

Product Change Notice (PCN)

Subject: Assembly & sorting factory addition for RL78/G13, RL78/G14 LQFP44pin package products.

Publication Date: 9/13/2024

Effective Date: 12/27/2024

Revision Description:

Initial release

Description of Change:

Group name : RL78/G13、RL78/G14

Target package : 10mm×10mm 0.8mm pitch 44pin LQFP

1) Assembly and sorting factory:

Additional factory: Renesas Semiconductor (Beijing) Co., Ltd. (Beijing)

Existing assembly factory: Renesas Semiconductor KL Sdn. Bhd. (KL)
 Advanced Semiconductor Engineering Inc. (ASEKH)
 Greatek Electronics Inc. (Greatek)

Existing sorting factory: Renesas Semiconductor KL Sdn. Bhd. (KL)
 King Yuan Electronics Co., Ltd. (KYEC)
 Renesas Semiconductor (Beijing) Co., Ltd. (Beijing)

Note) Existing factories are different depending on the part number.

2) Assembly material

Use materials certified by additional factory.
 Refer to the “Appendix” for detail.

3) Package outline

Refer to the “Appendix” for detail.
 There is no change in footprint for additional factory products.

4) Marking

Some marking specifications are changed.
 Refer to the “Appendix” for detail.

5) Storage conditions after opening the moisture proof packaging:

Same as the KL condition : 30 °C/70%RH/ within 168hr

Affected Product List:

R5F100FAAFP#10	R5F100FAAFP#50	R5F100FAAFP#70	R5F100FADFP#50
R5F100FAGFP#10	R5F100FAGFP#50	R5F100FAGFP#70	R5F100FCAA03FP#10
R5F100FCAA03FP#30	R5F100FCAA04FP#10	R5F100FCAA04FP#30	R5F100FCAA05FP#50
R5F100FCAA08FP#50	R5F100FCAA10FP#50	R5F100FCAA11FP#50	R5F100FCAA12FP#50
R5F100FCAFP#10	R5F100FCAFP#50	R5F100FCAFP#70	R5F100FCDE02FP#30
R5F100FCDFP#50	R5F100FCGFP#10	R5F100FCGFP#50	R5F100FCGFP#70
R5F100FCGG00FP#10	R5F100FCGG00FP#50	R5F100FCGG01FP#10	R5F100FDA101FP#50
R5F100FDAFP#10	R5F100FDAFP#50	R5F100FDAFP#70	R5F100FDDFP#50
R5F100FDGFP#10	R5F100FDGFP#50	R5F100FDGFP#70	R5F100FEAFP#10
R5F100FEAFP#50	R5F100FEAFP#70	R5F100FEDFP#50	R5F100FEGFP#10
R5F100FEGFP#50	R5F100FEGFP#70	R5F100FFAFP#10	R5F100FFAFP#50

