

Product Change Notice (PCN)

Subject: Change Substrate Supplier to ASEE for PBGA-119 and PBGA-416

Publication Date: 2/21/2022

Effective Date: 5/21/2022

Revision Description:

Initial Release

Description of Change:

Renesas is changing the substrate supplier to ASEE, Taiwan as a result of the current supplier UMTC, Taiwan discontinued the manufacturing of substrate for product PBGA-119 and PBGA-416. ASEE has decades of experience and expertise in Flip Chip BGA/CSP substrates and is ranked among the top 10 worldwide substrate suppliers in terms of revenue. Refer to appendix for the company profile.

There will be no changes to the substrate design, physical dimensions and electrical performance. ASEE will be exactly the same as UMTC substrate in terms of form, fit and function.

Refer to appendix for comparison between the current substrate suppliers versus the newly qualified substrate supplier.

Affected Product List: Refer Appendix B.

Reason for Change:

The current substrate supplier discontinued the manufacturing line on the select packages.

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

The change will have no impact on the product form, fit, function, quality, reliability and environmental compliance of the products.

Product Identification:

Assembly Lot# traceable to the substrate material supplier

Qualification Status: Completed. Refer Appendix A

Sample Availability Date: 2/21/2021

Material Declaration: Available on request

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 idt-pcn@lm.renesas.com

Appendix A – Comparison of Substrate Design and Materials

Descriptions	PBGA-416		PBGA-119	
	UMTC	ASEE	UMTC	ASEE
Finger Space (mm)	0.06 min.	0.06 min.	0.04 min.	0.04 min.
Finger Width (mm)	0.025 min.	0.025 min.	0.075 min.	0.075 min.
Trace Space (mm)	0.035 min.	0.035 min.	0.040 min.	0.040 min.
Trace Width (mm)	0.035 min.	0.035 min.	0.060 min.	0.060 min.
Ball Pad Opening (mm)	0.5+/-50	0.5+/-50	0.65+/-50	0.63+/-50
Ball Pad Metal Size (mm)	0.6+/-50	0.6+/-50	0.81+/-50	0.81+/-50
Core Thickness (mm)	0.15 (ref.)	0.15 (ref.)	0.15 (ref.)	0.15 (ref.)
Build-up	0.1 (ref.)	0.1 (ref.)	0.1 (ref.)	0.1 (ref.)
Hole Fill	PHP-900 IR-6	PHP-900 IR-6	PHP-900 IR-6	PHP-900 IR-6
Core Material	HL832NX-A	HL832NX-A	HL832NX-A	HL832NX-A
Build-up Material	GHPL830NX-A	GHPL830NX-A	GHPL830NX-A	GHPL830NX-A
Solder Mask	AUS308	AUS308	AUS308	AUS308
Surface Finish (Finger)	NiAu	NiAu	NiAu	NiAu
Surface Finish (Fiducials and External)	NiAu	NiAu	NiAu	NiAu

Appendix A – Comparison of Process Control

Substrate Process	QC Items	UMTC	ASEE
Lamination	Thickness	Yes	Yes
Mechanical Drill	Accuracy	Yes	Yes
Circuit Formation	Trace width	Yes	Yes
	Trace space	Yes	Yes
	Finger width	Yes	Yes
	Finger space	Yes	Yes
Cu Plating	Cu Thickness	Yes	Yes
Solder Mask	SM Thickness	Yes	Yes
	Total Thickness	Yes	Yes
	SRO Size	Yes	Yes
Surface Finish	Ni Thickness	Yes	Yes
	Au Thickness	Yes	Yes
	Finger Width	Yes	Yes
	Finger Space	Yes	Yes
Router	Strip Size	Yes	Yes

Appendix A - Qualification Results

Affected Packages: PBGA-119 and PBGA-416

Qual Vehicle: PBGA-416

Qual Plan & Results: Tests are in accordance with JEDEC47 recommended tests.

Test Descriptions	Test Method	Test Results (Rej/SS)		
		Lot 1	Lot 2	Lot 3
* Temperature Cycling (-55°C to 125°C, 700 cycles)	JESD22-A104	0/25	0/25	0/25
* Unbiased Temperature Humidity (uHAST) (130°C/85% RH, 96 Hrs)	JESD22-A110	0/25	0/25	-
* Temperature Humidity Bias (HAST) (130°C/85% RH, 96 Hrs)	JESD22-A110	-	-	0/25
Solder Ball Shear Test	JESD22-B117	0/5	0/5	0/5
Moisture Sensitivity Level, MSL	J-STD-20 / MSL 3, 260°C	0/25	0/25	0/25

