Product Change Notification - KSRA-15IEHC532

Date:

14 Jan 2019

Product Category:

Ethernet PHYs

Affected CPNs:

Notification subject:

CCB 3371 and 3371.001 Final Notice: Qualification of ASE as a new assembly site for selected Micrel products available in 48L (7x7x0.9mm) and 64L (8x8x0.9mm) VQFN packages.

Notification text:

PCN Status:

Final notification

PCN Type:

Manufacturing Change

Microchip Parts Affected:

Please open one of the icons found in the Affected CPNs section above.

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 products available in 48L (7x7x0.9mm) and 64L (8x8x0.9mm) VQFN packages.

Pre Change:

Assembled at TICP assembly site

Post Change:

Assembled at ASE assembly site

Pre and Post Change Summary:

	Pre Change	Post Change
Assembly Site	Taiwan IC Packing Corp. (TICP)	ASE Inc. (ASE)
Wire material	Au	Au
Die attach material	EN4900	EN4900
Molding compound material	G631	G631
Lead frame material	C194	C194

Impacts to Data Sheet:

None.

Change Impact:

None.

Reason for Change:

To improve manufacturability by qualifying ASE as new assembly site

Change Implementation Status:

In Progress

Estimated First Ship Date:

February 14, 2019 (date code: 1907)

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

Time Table Summary:

	May 2018					-->	January 2019					February 2019			
Workweek	18	19	20	21	22		01	02	03	04	05	06	07	08	09
Initial PCN Issue Date				X											
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:
May 21, 2018: Issued initial notification.
August 15, 2018: R e-issued initial notification to update affected CPN list by removing parts that uses Cu bond Wire.
January 14, 2019: Issued final notification. Attached the Qualification Report. Revised the affected parts list. Provided estimated first ship date on February 14, 2019.
The change described in this PCN does not alter Microchip's current regulatory compliance regarding the material content of the applicable products.
Attachment(s):
PCN_KSRA-15IEHC532_Qual_Report.pdf

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

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If you wish to change your PCN profile, including opt out, please go to the PCN home page select login and sign into your myMicrochip account. Select a profile option from the left navigation bar and make the applicable selections.

QUALIFICATION REPORT SUMMARY

PCN #: KSRA-15IEHC532

Date
December 14, 2018

Qualification of ASE as a new assembly site for selected Micrel products available in 64L (8x8x0.9mm) VQFN package. The selected products of 48L (7x7x0.9mm) package will qualify by similarity (QBS)

Purpose: Qualification of ASE as a new assembly site for selected Micrel products available in 64L (8x8x0.9mm) VQFN package. The selected products of 48L (7x7x0.9mm) package will qualify by similarity (QBS)

CCB No.: 3371 and 3371.001

Device Description:

Device	KSZ9031MNX
Mask	STGB1
Process	TSMC 65nm
Document Control Number	ML12201800AE
Document Revision	A

Qualification Material:

Test Lot	Lot 1	Lot 2	Lot 3
DEVICE	KSZ9031MNXIA (STGB17Q6AA21)	KSZ9031MNXIA (STGB17Q6AA21)	KSZ9031MNXIA (STGB17Q6AA21)
MASK, REV	TKDB1	TKDB1	TKDB1
WAFER FAB	TSMC	TSMC	TSMC
WAFER PROCESS	65nm	65nm	65nm
WAFER LOT	TC14918033708.000/ PF6C14.00	TC14918033708.000/ PF6C14.00	TC14918033708.000/ PF6C14.00
ASSEMBLY LOT	ASE191100495.000	ASE191200001.000	ASE191200002.000
PACKAGE	64L-VQFN 8x8x0.9mm	64L-VQFN 8x8x0.9mm	64L-VQFN 8x8x0.9mm
ASSEMBLY SITE	ASE, Taiwan	ASE, Taiwan	ASE, Taiwan
FINAL TEST LOCATION	OSE, Taiwan	OSE, Taiwan	OSE, Taiwan
Project#	38089-1	38089-2	38089-3
QUAL TESTS	PRECOND, HTSL, HAST, UHAST, TC	PRECOND, HAST, UHAST, TC	PRECOND, HAST, UHAST, TC