R5F100FFAFP#70	R5F100FFDFP#50	R5F100FFGFP#10	R5F100FFGFP#50
R5F100FFGFP#70	R5F100FGAFP#10	R5F100FGAFP#50	R5F100FGAFP#70
R5F100FGDFP#50	R5F100FGGFP#10	R5F100FGGFP#50	R5F100FGGFP#70
R5F100FHAFP#10	R5F100FHAFP#50	R5F100FHAFP#70	R5F100FHDFP#50
R5F100FHGFP#10	R5F100FHGFP#50	R5F100FHGFP#70	R5F100FJAFP#10
R5F100FJAFP#50	R5F100FJAFP#70	R5F100JDFP#50	R5F100FJGFP#10
R5F100FJGFP#50	R5F100FJGFP#70	R5F100FKAFP#10	R5F100FKAFP#50
R5F100FKAFP#70	R5F100FKDFP#10	R5F100FKDFP#50	R5F100FKDFP#70
R5F100FLAFP#10	R5F100FLAFP#50	R5F100FLAFP#70	R5F100FLDFP#10
R5F100FLDFP#50	R5F100FLDFP#70	R5F101FAAFP#10	R5F101FAAFP#50
R5F101FAAFP#70	R5F101FADE00FP#30	R5F101FADFP#10	R5F101FADFP#50
R5F101FCAFP#10	R5F101FCAFP#50	R5F101FCAFP#70	R5F101FCDFP#10
R5F101FCDFP#50	R5F101FDAFP#10	R5F101FDAFP#50	R5F101FDAFP#70
R5F101FDDFP#50	R5F101FEAFP#10	R5F101FEAFP#50	R5F101FEAFP#70
R5F101FEDFP#50	R5F101FFAFP#10	R5F101FFAFP#50	R5F101FFAFP#70
R5F101FFDFP#50	R5F101FGAFP#10	R5F101FGAFP#50	R5F101FGAFP#70
R5F101FGDFP#50	R5F101FHAFP#10	R5F101FHAFP#50	R5F101FHAFP#70
R5F101FHDFP#50	R5F101FJAFP#10	R5F101FJAFP#50	R5F101FJAFP#70
R5F101FJDFP#50	R5F101FKAFP#10	R5F101FKAFP#50	R5F101FKAFP#70
R5F101FKDFP#10	R5F101FKDFP#50	R5F101FKDFP#70	R5F101FLAFP#10
R5F101FLAFP#50	R5F101FLAFP#70	R5F101FLDFP#10	R5F101FLDFP#50
R5F101FLDFP#70	R5F104FAAFP#10	R5F104FAAFP#50	R5F104FAAFP#70
R5F104FADFP#50	R5F104FAGFP#10	R5F104FAGFP#50	R5F104FAGFP#70
R5F104FCAFP#10	R5F104FCAFP#50	R5F104FCAFP#70	R5F104FCDFP#50
R5F104FCGFP#10	R5F104FCGFP#50	R5F104FCGFP#70	R5F104FDAFP#10
R5F104FDAFP#50	R5F104FDAFP#70	R5F104FDDFP#50	R5F104FDGFP#10
R5F104FDGFP#50	R5F104FDGFP#70	R5F104FEAFP#10	R5F104FEAFP#50
R5F104FEAFP#70	R5F104FEDFP#50	R5F104FEGFP#10	R5F104FEGFP#50
R5F104FEGFP#70	R5F104FFAFP#10	R5F104FFAFP#50	R5F104FFAFP#70
R5F104FFDFP#50	R5F104FFGFP#10	R5F104FFGFP#50	R5F104FFGFP#70
R5F104FGAFP#10	R5F104FGAFP#50	R5F104FGAFP#70	R5F104FGDFP#50
R5F104FGGFP#10	R5F104FGGFP#50	R5F104FGGFP#70	R5F104FHAFP#10
R5F104FHAFP#50	R5F104FHAFP#70	R5F104FHDFP#50	R5F104FHGFP#10
R5F104FHGFP#50	R5F104FHGFP#70	R5F104FJAFP#10	R5F104FJAFP#50
R5F104FJAFP#70	R5F104FJDFP#50	R5F104FJGFP#10	R5F104FJGFP#50
R5F104FJGFP#70			

Reason for Change:

Stable supply for target group products.

Impact on Fit, Form, Function, Quality & Reliability:

- Impact on Fit : No Impact
- Form : Refer to the "Appendix" for detail.
- Function : No Impact
- Quality : No Impact
- Reliability : No Impact

Product Identification:

Our production history data can be checked from packing label or trace code.

Qualification Status: Available from 10/18/2024

Sample Availability Date: 11/4/2024

PCN sample is a representative ES sample.

The ES sample has the same functionality as the mass-produced product and its sample is the representative (ROM/RAM capacity, Fields of application and Wafer process).

Differences from MP products: The sorting place is different (the test program is the same).

Device Material Declaration: Please contact your Renesas sales representative.

- 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.

