

Product Change Notice (PCN)

Subject: Assembly factory addition and assembly materials addition & change for RL78 family
LQFP package products

Publication Date: 12/29/2021

Effective Date: 3/1/2022

Revision Description:

Initial release.

Description of Change:

	PKG type		Products Group								
			G13	G14	G1F	I1B	I1C	L12	L13	L1A	L1C
Case1	LQFP	07x07mm 32pin		√	√			√			
	LFQFP	07x07mm 48pin	√	√	√			√			
	LFQFP	10x10mm 64pin	√	√	√		√	√	√		
Case2	LQFP	10x10mm 44pin	√	√				√			
Case3	LFQFP	12x12mm 80pin	√	√		√	√		√	√	√
	LFQFP	14x14mm 100pin	√	√		√	√				

1. Case1

Kawashiri wafer and Saijo wafer:

Greatek Electronics Inc., (Greatek) addition

“Note: Greatek products are only full carton products and T&R products.”

“Refer to the difference specification for details.”

MCP-AB-21-0075_RL78_LQFP_Difference specification1_Greatek

2. Case2

Kawashiri wafer:

Greatek Electronics Inc., (Greatek) addition

Saijo wafer:

Greatek Electronics Inc., (Greatek) addition

Renesas Semiconductor KL Sdn. Bhd. (RSKL) addition

“Note: Greatek products are only full carton products and T&R products.”

“Refer to the difference specification for details.”

MCP-AB-21-0075_RL78_LQFP_Difference specification1_Greatek

MCP-AB-21-0084_RL78_LQFP_Difference specification2_RSKL_44pin

3. Case3

Kawashiri wafer and Saijo wafer:

Greatek Electronics Inc., (Greatek) addition

Renesas Semiconductor (Beijing) Co.,Ltd (RSB) lead frame consolidation

“Note: Greatek products are only full carton products and T&R products.”

“Refer to the difference specification for details.”

MCP-AB-21-0075_RL78_LQFP_Difference specification1_Greatek

MCP-AB-21-0079_RL78_LQFP_Difference specification3_RSB_LF

4. Description of change point case

	Before change			After change		
	WP&WT	ASSY	FT	WP&WT	ASSY	FT
Case1	Kawashiri Saijo	RSB ASEKH	RSB KYEC	Kawashiri Saijo	RSB ASEKH Greatek	RSB KYEC
Case2	Kawashiri	RSKL ASEKH	RSKL KYEC	Kawashiri	RSKL ASEKH Greatek	RSKL KYEC
	Saijo	ASEKH	KYEC	Saijo	RSKL** ASEKH Greatek*	RSKL** KYEC
Case3	Kawashiri Saijo	RSB ASEKH	RSB KYEC	Kawashiri Saijo	RSB*** ASEKH Greatek*	RSB KYEC

Note: Description for change point.

“Bold: Factory addition”

*: Some products add Greatek and some do not.

** : Some products add RSKL and some do not.

***: Change the lead frame. However, there are non-target products.

Affected Product List:

Refer to attached file “PN_list_RL78_LQFP_Greatek_RSKL_RSB”.

Reason for Change:

Stable supply for RL78 series LQFP products.

Impact on specifications and characteristics:

No change.

Impact on quality & reliability

No change.

Product Identification:

Possible to confirm the production history data from the packing label or trace code.

Qualification Status: We will prepare by 2/28/2022.

Sample Availability Date: 3/1/2022

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.

DIFFERENCE OF SPECIFICATION 1 (RL78 FAMILY LQFP PRODUCTS)

Additional assembly factory: Greatek

December 23, 2021

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

Ver.1.0

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MCP-AB-21-0075

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(Rev. 5.0-1 October 2020)

DIFFERENCE OUTLINE

1. Targets:

Assembly factory: Renesas Semiconductor (Beijing) Co.,Ltd (RSB)
Renesas Semiconductor KL Sdn. Bhd. (RSKL)
ADVANCED SEMICONDUCTOR ENGINEERING, INC. (ASEKH)

Package: 7x7mm 32pin, 10x10mm 44pin LQFP
7x7mm 48pin, 10x10mm 64pin, 12x12mm 80pin, 14x14mm 100pin LFQFP

2. Additional assembly factory

Greatek Electronics Inc. (Greatek)

3. Assembly material:

Lead frame, Die mount paste and Mold resin are used certificated materials.

4. Package outline

There is no change in footprint for additional factory products.

Please refer to the package outline drawing and dimension comparison for the external dimensions.

DIFFERENCE OUTLINE

5. Marking

Change the marking font for additional factory products.

Only 10x10mm 0.8mm pitch 44pin LQFP has different marking specification.

6. Storage conditions after opening the moisture proof packaging:

The storage conditions for Greatek products after opening the moisture-proof bag comply with JEDEC standards.

Existing products(RSB, RSKL) : 30°C/70%RH/ within 168hr

Existing products(ASEKH) : 30°C/60%RH/ within 168hr (Confirming to the JEDEC standard)

Additional products(Greatek) : 30°C/60%RH/ within 168hr (Confirming to the JEDEC standard)

(Note) Since the existing ASEKH assembly is already JEDEC compliant, there is no change.

■ Specification and characteristics of product:

No change

■ Quality and reliability:

No change

PKG LIST

PKG	Size [mm]	Pin count	Pitch [mm]	PKG thickness [mm]	Additional factory		Existing factory	
					Assembly	Sorting	Assembly	Sorting
LQFP	07x07	32	0.8	1.4	Greatek	KYEC	RSB	RSB
	07x07	48	0.5	1.4	Greatek	KYEC	RSB ASEKH	RSB KYEC
	10x10	44	0.8	1.4	Greatek	KYEC	RSKL ASEKH	RSKL KYEC
	10x10	64	0.5	1.4	Greatek	KYEC	RSB ASEKH	RSB KYEC
	12x12	80	0.5	1.4	Greatek	KYEC	RSB ASEKH	RSB KYEC
	14x14	100	0.5	1.4	Greatek	KYEC	RSB ASEKH	RSB KYEC

Renesas Semiconductor (Beijing) Co.,Ltd (RSB)

Renesas Semiconductor KL Sdn. Bhd. (RSKL)

ADVANCED SEMICONDUCTOR ENGINEERING, INC. (ASEKH)

King Yuan ELECTRONICS CO., LTD (KYEC)

Greatek Electronics Inc. (Greatek)

Difference of specification

Item		Additional factory	Existing factory
Assembly factory		Greatek	RSB
Sorting factory		KYEC	RSB
Package	Outline	There are differences(Refer to pages 9 to14, 19 to 27)	
Lead frame	Material	No difference	
	Inner pattern	There are differences(Refer to page 28)	
Die mount	Material	Ag epoxy paste D *	Ag epoxy paste A *
Bonding wire	Material	No difference; Cu (Pd coating)	
Resin	Material	Epoxy resin D * (halogen-free)	Epoxy resin A * (halogen-free)
Plating	Material	No difference	
Marking	Font	There are differences(Refer to page 29)	
	Digit number	No difference	
Packing	Tray/ Emboss tape	No difference	
Storage conditions	after opening	30°C/60%RH/ within168hr	30°C/70%RH/ within 168hr

* Factory certified materials.

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

Difference of specification

Item		Additional factory	Existing factory
Assembly factory		Greatek	RSKL
Sorting factory		KYEC	RSKL
Package	Outline	There are differences(Refer to pages 15 to 18)	
Lead frame	Material	No difference	
	Inner pattern	There are differences(Refer to page 28)	
Die mount	Material	Ag epoxy paste D *	Ag epoxy paste B *
Bonding wire	Material	No difference; Cu (Pd coating)	
Resin	Material	Epoxy resin D * (halogen-free)	Epoxy resin B * (halogen-free)
Plating	Material	No difference	
Marking	Font	There are differences(Refer to page 29)	
	Digit number	There are differences(Refer to page 30)	
Packing	Tray/ Emboss tape	No difference	
Storage conditions	after opening	30°C/60%RH/ within 168hr	30°C/70%RH/within 168hr

* Factory certified materials.

