Product Change Notification / GBNG-09EEJB041

Date:

16-Aug-2021

Product Category:

Ethernet PHYs

PCN Type:

Manufacturing Change

Notification Subject:

CCB 3473.001 Final Notice: Qualification of ASE as a new assembly site for selected Micrel KSZ8061 device family available in 32L VQFN (5x5x0.9mm) package using palladium coated copper with gold flash (CuPdAu) bond wire.

Affected CPNs:

GBNG-09EEJB041_Affected_CPN_08162021.pdf
GBNG-09EEJB041_Affected_CPN_08162021.csv

Notification Text:

PCN Status:
Final notification

PCN Type:
Manufacturing Change

Microchip Parts Affected:
Please open one of the files found in the Affected CPNs section.

NOTE: For your convenience Microchip includes identical files in two formats (.pdf and .xls).

Description of Change:

Qualification of ASE as a new assembly site for selected Micrel KSZ8061 device family available in 32L VQFN (5x5x0.9mm) package using palladium coated copper with gold flash (CuPdAu) bond wire.

Pre and Post Change Summary:

		Pre Change	Post Change
Assembly Site		Taiwan IC Packing Corp (TICP)	ASE Inc. Taiwan (ASE)
Wire material		Cu	CuPdAu
Die attach material		EN4900	EN4900
Molding compound material		G631	G631
Lead frame	**Material**	C194	C194
	Paddle size	150x150 mils	138x138 mils
	Design	Please see attached Pre and Post Change comparison	

Impacts to Data Sheet:

None

Change Impact:

None

Reason for Change:

To improve on-time delivery performance by qualifying ASE as a new assembly site.

Change Implementation Status:

In Progress

Estimated First Ship Date:

September 19, 2021 (date code: 2139)

NOTE: Please be advised that after the estimated first ship date customers may receive pre and post change parts.

Time Table Summary:

	August 2021					September 2021			
Workweek	32	33	34	35	36	37	38	39	40
Qual Report Availability			X						
Final PCN Issue Date			X						
Estimated Implementation Date								X	

Method to Identify Change:

Traceability code

Qualification Report:

Please open the attachments included with this PCN labeled as PCN_#_Qual_Report.

Revision History:

August 16, 2021: Issued final notification.

The change described in this PCN does not alter Microchip's current regulatory compliance regarding the material content of the applicable products.

Attachments:

PCN_GBNG-09EEJB041_Pre and Post Change_Summary.pdf
PCN_GBNG-09EEJB041_Qual_Report.pdf

Please contact your local Microchip sales office with questions or concerns regarding this notification.

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GBNG-09EEJB041 - CCB 3473.001 Final Notice: Qualification of ASE as a new assembly site for selected Micrel KSZ8061 device family available in 32L VQFN (5x5x0.9mm) package using palladium coated copper with gold flash (CuPdAu) bond wire.

Affected Catalog Part Numbers(CPN)