Appendix

DIFFERENCE OF SPECIFICATION

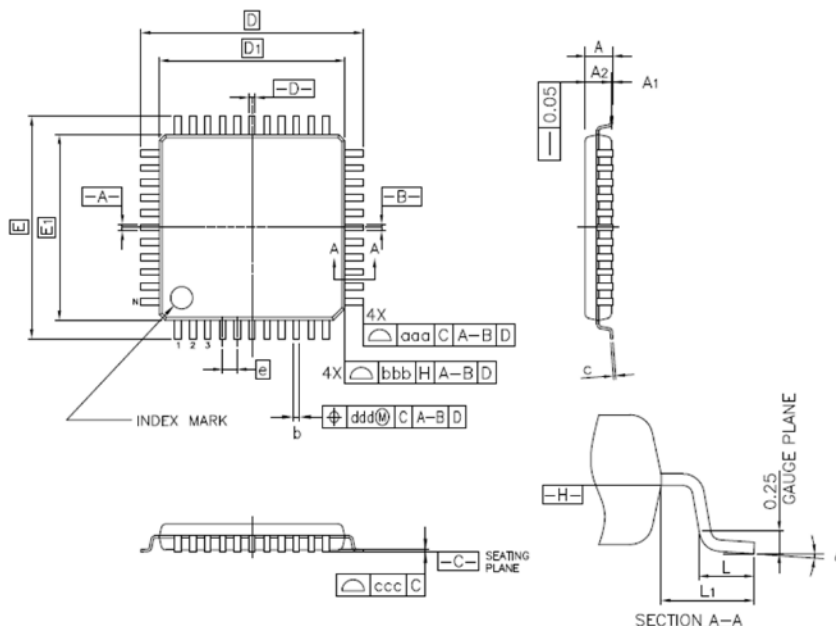
Item	Additional factory	Existing factory	Existing factory	Existing factory
Assembly factory	Beijing	KL	Greatek	ASEKH
Sorting factory	Beijing	KL	KYEC	Beijing or KYEC
Package	Outline	There are differences (Refer to the Package outline and the Dimension comparison)		
Lead frame	Material	No change		
	Inner pattern	There are differences (Refer to the Package structure image)		
Die mount	Material	Ag epoxy paste D *	Ag epoxy paste A *	Ag epoxy paste B *
Bonding wire	Material	No change: Cu (Pd coating)		
Resin	Material	Epoxy resin D * (halogen-free)	Epoxy resin A * (halogen-free)	Epoxy resin B * (halogen-free)
Plating	Material	No change		
Marking		There are differences (Refer to the Marking specification and the Marking photos)		
Packing	Tray/ Emboss tape	No change		
Storage conditions	after opening	30°C/70%RH/ within 168hr		30°C/60%RH/ within 168hr (JEDEC standard)

* Factory certified materials.

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

Package outline (Beijing)

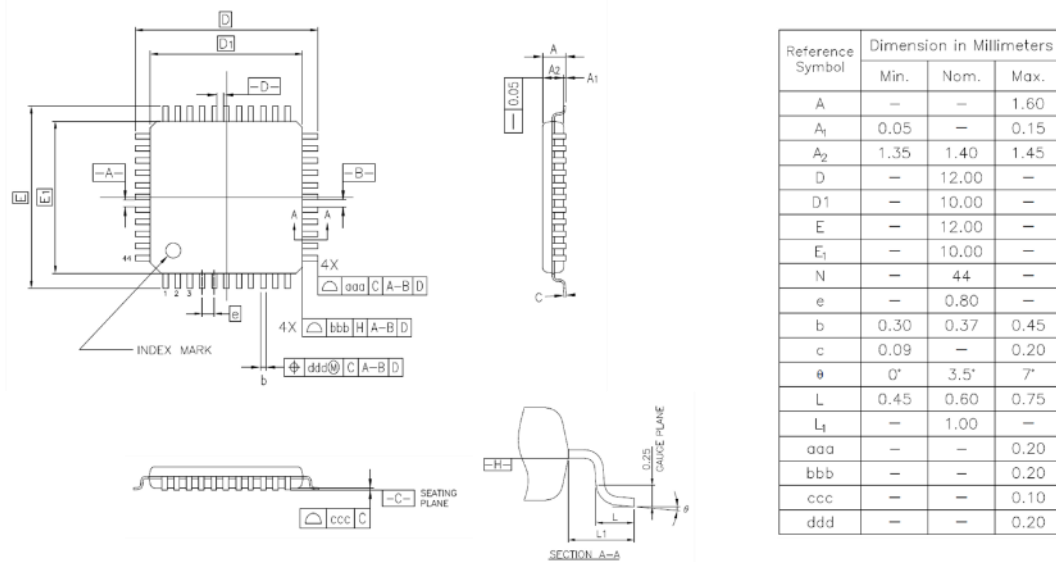
RENESAS Code : PLQP0044GF-A



Reference Symbol	Dimension in Millimeters		
	Min.	Nom.	Max.
A	—	—	1.70
A ₁	0.05	—	0.15
A ₂	1.35	1.40	1.45
D	12.00 BSC.		
D ₁	10.00 BSC.		
E	12.00 BSC.		
E ₁	10.00 BSC.		
N	—	44	—
e	0.80 BSC.		
b	0.30	0.37	0.45
c	0.09	—	0.20
e	0*	3.5*	8*
L	0.45	0.60	0.75
L ₁	1.00 REF.		
aaa	—	—	0.20
bbb	—	—	0.20
ccc	—	—	0.10
ddd	—	—	0.20

