



## Product Change Notification - RMES-23VKIG830

---

**Date:**

16 Aug 2019

**Product Category:**

Others; Ethernet Switches

**Affected CPNs:****Notification subject:**

CCB 3814 Final Notice: Qualification of G631H mold compound material for selected Micrel products available in 128L PQFP (14x20x2.72mm) package at ASE assembly site

**Notification text:****PCN Status:**

Final notification

**Microchip Parts Affected:**

Please open the attachments found in the attachments field below labeled as PCN\_#\_Affected\_CPN.

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

**Description of Change:**

Qualification of G631H mold compound material for selected Micrel products available in 128L PQFP (14x20x2.72mm) package at ASE assembly site.

**Pre Change:**

Using G700A mold compound material

**Post Change:**

Using G631H mold compound material

**Pre and Post Change Summary:**

	Pre Change	Post Change
Assembly Site	ASE Kaohsiung (ASE)	ASE Kaohsiung (ASE)
Wire material	Au	Au
Die attach material	2288A	2288A
Molding compound material	G700A	G631H
Lead frame material	C7025	C7025

**Impacts to Data Sheet:**

None

**Change Impact:**

None

**Reason for Change:**

To improve manufacturability by qualifying G631H mold compound.

**Change Implementation Status:**

In Progress

**Estimated First Ship Date:**

September 16, 2019 (date code: 1938)

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

**Time Table Summary:**

	June 2019					>	August 2019					September 2019				
Workweek	22	23	24	25	26		31	32	33	34	35	36	37	38	39	40



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:

**June 26, 2019:** Issued initial notification.

**August 16, 2019:** Issued final notification. Attached the qualification report. Provided estimated first ship date to be on September 16, 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\\_RMES-23VKIG830\\_Qual\\_Report.pdf](#)

Please contact your local [Microchip sales office](#) with questions or concerns regarding this notification.

#### Terms and Conditions:

If you wish to receive Microchip PCNs via email please register for our PCN email service at our [PCN home page](#) select register then fill in the required fields. You will find instructions about registering for Microchips PCN email service in the [PCN FAQ](#) section.

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.

Affected Catalog Part Numbers (CPN)

KSZ8993

KSZ8993I



## **QUALIFICATION REPORT SUMMARY**

**PCN #: RMES-23VKIG830**

**Date:**

**July 25, 2019**

**Qualification of G631H mold compound material for selected  
Micrel products available in 128L PQFP (14x20x2.72mm)  
package at ASE assembly site.**

**Purpose: Qualification of G631H mold compound material for selected Micrel products available in 128L PQFP (14x20x2.72mm) package at ASE assembly site.**

**I. Summary:**

The purpose of this report is to qualify UBCA1(KSZ8993I) in PQFP 128 LD 14x20x2.7 mm at ASE, Taiwan per CCB# 3814 and following guidelines established in Microchip specification QCI-39000, "Worldwide Quality Conformance Requirements".

**II. Conclusion:**

Based on the results, UBCA1(KSZ8993I) in PQFP 128 LD 14x20x2.7 mm at ASE complies with the reliability guidelines implemented in the qualification plan. Therefore, this part/package can be released to production as per guidelines established in Microchip specification QCI-39000, "Worldwide Quality Conformance Requirements".

**III. Device Description:**

Device	KSZ8993I
Document Control Number	ML0820190021
Document Revision	A
CCB No.	3814

**IV. Qualification Material:**

Test Lot	Lot 1	Lot 2	Lot 3
WAFER LOT	TC03919276071.200/ CPK794.00	TC03919276071.200/ CPK794.00	TC03919276071.200/ CPK794.00
ASSEMBLY LOT	ASE193400191.000	ASE193400194.000	ASE193400195.000
PACKAGE	PQFP 128 LD 14x20x2.7 mm	PQFP 128 LD 14x20x2.7 mm	PQFP 128 LD 14x20x2.7 mm
QUAL TESTS	PRECOND, HTSL, HAST, UHAST, TC	PRECOND, HAST, UHAST, TC	PRECOND, HAST, UHAST, TC

**V. Bill of Materials:**

<u>Misc.</u>	Assembly site	ASE
	BD Number	AAH@K-I-0128-CNA256-0
	MP Code (MPC)	UBCA17C2AA01
	Part Number (CPN)	KSZ8993I
<u>Lead-Frame</u>	Paddle size	315 x 315 mils
	Material	C7025
	DAP Surface Prep (Spot/Ring/Double ring)	Double Ring Plating
	Treatment (roughened/ brown oxide (BOT) /micro-etched/ none)	None
	Process (stamped/Etched)	Stamped
	Lead-lock (Y/N)	N
	Part Number	1100584121
	Lead Plating	Matte Sn
<u>Bond Wire</u>	Material	Au
<u>Die Attach</u>	Part Number	2288A
	Conductive	Yes
<u>MC</u>	Part Number	G631H
<u>PKG</u>	PKG Type	PQFP
	Pin/Ball Count	128
	PKG width/size	14x20x2.72mm
<u>Die</u>	Die Thickness	15
	Die Size	4.433 mm x 5.584 mm
	Fab Process (site)	TSMC 0.25um

**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) Min SS = 231
Lot 1	0/270
Lot 2	0/270
Lot 3	0/270

Pre and Post testing was conducted at +25°C

**HAST (Highly Accelerated Temperature and Humidity Stress Test)**

Test Method/Condition	JESD22-A110, Vin = 3.3V & 1.8V , Ta = +130°C/85%RH, 96 HRS ; Min SS = 77 units
Lot #	Results (Fail/Pass)
Lot 1	0/82 @ 96 hrs
Lot 2	0/82 @ 96 hrs
Lot 3	0/82 @ 96 hrs

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 @ 96 hrs
Lot 2	0/82 @ 96 hrs
Lot 3	0/82 @ 96 hrs

Pre and Post testing was conducted at +25°C

**Temperature Cycling**

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

Pre and Post testing was conducted at +85°C

**High Temperature Storage Life**

Test Method/Condition	JESD22-A103, Ta = +150 °C, 504 HRS and 1008 HRS Min SS = 45 units
Lot #	Results (Fail/Pass)
Lot 1	0/50 @ 504 HRS and 0/50 @ 1008 hrs

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

**VII. Wire Pull/Ball Shear/Solderability****Lot #1:**

Test Item	Sample Size/ Unit	Comment
Wire Pull	200wires	Pass
Ball Shear	100 balls	Pass
Solderability	22	Pass

**Lot #2**

Test Item	Sample Size/ Unit	Comment
Wire Pull	200wires	Pass
Ball Shear	100 balls	Pass
Solderability	22	Pass

**Lot #3**

Test Item	Sample Size/ Unit	Comment
Wire Pull	200wires	Pass
Ball Shear	100 balls	Pass
Solderability	22	Pass

**VIII. Physical Dimension:****Lot #1:**

Test Method/Condition	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