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

Difference of specification

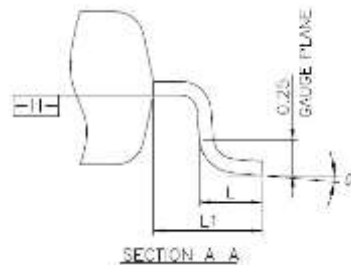
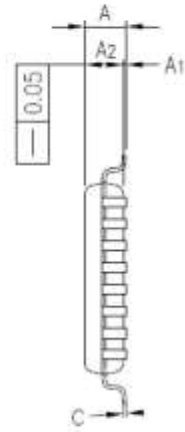
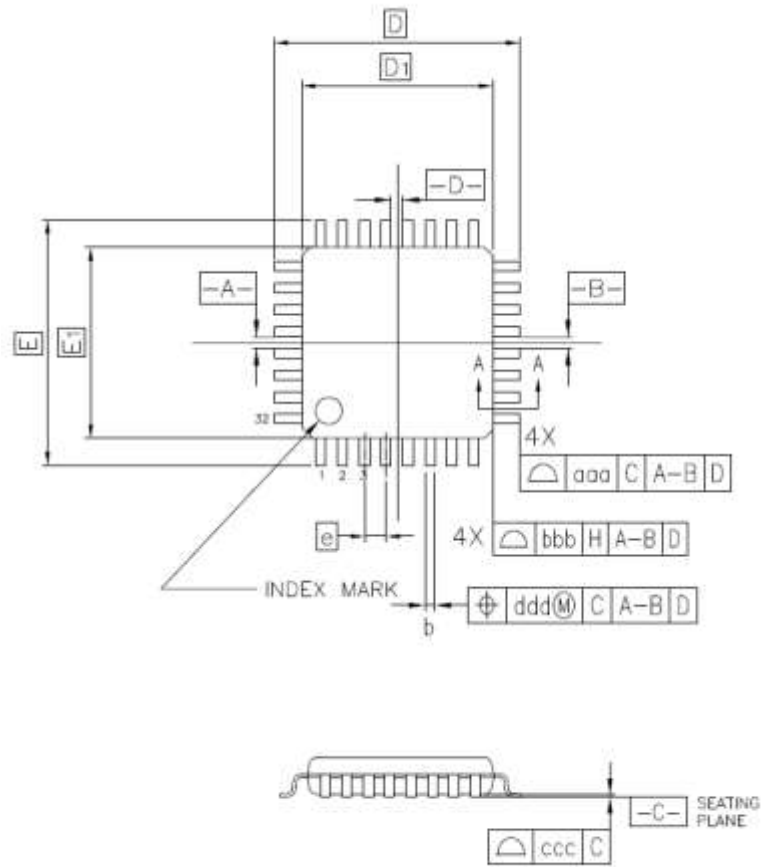
Item		Additional factory	Existing factory
Assembly factory		Greatek	ASEKH
Sorting factory		KYEC	RSB or KYEC
Package	Outline	There are differences(Refer to pages 12 to 27)	
Lead frame	Material	No change	
	Inner pattern	There are differences(Refer to page 28)	
Die mount	Material	Ag epoxy paste D *	Ag epoxy paste C *
Bonding wire	Material	No difference; Cu (Pd coating)	
Resin	Material	Epoxy resin D * (halogen-free)	Epoxy resin C * (halogen-free)
Plating	Material	No change	
Marking	Font	There are differences(Refer to page 29)	
	Digit number	No change	
Packing	Tray/ Emboss tape	No change	
Storage conditions	after opening	No change	

* Factory certified materials.

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

7mm x 7mm 0.8mm pitch 32pin LQFP Package outline (Greatek)

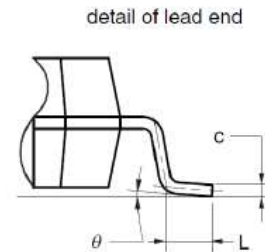
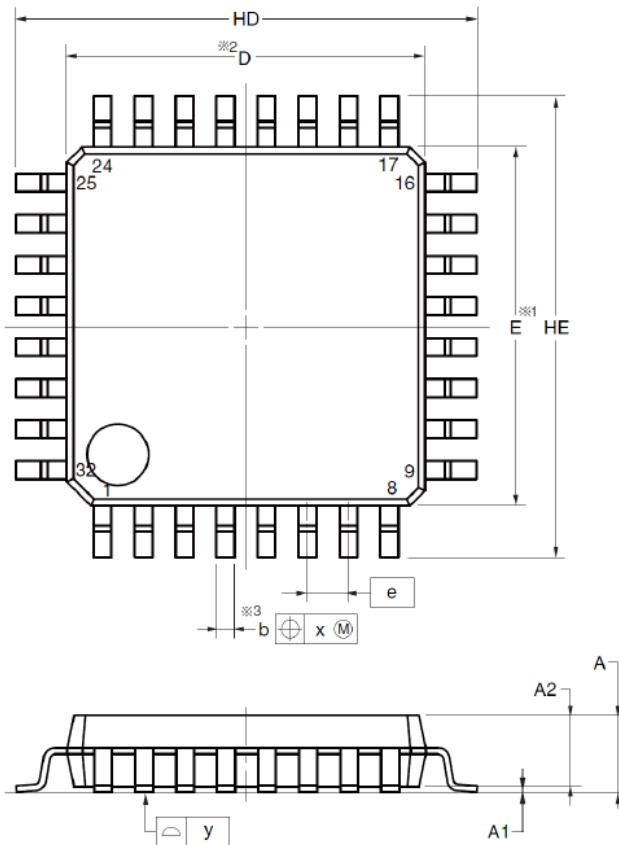
RENESAS Code : PLQP0032GE-A



Reference Symbol	Dimension in Millimeters		
	Min.	Nom.	Max.
A	—	—	1.60
A ₁	0.05	—	0.15
A ₂	1.35	1.40	1.45
D	—	9.00	—
D ₁	—	7.00	—
E	—	9.00	—
E ₁	—	7.00	—
N	—	32	—
e	—	0.80	—
b	0.30	0.37	0.45
c	0.09	—	0.20
θ	0°	3.5°	7°
L	0.45	0.60	0.75
L ₁	—	1.00	—
aaa	—	—	0.20
bbb	—	—	0.20
ccc	—	—	0.10
ddd	—	—	0.20

7mm×7mm 0.8mm pitch 32pin LQFP Package outline (RSB)

RENESAS Code : PLQP0032GB-A



(UNIT:mm)

ITEM	DIMENSIONS
D	7.00±0.10
E	7.00±0.10
HD	9.00±0.20
HE	9.00±0.20
A	1.70 MAX.
A1	0.10±0.10
A2	1.40
b	0.37±0.05
c	0.145±0.055
L	0.50±0.20
θ	0° to 8°
e	0.80
x	0.20
y	0.10

Dimension comparison: 7mm x 7mm 0.8mm pitch 32pin LQFP

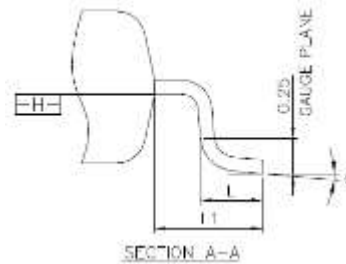
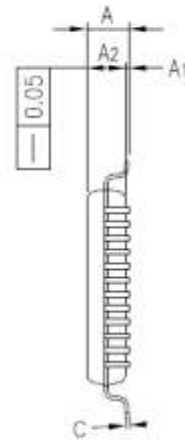
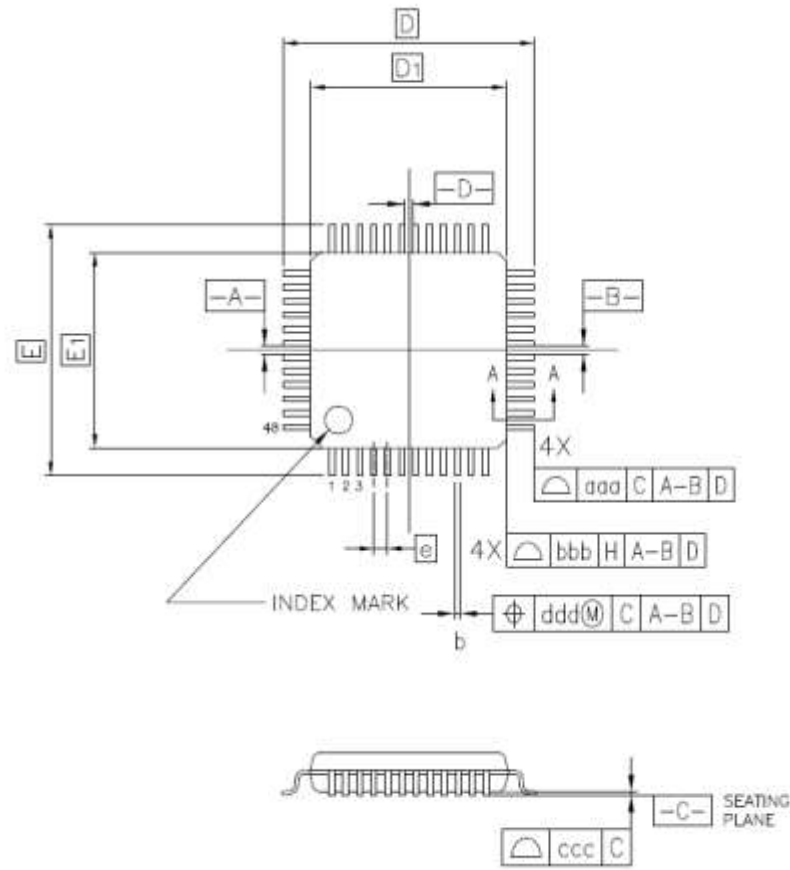
Greatek package symbols complied JEDEC standard.