**Tests were subjected to Preconditioning per JESD22-A113 prior to stress test*

Appendix B – Affected Product List

71V2556S100BG9	71V3556SA133BGGI8	71V3559S85BGI	71V3577S80BGG8
71V2556S133BG9	71V3556SA133BGI	71V3559S85BGI8	71V3577S80BGGI
71V2556SA100BG	71V3556SA133BGI8	71V35761SA166BG	71V3577S80BGGI8
71V2556SA100BG8	71V3556SA150BG	71V35761SA166BG8	71V3577S80BGI
71V2556SA100BGG	71V3556SA150BG8	71V35761SA166BGG	71V3577S80BGI8
71V2556SA100BGG8	71V3556SA150BGG	71V35761SA166BGG8	71V3577S85BG
71V2556SA100BGGI	71V3556SA150BGG8	71V35761SA166BGGI	71V3577S85BG/2799
71V2556SA100BGGI8	71V3556SA150BGGI	71V35761SA166BGGI8	71V3577S85BG8
71V2556SA100BGI	71V3556SA150BGGI8	71V35761SA166BGI	71V3577S85BG8/2799
71V2556SA100BGI8	71V3556SA166BG	71V35761SA166BGI8	71V3577S85BGG
71V2556SA133BG	71V3556SA166BG8	71V35761SA183BG	71V3577S85BGG8
71V2556SA133BG8	71V3556SA166BGG	71V35761SA183BG8	71V3577S85BGI
71V2556SA133BGG	71V3556SA166BGG8	71V35761SA183BGG	71V3577S85BGI8
71V2556SA133BGG8	71V3556SA166BGGI	71V35761SA183BGG8	71V65603S100BG
71V2556SA133BGI	71V3556SA166BGGI8	71V35761SA183BGGI	71V65603S100BG8
71V2556SA133BGI8	71V3556SA166BGI	71V35761SA183BGGI8	71V65603S100BGI
71V2556SA166BG	71V3556SA166BGI8	71V35761SA183BGI	71V65603S100BGI8
71V2556SA166BG8	71V3557S75BG	71V35761SA183BGI8	71V65603S133BG
71V25761S200BG	71V3557S75BG8	71V35761SA200BG	71V65603S133BG8
71V25761S200BG8	71V3557S80BG	71V35761SA200BG8	71V65603S133BGG
71V3556SA100BG	71V3557S80BG8	71V35761SA200BGG	71V65603S133BGG8
71V3556SA100BG8	71V3557S80BGI	71V35761SA200BGG8	71V65603S133BGGI
71V3556SA100BGG	71V3557S80BGI8	71V3577S75BG	71V65603S133BGGI8
71V3556SA100BGG8	71V3557S85BG	71V3577S75BG8	71V65603S133BGI
71V3556SA100BGGI	71V3557S85BG8	71V3577S75BGG	71V65603S133BGI8
71V3556SA100BGGI8	71V3557S85BGI	71V3577S75BGG8	71V65603S150BG
71V3556SA100BGI	71V3557S85BGI8	71V3577S75BGGI	71V65603S150BG8
71V3556SA100BGI8	71V3559S75BG	71V3577S75BGGI8	71V65603S150BGG
71V3556SA133BG	71V3559S75BG8	71V3577S75BGI	71V65603S150BGG8
71V3556SA133BG8	71V3559S80BG	71V3577S75BGI8	71V65603S150BGGI
71V3556SA133BGG	71V3559S80BG8	71V3577S80BG	71V65603S150BGGI8
71V3556SA133BGG8	71V3559S85BG	71V3577S80BG8	71V65703S75BG
71V3556SA133BGGI	71V3559S85BG8	71V3577S80BGG	71V65703S75BG8

71V65703S75BGG	71V65803S133BGG	71V67603S133BGGI8	71V67703S85BG8
71V65703S75BGG8	71V65803S133BGG8	71V67603S133BGI	71V67703S85BGG
71V65703S80BG	71V65803S133BGGI	71V67603S133BGI8	71V67703S85BGG8
71V65703S80BG8	71V65803S133BGGI8	71V67603S150BG	71V67703S85BGGI
71V65703S80BGG	71V65803S133BGI	71V67603S150BG8	71V67703S85BGGI8
71V65703S80BGG8	71V65803S133BGI8	71V67603S150BGG	71V67803S133BG
71V65703S85BG	71V65803S150BG	71V67603S150BGG8	71V67803S133BG8
71V65703S85BG8	71V65803S150BG8	71V67603S150BGGI	71V67803S133BGG
71V65703S85BGG	71V65803S150BGI	71V67603S150BGGI8	71V67803S133BGG8
71V65703S85BGG8	71V65803S150BGI8	71V67603S150BGI	71V67803S150BG
71V65703S85BGGI	71V65903S85BGG	71V67603S150BGI8	71V67803S150BG8
71V65703S85BGGI8	71V65903S85BGG8	71V67703S75BG	71V67803S166BG
71V65703S85BGI	71V65903S85BGGI	71V67703S75BG8	71V67803S166BG8
71V65703S85BGI8	71V67602S133BGG	71V67703S75BGG	82P2816BBBG
71V65803S100BG	71V67602S133BGG8	71V67703S75BGG8	82P2816BBBG8
71V65803S100BG8	71V67602S150BGG	71V67703S75BGGI	82P2910BBBG
71V65803S100BGG	71V67602S150BGG8	71V67703S75BGGI8	82P2910BBBG8
71V65803S100BGG8	71V67602S166BGG	71V67703S80BG	82P2917ABBG
71V65803S100BGGI	71V67602S166BGG8	71V67703S80BG8	82P2917ABBG8
71V65803S100BGGI8	71V67603S133BG	71V67703S80BGG	82P2917BBBG
71V65803S100BGI	71V67603S133BG8	71V67703S80BGG8	82P2917BBBG8
71V65803S100BGI8	71V67603S133BGG	71V67703S80BGGI	
71V65803S133BG	71V67603S133BGG8	71V67703S80BGGI8	
71V65803S133BG8	71V67603S133BGGI	71V67703S85BG	