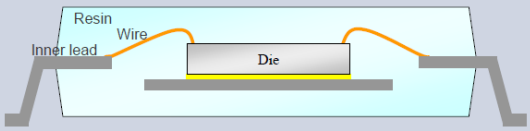
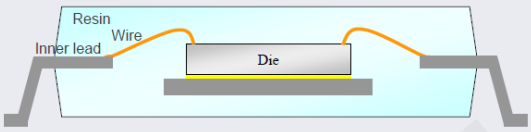
※Character is reference example

	Package surface	Package back	Lead bending shape
New			
Current			

Appendix 2: Change Details (cont.)

PKG structure image

※PKG cross section and die pad shape are reference examples

Assembly Line	PKG cross section	Die pad shape
New		 7mm×7mm～14mm×14mm
Current		  7mm×7mm　10mm×10mm～14mm×14mm

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

Difference of Marking Visibility

※Character is reference example

Assembly Line	New	Current
Whole Photo		
Detail Photo		

Appendix 2: Change Details (cont.)

4M changing points

(Addition of assembly and sorting factory , Change of material)

Item	Check Result	judgement
Machine	Changing at assembly and sorting. 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	Using only certificated copper wire. And furthermore certificated materials for the Cu wiring products are applied. The products has been certificated by reliability test same as present products and have no risk.	**No risk**

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