Greatek Symbol	7x7mm 32pin LQFP PLQP0032GE-A			RSB Symbol	7x7mm 32pin LQFP PLQP0032GB-A		
	Dimension in Millimeters				Dimension in Millimeters		
	Min	Nom	Max		Min	Nom	Max
A	-	-	1.60	A	-	-	1.70
A1	0.05	-	0.15	A1	0.00	0.10	0.20
A2	1.35	1.40	1.45	A2	-	1.40	-
D	-	9.00	-	HD	8.80	9.00	9.20
D1	-	7.00	-	D	6.90	7.00	7.10
E	-	9.00	-	HE	8.80	9.00	9.20
E1	-	7.00	-	E	6.90	7.00	7.10
N	-	32	-	-	-	-	-
e	-	0.80	-	e	-	0.80	-
b	0.30	0.37	0.45	b	0.32	0.37	0.42
c	0.09	-	0.20	c	0.09	0.145	0.20
θ	0°	3.5°	7°	θ	0°	-	8°
L	0.45	0.60	0.75	L	0.30	0.50	0.70
L1	-	1.00	-	-	-	-	-
aaa	-	-	0.20	-	-	-	-
bbb	-	-	0.20	-	-	-	-
ccc	-	-	0.10	y	-	0.10	-
ddd	-	-	0.20	x	-	0.20	-

※There is a difference in the measurement point.

7mm x 7mm 0.5mm pitch 48pin LFQFP Package outline (Greatek)

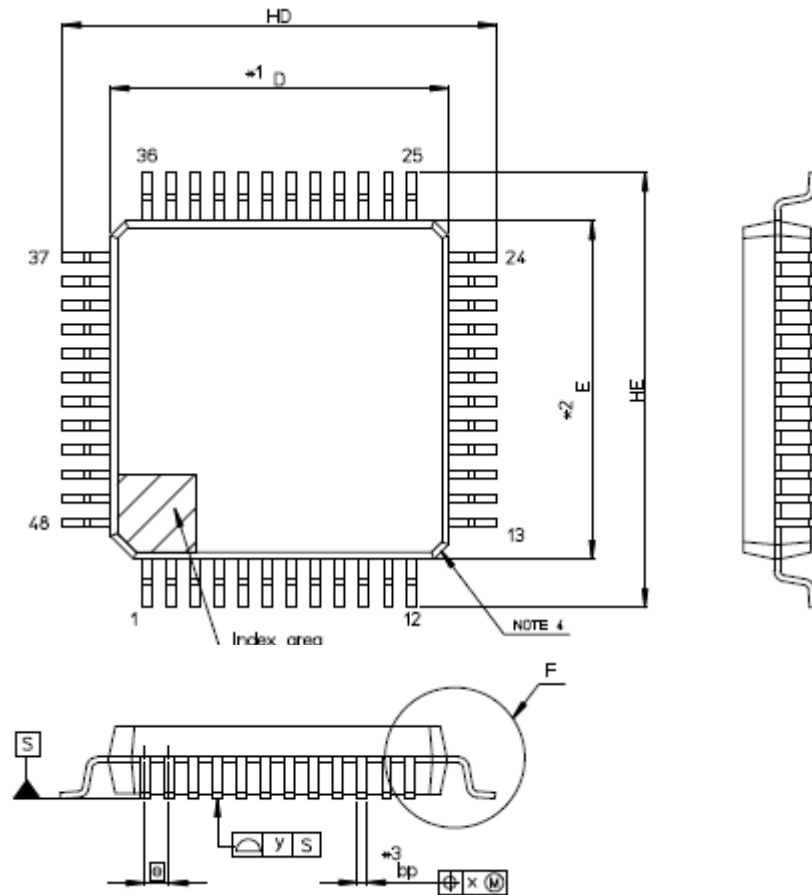
RENESAS Code : PLQP0048KL-A



Reference Symbol	Dimension in Millimeters		
	Min.	Nom.	Max.
A	—	—	1.60
A ₁	0.05	—	0.15
A ₂	1.35	1.40	1.45
D	—	9.00	—
D ₁	—	7.00	—
E	—	9.00	—
E ₁	—	7.00	—
N	—	48	—
e	—	0.50	—
b	0.17	0.22	0.27
c	0.09	—	0.20
θ	0°	3.5°	7°
L	0.45	0.60	0.75
L ₁	—	1.00	—
aaa	—	—	0.20
bbb	—	—	0.20
ccc	—	—	0.08
ddd	—	—	0.08

7mm x 7mm 0.5mm pitch 48pin LFQFP Package outline (RSB/ASEKH)

RENESAS Code : PLQP0048KB-B



Reference Symbol	Dimension in Millimeters		
	Min	Nom	Max
D	6.9	7.0	7.1
E	6.9	7.0	7.1
A2	—	1.4	—
HD	8.8	9.0	9.2
HE	8.8	9.0	9.2
A	—	—	1.7
A1	0.05	—	0.15
bp	0.17	0.20	0.27
c	0.09	—	0.20
e	0°	3.5°	8°
e	—	0.5	—
x	—	—	0.08
y	—	—	0.08
Lp	0.45	0.6	0.75
L1	—	1.0	—

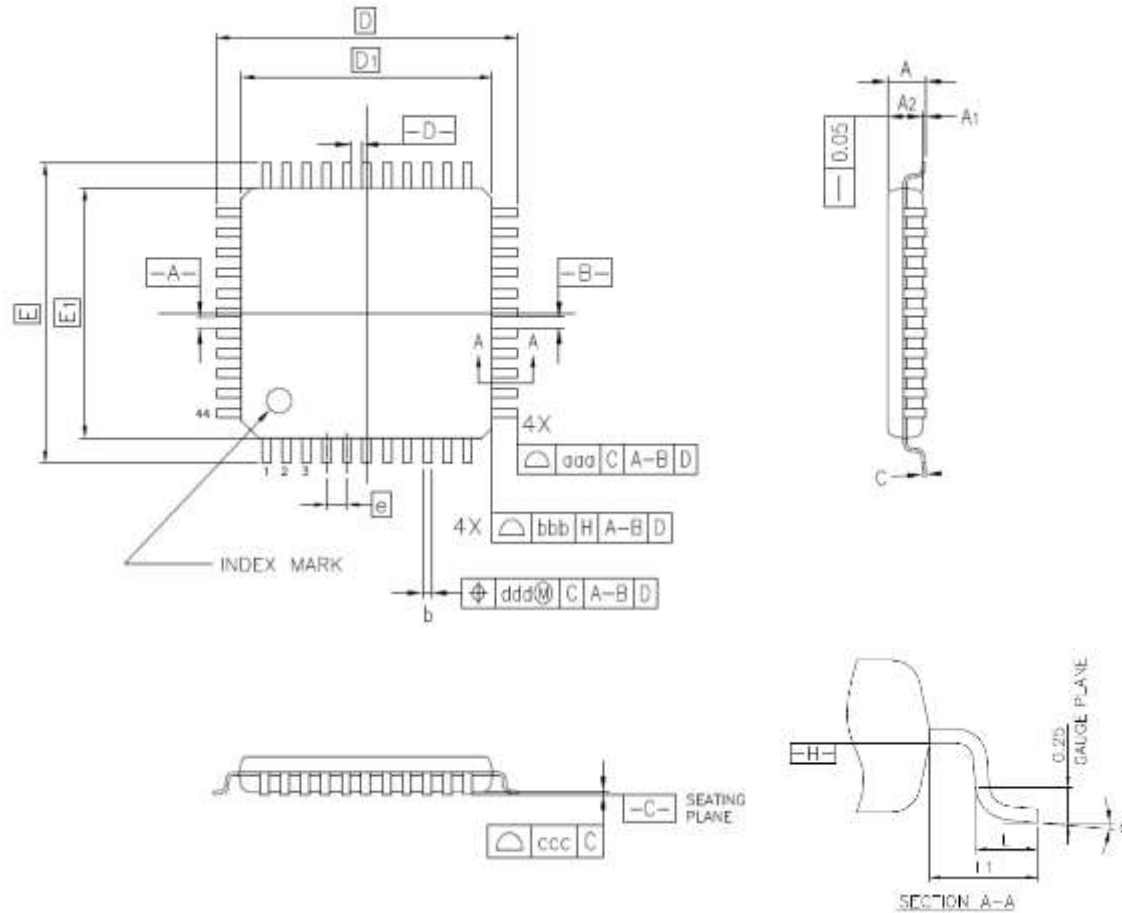
Dimension comparison: 7mm x 7mm 0.5mm pitch 48pin LQFP