KSZ8061MNXI
KSZ8061RNBW
KSZ8061RNDW
KSZ8061RNBW-TR
KSZ8061RNDW-TR
KSZ8061MNXI-TR

CCB 3473.001
Pre and Post Change Summary
PCN #: GBNG-09EEJB041

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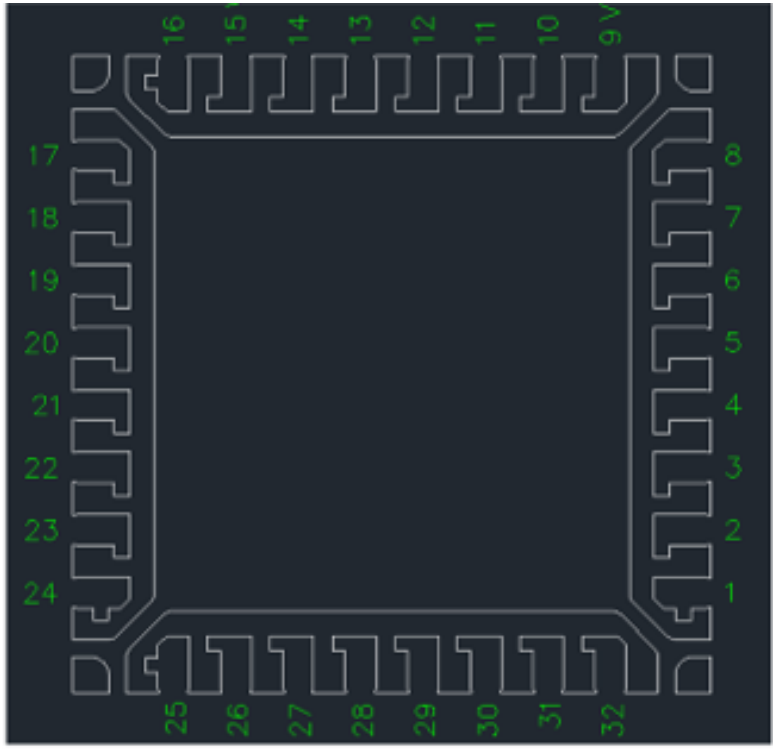
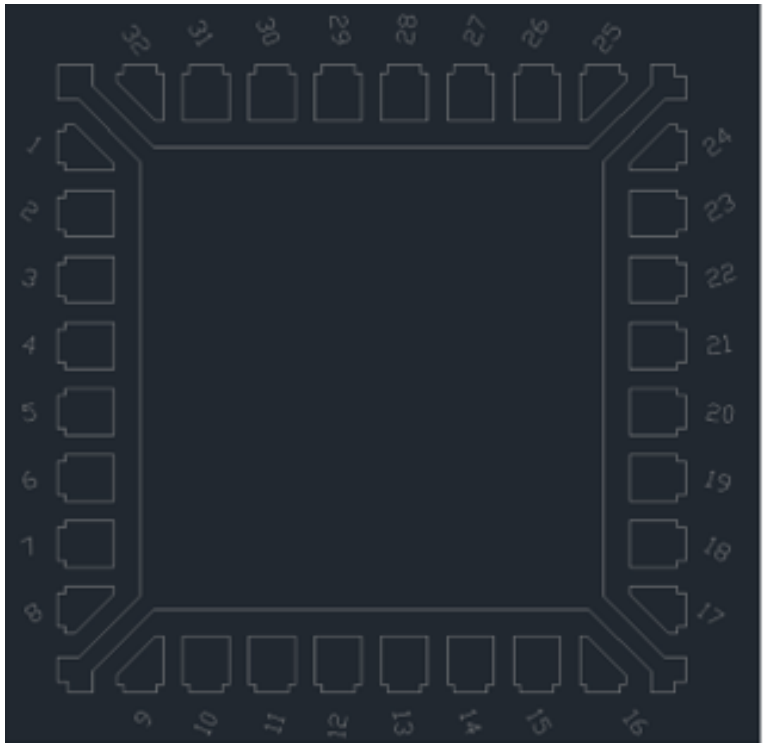
LEAD FRAME COMPARISON

TICP	ASE
	
Lead frame paddle size: 150x150 mils	Lead frame paddle size: 138x138 mils

QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: GBNG-09EEJB041

Date:
June 26, 2019

Qualification of ASE as a new assembly site for selected Micrel KSZ8061 device family available in 48L VQFN (7x7x0.9 mm) package using palladium coated copper with gold flash (CuPdAu) bond wire. The selected products available in 32L VQFN (5x5x0.9mm) package will qualify by similarity (QBS).

I. Summary:

The purpose of this report is to qualify STGA1 in VQFN 7x7x.09 mm 48 LD at ASE , Taiwan using CuPdAu Wire Bonding Process per CCB# 3473 and following guidelines established in Microchip specification QCI-39000, “Worldwide Quality Conformance Requirements”.

II. Conclusion:

Based on the results, STGA1 in VQFN 7x7x.09 mm 48 LD at ASE, Taiwan complies with the reliability guidelines implemented in the qualification plan. Therefore, this part/package can be released to production.

III. Device Description:

Device	KSZ8061MNGW
Document Control Number	ML0620190070
Document Revision	A
CCB No.	3473 and 3473.001

IV. Qualification Material:

Test Lot	Lot 1	Lot 2	Lot 3
DEVICE	KSZ8061MNGW (STGA1QPVAA01)	KSZ8061MNGW (STGA1QPVAA01)	KSZ8061MNGW (STGA1QPVAA01)
WAFER LOT	TC14919086016.200/ PK8H42.00	TC14919086016.200/ PK8H42.00	TC14919086016.200/ PK8H42.00
ASSEMBLY LOT	ASE192400110.000	ASE192400111.000	ASE192400112.000
PACKAGE	48L-VQFN 7x7x0.9mm	48L-VQFN 7x7x0.9mm	48L-VQFN 7x7x 0.9mm
QUAL TESTS	PRECOND, HTSL, HAST, UHAST, TC	PRECOND, HAST, UHAST, TC	PRECOND, HAST, UHAST, TC