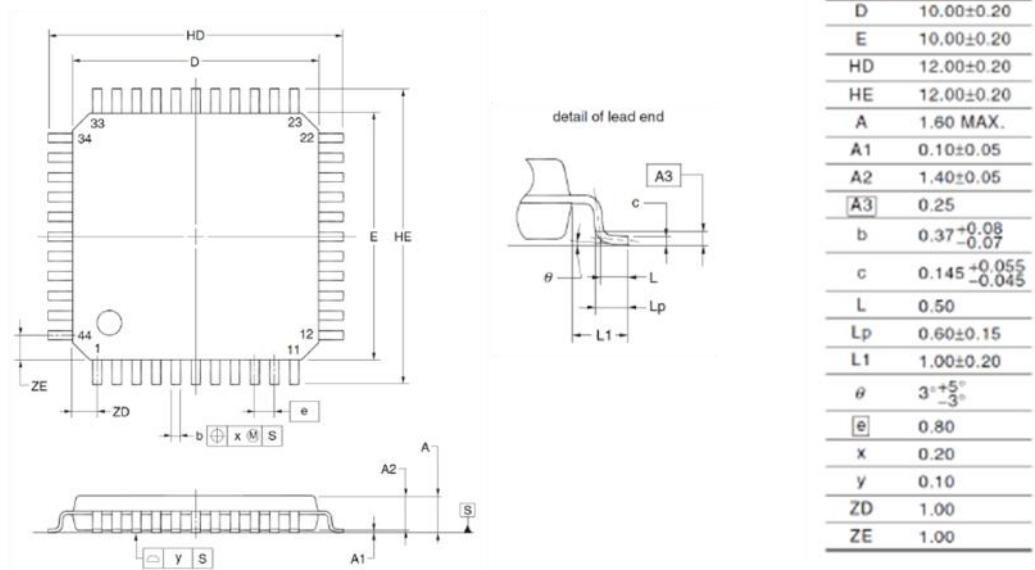
Package outline (Greatek)

RENESAS Code : PLQP0044GE-A



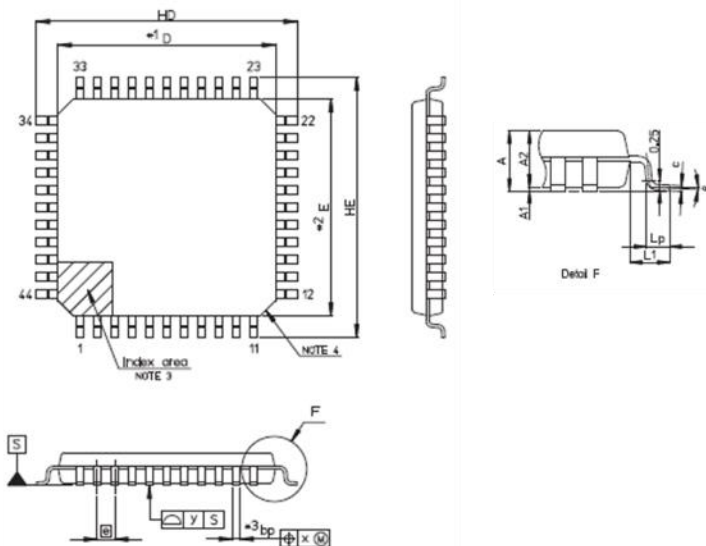
Package outline (KL)

RENESAS Code : PLQP0044GC-A



Package outline (ASEKH)

RENESAS Code : PLQP0044GC-D



Reference Symbol	Dimension in Millimeters		
	Min	Nom	Max
D	9.8	10.0	10.2
E	9.8	10.0	10.2
A2	—	1.4	—
HD	11.8	12.0	12.2
HE	11.8	12.0	12.2
A	—	—	1.6
A1	0.05	—	0.15
bp	0.22	0.37	0.45
c	0.09	—	0.20
θ	0°	3.5°	8°
e	—	0.80	—
x	—	—	0.20
y	—	—	0.10
Lp	0.45	0.6	0.75
L1	—	1.0	—