Greatek package symbols complied JEDEC standard.

Greatek Symbol	7x7mm 48pin LQFP PLQP0048KL-A			RSB ASEKH Symbol	7x7mm 48pin LQFP PLQP0048KB-B		
	Dimension in Millimeters				Dimension in Millimeters		
	Min	Nom	Max		Min	Nom	Max
A	-	-	1.60	A	-	-	1.70
A1	0.05	-	0.15	A1	0.05	-	0.15
A2	1.35	1.40	1.45	A2	-	1.40	-
D	-	9.00	-	HD	8.80	9.00	9.20
D1	-	7.00	-	D	6.90	7.00	7.10
E	-	9.00	-	HE	8.80	9.00	9.20
E1	-	7.00	-	E	6.90	7.00	7.10
N	-	48	-	-	-	-	-
e	-	0.50	-	e	-	0.50	-
b	0.17	0.22	0.27	bp	0.17	0.20	0.27
c	0.09	-	0.20	c	0.09	-	0.20
θ	0°	3.5°	7°	θ	0°	3.5°	8°
L	0.45	0.60	0.75	Lp	0.45	0.60	0.75
L1	-	1.00	-	L1	-	1.00	-
aaa	-	-	0.20	-	-	-	-
bbb	-	-	0.20	-	-	-	-
ccc	-	-	0.08	y	-	-	0.08
ddd	-	-	0.08	x	-	-	0.08

10mm×10mm 0.8mm pitch 44pin LQFP Package outline (Greatek)

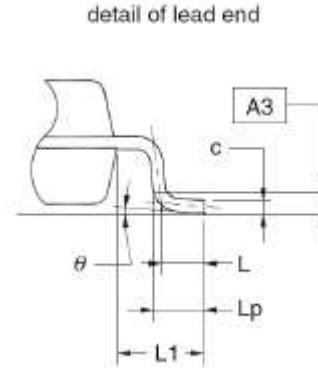
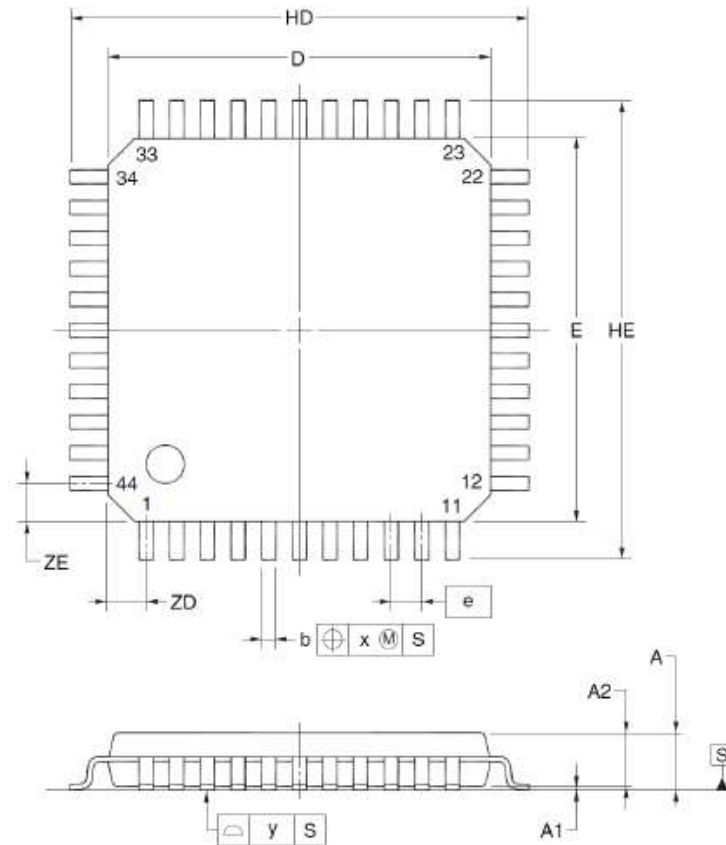
RENESAS Code : PLQP0044GE-A



Reference Symbol	Dimension in Millimeters		
	Min.	Nom.	Max.
A	—	—	1.60
A ₁	0.05	—	0.15
A ₂	1.35	1.40	1.45
D	—	12.00	—
D1	—	10.00	—
E	—	12.00	—
E ₁	—	10.00	—
N	—	44	—
e	—	0.80	—
b	0.30	0.37	0.45
c	0.09	—	0.20
e	0°	3.5°	7°
L	0.45	0.60	0.75
L ₁	—	1.00	—
aaa	—	—	0.20
bbb	—	—	0.20
ccc	—	—	0.10
ddd	—	—	0.20

10mm x 10mm 0.8mm pitch 44pin LQFP Package outline (RSKL)

RENESAS Code : PLQP0044GC-A

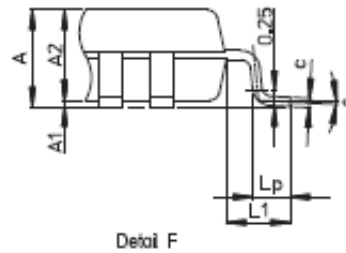
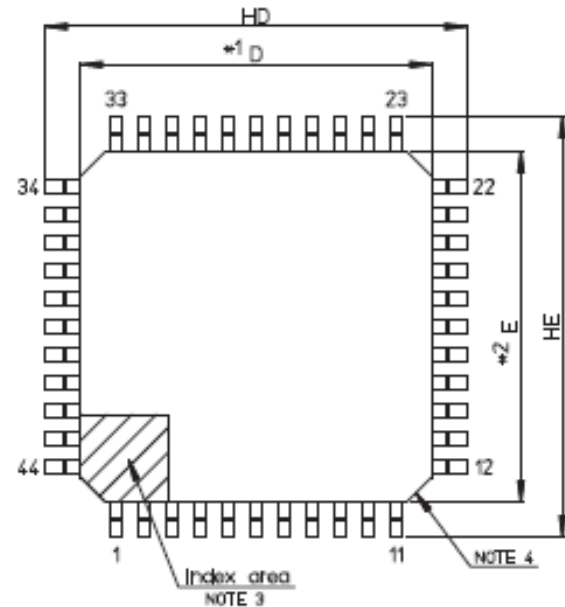


(UNIT:mm)

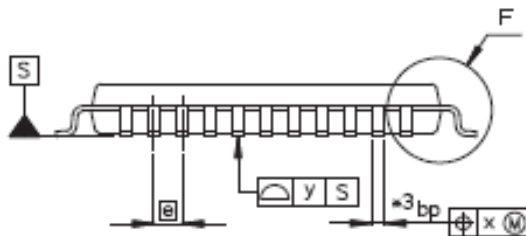
ITEM	DIMENSIONS
D	10.00±0.20
E	10.00±0.20
HD	12.00±0.20
HE	12.00±0.20
A	1.60 MAX.
A1	0.10±0.05
A2	1.40±0.05
A3	0.25
b	0.37 ^{+0.08} _{-0.07}
c	0.145 ^{+0.055} _{-0.045}
L	0.50
Lp	0.60±0.15
L1	1.00±0.20
θ	3 ⁺⁵ ₋₃
e	0.80
x	0.20
y	0.10
ZD	1.00
ZE	1.00