Bill of Materials:

Misc.	Assembly site	ASE
	BD Number	ENG_KSZ9031MNXIA-AI-4
	MP Code (MPC)	STGB17Q6AA21
	Part Number (CPN)	KSZ9031MNXIA
Lead-Frame	Paddle size	4.60 mm X 4.60 mm
	Exposed Pad Size	4.20 mm x 4.20 mm
	Material	C 194
	Surface	Double Ring Ag Plating
	Process	Etch
	Part Number	A24662-0
	Lead Plating	Matte Tin
Bond Wire	Material	Au
Die Attach	Part Number	EN-4900
	Conductive	Yes
MC	Part Number	G631
PKG	PKG Type	VQFN
	MSL	3

	Lead Plating	Sn
	Pin/Ball Count	48
	PKG width/size	8 X 8 X 0.9 mm
<u>Die</u>	Die Thickness	8 mils
	Die Size	2.84 mm X 2.00 mm
	Fab Process (site)	65 m; TSMC

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, CSAM pass (SS = 45, attachments 1 & 2)
Lot 2	0/260, CSAM pass (SS = 45, attachments 3 & 4)
Lot 3	0/260, CSAM pass (SS = 45, attachments 5 & 6)

Post testing was conducted at +25°C

HAST (Highly Accelerated Temperature and Humidity Stress Test)

Test Method/Condition	JESD22-A110, Vin = +3.3V, Ta = +130°C/85%RH, 96 HRS Min SS = 77 units
Lot #	Results (Fail/Pass)
Lot 1	0/82
Lot 2	0/82
Lot 3	0/81(*1 -Invalid package reject (EIPD -Electrically Induced Physical Damage FA#2018-006544)

Pre and Post testing was conducted at +25°C, +85°C

UNBIASED HAST

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

Pre and Post testing was conducted at +25°C

Temperature Cycling

Test Method/Condition	JESD22-A104, Ta = -65ºC/+150 ºC, 500 CYC Min SS = 77 units
Lot #	Results (Fail/Pass)
Lot 1	0/82, WPS after TCY: 0/5 pass
Lot 2	0/82
Lot 3	0/82

Pre and Post testing was conducted at +25◦C, +85◦C

High Temperature Storage Life

Test Method/Condition	JESD22-A103, Ta = +150 ºC, 1008 HRS Min SS = 45 units
Lot #	Results (Fail/Pass)
Lot 1	0/50

Pre and Post testing was conducted at +25◦C, +85◦C

Wire Pull/Ball Shear

Lot #1:

Test Item	Sample Size/ Unit	Defect	Max	Min	Avg	Std	Criteria/ Unit	Comment
Wire Pull	200 wires		7.10	6.42	6.82	0.18	2.000/G	Pass
Ball Shear	100 balls		16.90	14.50	15.67	0.58	8.000/G	Pass
Solderabilty	22	0						Pass

Lot #2

Test Item	Sample Size/ Unit	Defect	Max	Min	Avg	Std	Criteria/ Unit	Comment
Wire Pull	200 wires		7.96	6.0	6.56	0.35	2.000/G	Pass
Ball Shear	100 balls		16.80	14.50	15.73	0.57	8.000/G	Pass
Solderabilty	22	0						Pass

Lot #3

Test Item	Sample Size/ Unit	Defect	Max	Min	Avg	Std	Criteria/ Unit	Comment
Wire Pull	200 wires		7.10	6.52	6.79	0.17	2.000/G	Pass
Ball Shear	100 balls		16.40	14.80	15.63	0.46	8.000/G	Pass
Solderabilty	22	0						Pass

KSRA-15IEHC532 - CCB 3371 and 3371.001 Final Notice: Qualification of ASE as a new assembly site for

Affected Catalog Part Numbers(CPN)

KSZ9031MNXCA
KSZ9031MNXCA-TR
KSZ9031MNXIA
KSZ9031MNXIA-TR
KSZ9031RNXCA
KSZ9031RNXCA-TR
KSZ9031RNXIA
KSZ9031RNXIA-TR
KSZ9031RNXIA-TR-JDR