V. Bill of Materials:

Misc.	Assembly site	ASE
	BD Number	AAH@A257190004-0
	MP Code (MPC)	STGA19PVAA01
	Part Number (CPN)	KSZ8061MNGW
	CCB Number	3473 and 3473.001
Lead-Frame	Paddle size	146 mil x146 mil
	Exposed Paddle size	138 mil x138 mil
	Material	C194
	Process	ETCH
	Lead-lock	N/A
	Part Number	A25719-0
	Plating	Ag (Double ring plating)
Bond Wire	Material	CuPdAu
Die Attach	Part Number	EN-4900
	Conductive	Y
MC	Part Number	G631
PKG	PKG Type	DOFU QFN
	Pin/Ball Count	48
	MSL	3
	Plating	Sn
	PKG width/size	7x7x0.9 mm

VI. Qualification Data:

Package Preconditioning

Test Method/Condition	JEDEC J-STD-020D and JESD22-A113F, MSL Level 3 soak and 260°C peak Reflow Temperature
Lot #	Results (Fail/Pass)
Lot 1	0/260
Lot 2	0/255
Lot 3	0/255

Pre and Post testing was conducted at +25◦C

HAST (Highly Accelerated Temperature and Humidity Stress Test)

Test Method/Condition	JESD22-A110, Vin , Ta = +130°C/85%RH, 96 HRS & 192 HRS Min SS = 77 units
Lot #	Results (Fail/Pass)
Lot 1	0/82 @ 96 hrs 0/82 @ 192 hrs
Lot 2	0/82 @ 96 hrs 0/82 @ 192 hrs
Lot 3	0/82 @ 96 hrs 0/82 @ 192 hrs

HAST 96h: Pre and Post testing was conducted at +25◦C, +85◦C

HAST 192h: Post testing was conducted at +25◦C,

UNBIASED HAST

Test Method/Condition	JESD22-A118, Ta = +130°C/85%RH, 96HRS & 192 HRS Min SS = 77 units
Lot #	Results (Fail/Pass)
Lot 1	0/82 @ 96 hrs 0/82 @ 192 hrs
Lot 2	0/82 @ 96 hrs 0/82 @ 192 hrs
Lot 3	0/82 @ 96 hrs 0/82 @ 192 hrs

Pre and Post testing was conducted at +25◦C

Temperature Cycling

Test Method/Condition	JESD22-A104, Ta = -65°C/+150 °C, 500 CYC & 1000 CYC Min SS = 77 units
Lot #	Results (Fail/Pass)
Lot 1	0/87 @500 cyc, 0/82 @ 1000 cyc ; WPS after TCY: 0 fail/5
Lot 2	0/82 @500 cyc, 0/82 @ 1000 cyc
Lot 3	0/79 @500 cyc, 0/79 @ 1000 cyc

TC 500c: Pre and Post testing was conducted at +85◦C

TC 1000c: Post testing was conducted at 25’C

High Temperature Storage Life

Test Method/Condition	JESD22-A103, Ta = +150 °C, 1008 HRS & 2000 HRS Min SS = 45 units
Lot #	Results (Fail/Pass)
Lot 1	0/50 @ 1008 HRS and 0/50 @ 2000 hrs

HTSL 1008hrs: Pre and Post testing was conducted at +25◦C, +85◦C

HTSL 2000hrs: Post Test was conducted at +25◦C,

VII. Wire Pull/Ball Shear

Lot #1:

Test Item	Sample Size/ Unit	Comment
Wire Pull	30 wires	Pass
Ball Shear	30 balls	Pass
Solderability	22	Pass

Lot #2

Test Item	Sample Size/ Unit	Comment
Wire Pull	30 wires	Pass
Ball Shear	30 balls	Pass
Solderability	22	Pass

Lot #3

Test Item	Sample Size/ Unit	Comment
Wire Pull	30 wires	Pass
Ball Shear	30 balls	Pass
Solderability	22	Pass

VIII. Physical Dimension:

Test Method/Condition	Measure per JESD22 B100 and B108 Min SS = 10 units / lot
Lot #	Results (Fail/Pass)
Lot 1	0/10 Pass
Lot 2	0/10 Pass
Lot 3	0/10 Pass