10mm x 10mm 0.8mm pitch 44pin LQFP 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
ϕ	0 [*]	3,5 [*]	8 [*]
e	—	0,80	—
x	—	—	0,20
y	—	—	0,10
Lp	0,45	0,6	0,75
L1	—	1,0	—



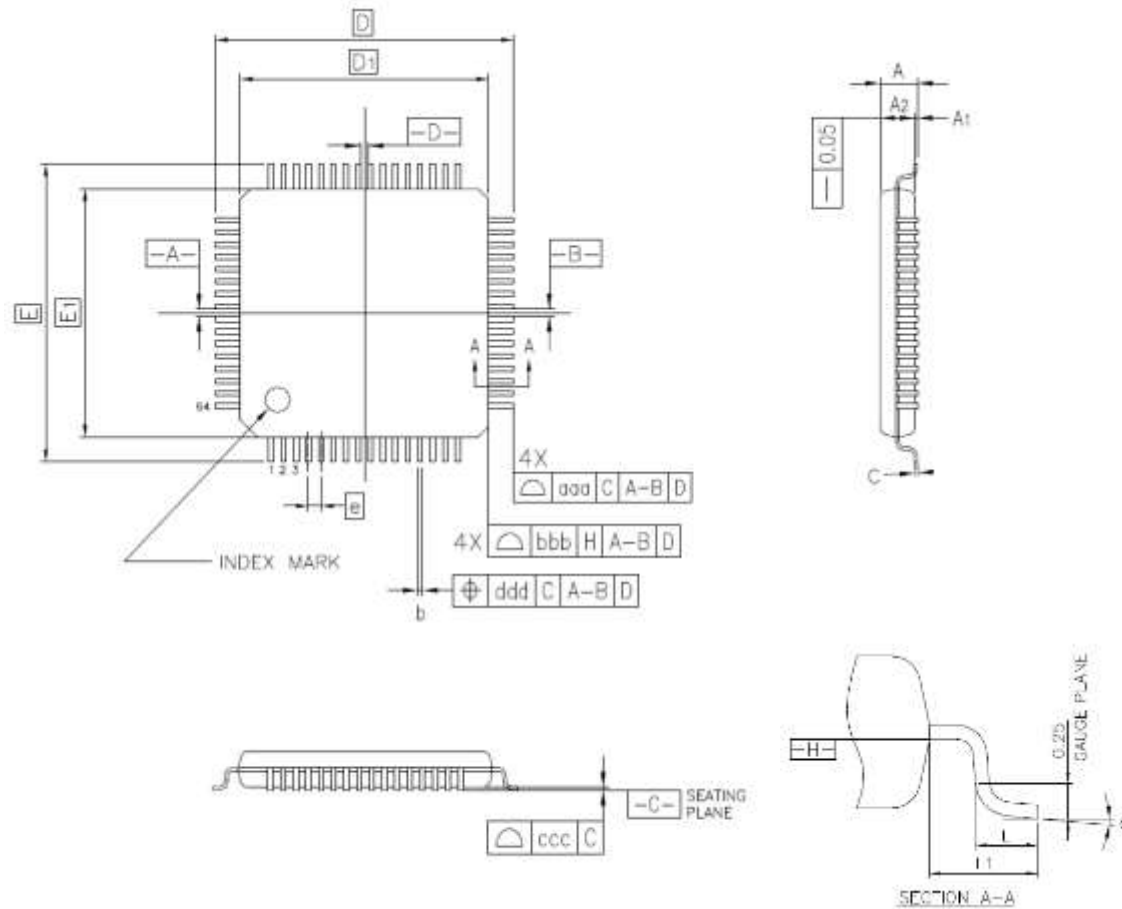
Dimension comparison: 10mm x 10mm 0.8mm pitch 44pin LQFP

Greatek package symbols complied JEDEC standard.

Greatek Symbol	10x10mm 44pin LQFP PLQP0044GE-A			RSKL Symbol	10x10mm 44pin LQFP PLQP0044GC-A			ASEKH Symbol	10x10mm 44pin LQFP PLQP0044GC-D		
	Dimension in Millimeters				Dimension in Millimeters				Dimension in Millimeters		
	Min	Nom	Max		Min	Nom	Max		Min	Nom	Max
A	-	-	1.60	A	-	-	1.60	A	-	-	1.60
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	-	1.40	-
D	-	12.00	-	HD	11.80	12.00	12.20	HD	11.80	12.00	12.20
D1	-	10.00	-	D	9.80	10.00	10.20	D	9.80	10.00	10.20
E	-	12.00	-	HE	11.80	12.00	12.20	HE	11.80	12.00	12.20
E1	-	10.00	-	E	9.80	10.00	10.20	E	9.80	10.00	10.20
N	-	44	-	-	-	-	-	-	-	-	-
e	-	0.80	-	e	-	0.80	-	e	-	0.80	-
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	0.10	0.145	0.20	c	0.09	-	0.20
θ	0°	3.5°	7°	θ	0°	3°	8°	θ	0°	3.5°	8°
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	0.80	1.00	1.20	L1	-	1.00	-
aaa	-	-	0.20	-	-	-	-	-	-	-	-
bbb	-	-	0.20	-	-	-	-	-	-	-	-
ccc	-	-	0.10	y	-	0.10	-	y	-	0.10	-
ddd	-	-	0.20	x	-	0.20	-	x	-	0.20	-

10mm x 10mm 0.5mm pitch 64pin LFQFP Package outline (Greatek)

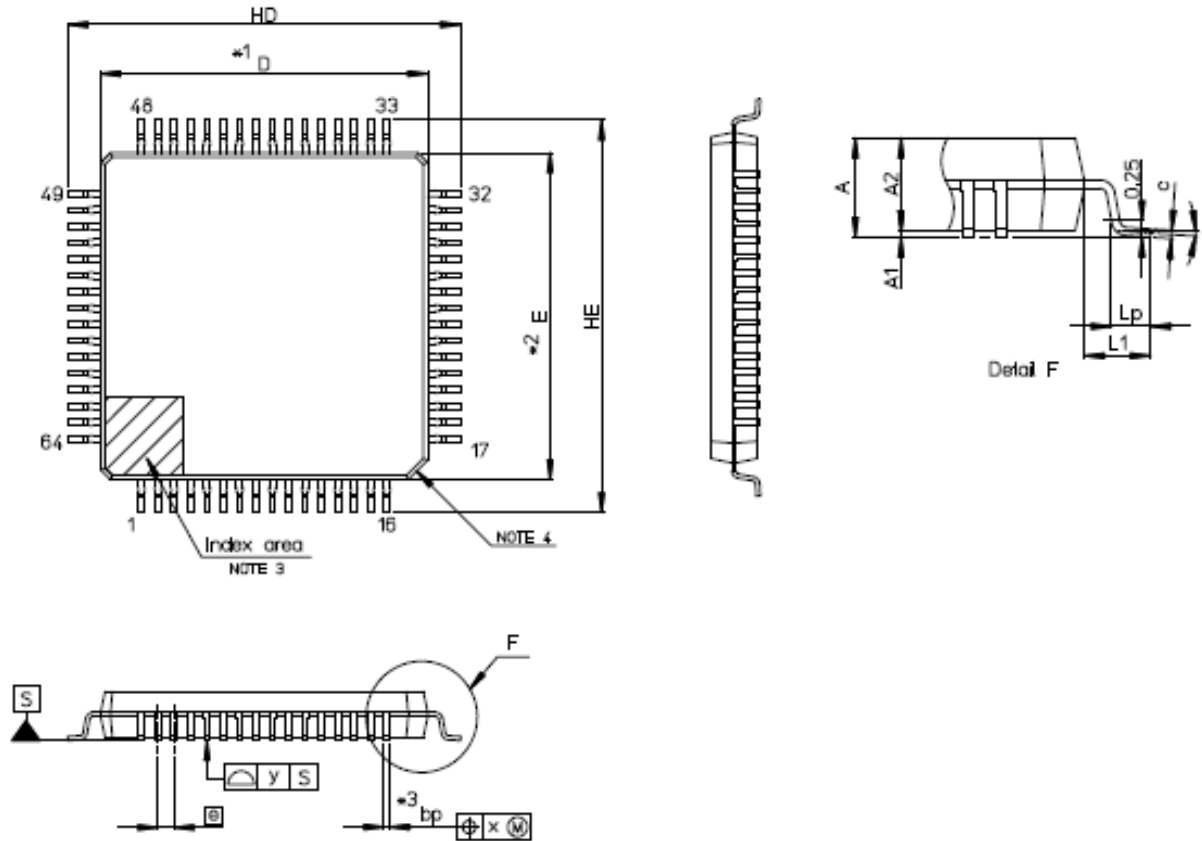
RENESAS Code : PLQP0064KL-A



Reference Symbol	Dimension in Millimeters		
	Min.	Nom.	Max.
A	—	—	1.60
A ₁	0.05	—	0.15
A ₂	1.35	1.40	1.45
D	—	12.00	—
D ₁	—	10.00	—
E	—	12.00	—
E ₁	—	10.00	—
N	—	64	—
e	—	0.50	—
b	0.17	0.22	0.27
c	0.09	—	0.20
e	0°	3.5°	7°
L	0.45	0.60	0.75
L ₁	—	1.00	—
aaa	—	—	0.20
bbb	—	—	0.20
ccc	—	—	0.08
ddd	—	—	0.08