Dimension comparison

Beijing Symbol	PLQP0044GF-A			Greatek Symbol	PLQP0044GE-A			KL Symbol	PLQP0044GC-A			ASEKH Symbol	PLQP0044GC-D		
	Dimension in Millimeters				Dimension in Millimeters				Dimension in Millimeters				Dimension in Millimeters		
	Min	Nom	Max		Min	Nom	Max		Min	Nom	Max		Min	Nom	Max
A	-	-	1.70	A	-	-	1.60	A	-	-	1.60	A	-	-	1.60
A1	0.05	-	0.15	A1	0.05	-	0.15	A1	0.05	0.10	0.15	A1	0.05	-	0.15
A2	1.35	1.40	1.45	A2	1.35	1.40	1.45	A2	1.35	1.40	1.45	A2	-	1.40	-
D	-	12.00	-	D	-	12.00	-	HD	11.80	12.00	12.20	HD	11.80	12.00	12.20
D1	-	10.00	-	D1	-	10.00	-	D	9.80	10.00	10.20	D	9.80	10.00	10.20
E	-	12.00	-	E	-	12.00	-	HE	11.80	12.00	12.20	HE	11.80	12.00	12.20
E1	-	10.00	-	E1	-	10.00	-	E	9.80	10.00	10.20	E	9.80	10.00	10.20
N	-	44	-	N	-	44	-	-	-	-	-	-	-	-	-
e	-	0.80	-	e	-	0.80	-	e	-	0.80	-	e	-	0.80	-
b	0.30	0.37	0.45	b	0.30	0.37	0.45	b	0.30	0.37	0.45	bd	0.22	0.37	0.45
c	0.09	-	0.20	c	0.09	-	0.20	c	0.10	0.145	0.20	c	0.09	-	0.20
θ	0°	3.5°	8°	θ	0°	3.5°	7°	θ	0°	3°	8°	θ	0°	3.5°	8°
L	0.45	0.60	0.75	L	0.45	0.60	0.75	Lp	0.45	0.60	0.75	Lp	0.45	0.60	0.75
L1	-	1.00	-	L1	-	1.00	-	L1	0.80	1.00	1.20	L1	-	1.00	-
aaa	-	-	0.20	aaa	-	-	0.20	-	-	-	-	-	-	-	-
bbb	-	-	0.20	bbb	-	-	0.20	-	-	-	-	-	-	-	-
ccc	-	-	0.10	ccc	-	-	0.10	y	-	0.10	-	y	-	0.10	-
ddd	-	-	0.20	ddd	-	-	0.20	x	-	0.20	-	x	-	0.20	-

Package structure image

Package Section and die pad shape is a reference example.

Assembly factory	PKG cross section	Die pad shape
Additional factory		<p>Beijing</p>
Existing factory		<p>KL / Greatek / ASEKH</p>

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

Marking specifications









Marking position is reference example.

Product	Beijing (Additional factory)	KL (Existing factory)	Greatek (Existing factory)	ASEKH (Existing factory)
Blank products				
	1st row - 2nd row 9 characters: product name 3rd row 7 characters: Lot №	1st row 9 characters: product name 2nd row - 3rd row 9 characters: Lot №	1st row - 2nd row 9 characters: product name 3rd row 7 characters: Lot №	1st row - 2nd row 9 characters: product name 3rd row 7 characters: Lot №
ROM products				
	1st row 3 characters: ROM code 2nd row 8 characters: product name 3rd row 7 characters: Lot №	1st row 8 characters: product name 2nd row 3 characters: ROM code 3rd row 9 characters: Lot №	1st row 3 characters: ROM code 2nd row 8 characters: product name 3rd row 7 characters: Lot №	1st row 3 characters: ROM code 2nd row 8 characters: product name 3rd row 7 characters: Lot №

* Marking specification of Beijing product is as same as Geatek and ASEKH one.

Marking photo

Marking position and characters are reference example.
The color varies depending on the shooting conditions.

Assembly factory	Beijing (Additional factory)	KL (Existing factory)	Gretek (Existing factory)	ASEKH (Existing factory)
Overall photo				
Enlarged photo				

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 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