10mm x 10mm 0.5mm pitch 64pin LFQFP Package outline (RSB/ASEKH)

RENESAS Code : PLQP0064KB-C



Reference Symbol	Dimension in Millimeters		
	Min	Nom	Max
D	9.9	10.0	10.1
E	9.9	10.0	10.1
A2	—	1.4	—
HD	11.8	12.0	12.2
HE	11.8	12.0	12.2
A	—	—	1.7
A1	0.05	—	0.15
bp	0.15	0.20	0.27
c	0.09	—	0.20
e	0 [°]	3.5 [°]	8 [°]
e	—	0.5	—
x	—	—	0.08
y	—	—	0.08
Lp	0.45	0.6	0.75
L1	—	1.0	—

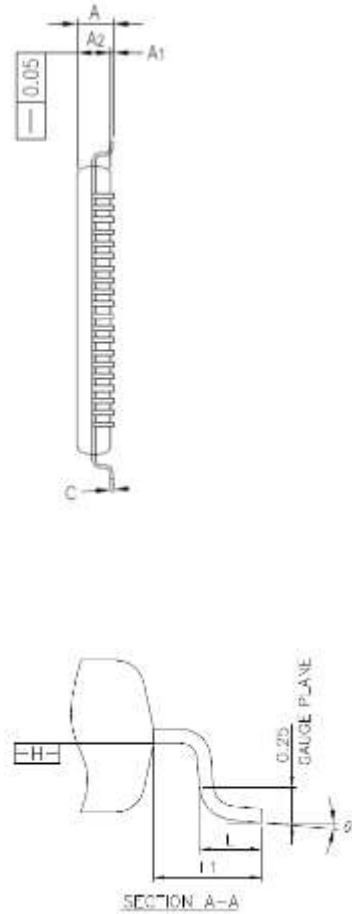
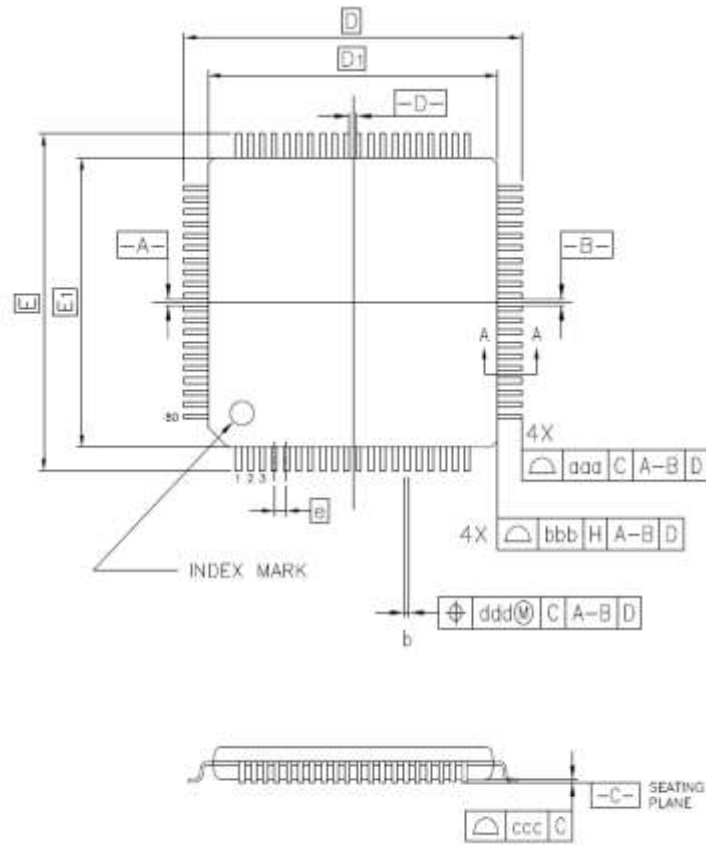
Dimension comparison: 10mm x 10mm 0.5mm pitch 64pin LQFP

Greatek package symbols complied JEDEC standard.

Greatek Symbol	10x10mm 64pin LQFP PLQP0064KL-A			RSB ASEKH Symbol	10x10mm 64pin LQFP PLQP0064KB-C		
	Dimension in Millimeters				Dimension in Millimeters		
	Min	Nom	Max		Min	Nom	Max
A	-	-	1.60	A	-	-	1.70
A1	0.05	-	0.15	A1	0.05	-	0.15
A2	1.35	1.40	1.45	A2	-	1.40	-
D	-	12.00	-	HD	11.80	12.00	12.20
D1	-	10.00	-	D	9.90	10.00	10.10
E	-	12.00	-	HE	11.80	12.00	12.20
E1	-	10.00	-	E	9.90	10.00	10.10
N	-	64	-	-	-	-	-
e	-	0.50	-	e	-	0.50	-
b	0.17	0.22	0.27	bp	0.15	0.20	0.27
c	0.09	-	0.20	c	0.09	-	0.20
θ	0°	3.5°	7°	θ	0°	3.5°	8°
L	0.45	0.60	0.75	Lp	0.45	0.60	0.75
L1	-	1.00	-	L1	-	1.000	-
aaa	-	-	0.20	-	-	-	-
bbb	-	-	0.20	-	-	-	-
ccc	-	-	0.08	y	-	-	0.08
ddd	-	-	0.08	x	-	-	0.08

12mm x 12mm 0.5mm pitch 80pin LFQFP Package outline (Greatek)

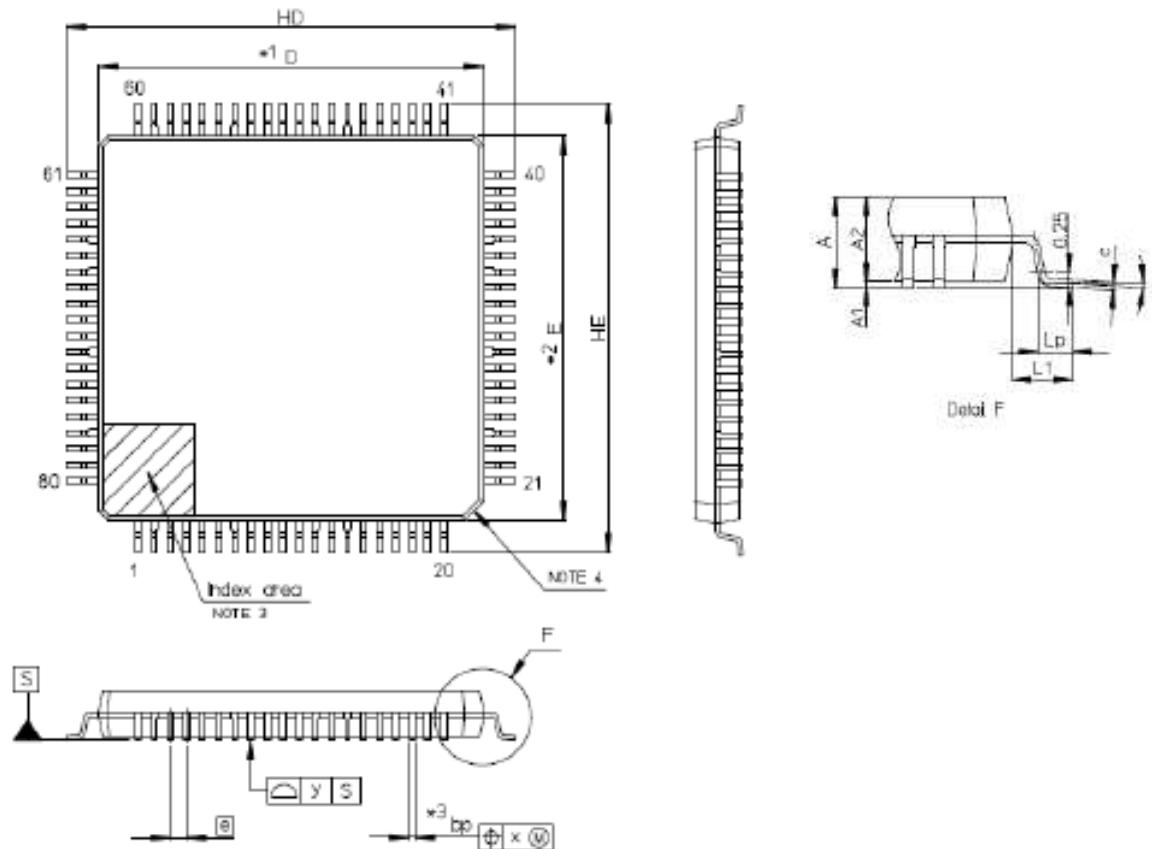
RENESAS Code : PLQP0080KJ-A



Reference Symbol	Dimension in Millimeters		
	Min.	Nom.	Max.
A	—	—	1.60
A ₁	0.05	—	0.15
A ₂	1.35	1.40	1.45
D	—	14.00	—
D ₁	—	12.00	—
E	—	14.00	—
E ₁	—	12.00	—
N	—	80	—
e	—	0.50	—
b	0.17	0.22	0.27
c	0.09	—	0.20
θ	0°	3.5°	7°
L	0.45	0.60	0.75
L ₁	—	1.00	—
aaa	—	—	0.20
bbb	—	—	0.20
ccc	—	—	0.08
ddd	—	—	0.08

12mm x 12mm 0.5mm pitch 80pin LFQFP Package outline (RSB/ASEKH)

RENESAS Code : PLQP0080KB-B



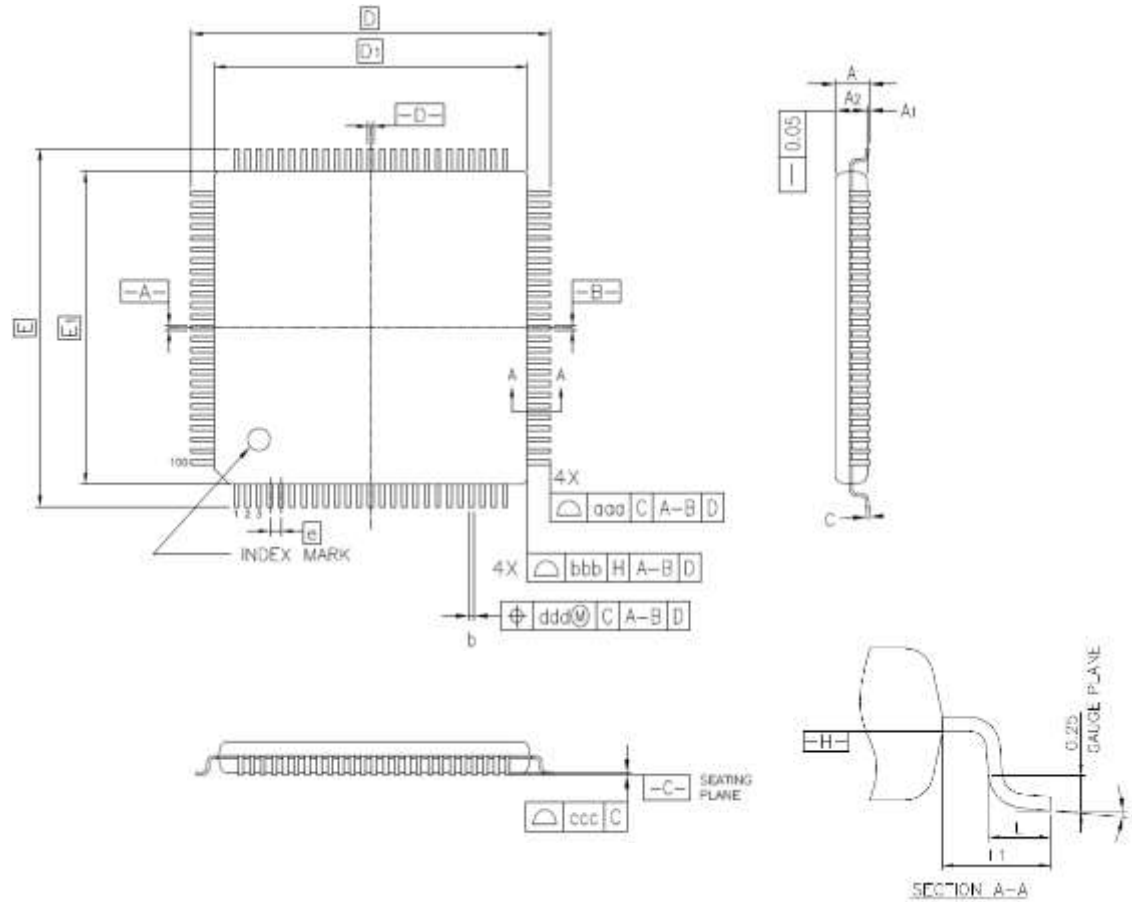
Dimension comparison: 12mm x 12mm 0.5mm pitch 80pin LQFP

Greatek package symbols complied JEDEC standard.

Greatek Symbol	12x12mm 80pin LQFP PLQP0080KJ-A			RSB ASEKH Symbol	12x12mm 80pin LQFP PLQP0080KB-B		
	Dimension in Millimeters				Dimension in Millimeters		
	Min	Nom	Max		Min	Nom	Max
A	-	-	1.60	A	-	-	1.70
A1	0.05	-	0.15	A1	0.05	-	0.15
A2	1.35	1.40	1.45	A2	-	1.40	-
D	-	14.00	-	HD	13.80	14.00	14.20
D1	-	12.00	-	D	11.90	12.00	12.10
E	-	14.00	-	HE	13.80	14.00	14.20
E1	-	12.00	-	E	11.90	12.00	12.10
N	-	80	-	-	-	-	-
e	-	0.50	-	e	-	0.50	-
b	0.17	0.22	0.27	bp	0.15	0.20	0.27
c	0.09	-	0.20	c	0.09	-	0.20
θ	0°	3.5°	7°	θ	0°	3.5°	8°
L	0.45	0.60	0.75	Lp	0.45	0.60	0.75
L1	-	1.00	-	L1	-	1.000	-
aaa	-	-	0.20	-	-	-	-
bbb	-	-	0.20	-	-	-	-
ccc	-	-	0.08	y	-	-	0.08
ddd	-	-	0.08	x	-	-	0.08

14mm x 14mm 0.5mm pitch 100pin LFQFP Package outline (Greatek)

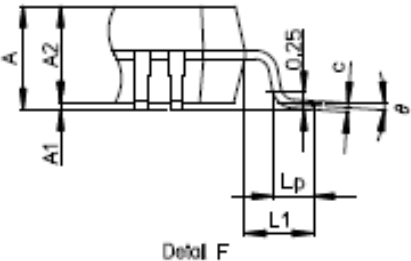
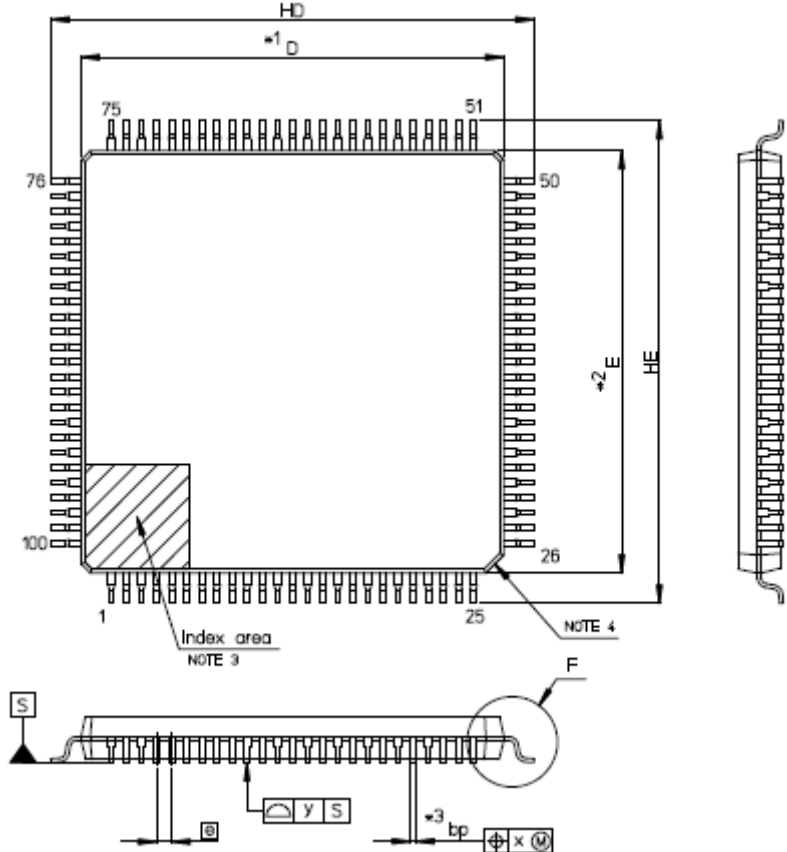
RENESAS Code : PLQP0100KP-A



Reference Symbol	Dimension in Millimeters		
	Min.	Nom.	Max.
A	—	—	1.60
A ₁	0.05	—	0.15
A ₂	1.35	1.40	1.45
D	—	16.00	—
D ₁	—	14.00	—
E	—	16.00	—
E ₁	—	14.00	—
N	—	100	—
e	—	0.50	—
b	0.17	0.22	0.27
c	0.09	—	0.20
e	0°	3.5°	7°
L	0.45	0.60	0.75
L ₁	—	1.00	—
aaa	—	—	0.20
bbb	—	—	0.20
ccc	—	—	0.08
ddd	—	—	0.08

14mm x 14mm 0.5mm pitch 100pin LFQFP Package outline (RSB/ASEKH)

RENESAS Code : PLQP0100KB-B



Reference Symbol	Dimension in Millimeters		
	Min	Nom	Max
D	13.9	14.0	14.1
E	13.9	14.0	14.1
A2	—	1.4	—
HD	15.8	16.0	16.2
HE	15.8	16.0	16.2
A	—	—	1.7
A1	0.05	—	0.15
bp	0.15	0.20	0.27
c	0.09	—	0.20
e	0*	3.5*	8*
e	—	0.5	—
x	—	—	0.08
y	—	—	0.08
Lp	0.45	0.6	0.75
L1	—	1.0	—

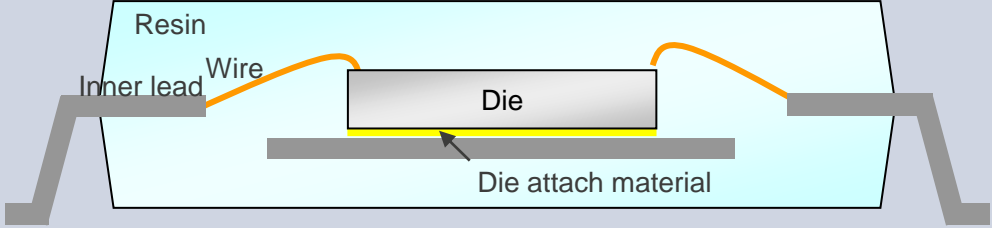

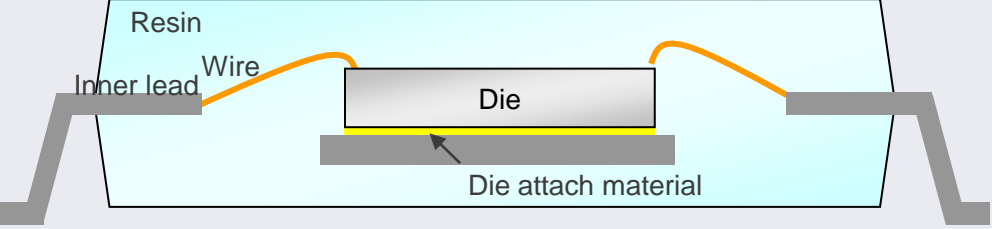

Dimension comparison: 14mm x 14mm 0.5mm pitch 100pin LQFP

Greatek package symbols complied JEDEC standard.

Greatek Symbol	14x14mm 100pin LQFP PLQP0100KP-A			RSB ASEKH Symbol	14x14mm 100pin LQFP PLQP0100KB-B		
	Dimension in Millimeters				Dimension in Millimeters		
	Min	Nom	Max		Min	Nom	Max
A	-	-	1.60	A	-	-	1.70
A1	0.05	-	0.15	A1	0.05	-	0.15
A2	1.35	1.40	1.45	A2	-	1.40	-
D	-	16.00	-	HD	15.80	16.00	16.20
D1	-	14.00	-	D	13.90	14.00	14.10
E	-	16.00	-	HE	15.80	16.00	16.20
E1	-	14.00	-	E	13.90	14.00	14.10
N	-	100	-	-	-	-	-
e	-	0.50	-	e	-	0.50	-
b	0.17	0.22	0.27	bp	0.15	0.20	0.27
c	0.09	-	0.20	c	0.09	-	0.20
θ	0°	3.5°	7°	θ	0°	3.5°	8°
L	0.45	0.60	0.75	Lp	0.45	0.60	0.75
L1	-	1.00	-	L1	-	1.000	-
aaa	-	-	0.20	-	-	-	-
bbb	-	-	0.20	-	-	-	-
ccc	-	-	0.08	y	-	-	0.08
ddd	-	-	0.08	x	-	-	0.08

Package structure image


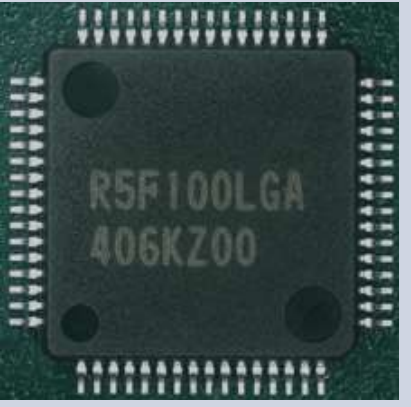






* Package Section and die pad shape is a reference example.

Assembly Line	PKG cross section	Die pad shape
Additional factory	 <p>Resin Wire Inner lead Die Die attach material</p>	 <p>Greatek</p>
Existing factory	 <p>Resin Wire Inner lead Die Die attach material</p>	 <p>RSB RSB RSKL ASEKH</p>

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

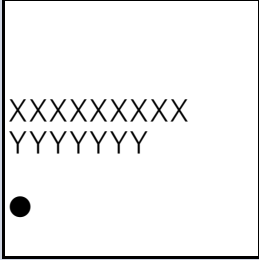
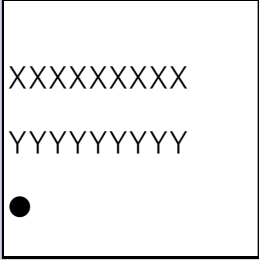

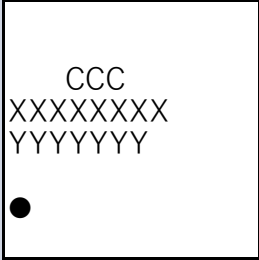
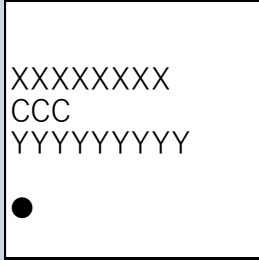
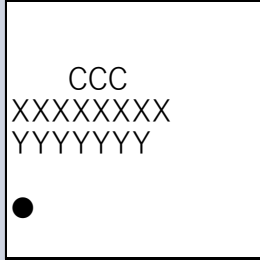
Marking visibility

※Character is reference example

Assembly Line	Greatek (Additional factory)	RSB (Existing factory)	RSKL (Existing factory)	ASEKH (Existing factory)
Overall photo				
Enlarged photo				

10x10mm 0.8mm pitch 44pin LQFP marking specifications

※For packages other than 10x10mm 0.8mm pitch 44pin LQFP, there is no change other than the marking visibility on the previous page.

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

* Marking specification of ASEKH products is as same as Geatek one.

4M changing points (Additional assembly factory)

Item	Check Result	Judgement
Machine	There are differences. 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 existing products.	No risk
Operator	Adopt 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

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