



Date: July 2, 2015  
 PPCN 150001 addendum

**PROCESS/ PRODUCT CHANGE NOTIFICATION**

This PPCN is an addendum to PPCN# 150001, which was dated on January 30, 2015.

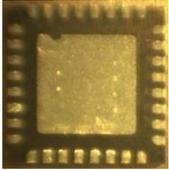
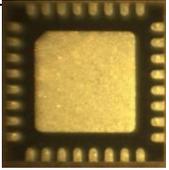
The purpose of this PPCN addendum is to let our customers know that we have also qualified TICIP in Taiwan as another manufacturer to assemble our KSZ8081/KSZ8091 silver wire bonded products in addition to the OSE previously stated in PPCN 150001. We attach a representative reliability report for qualifying Micrel KSZ8081/KSZ8091 products assembled with Silver process at TICIP. This means our customers who buy KSZ8081/KSZ8091 silver wire bonded products may receive products that are either assembled at OSE, Taiwan or at TICIP, Taiwan.

In addition, we created a comparison table to summarize the differences in the products with previous Au wire and the new Silver wire bonding in PPCN 150001.

If you have any questions concerning this change, please contact:

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PPCN150001		KSZ8081/KSZ8091RNxxA/MNXxA	KSZ8041NL/NLI/RNL/RNLI
BOM	Before	Leadframe : C194-Cu, NiPdAu pre-plated Wire : Au 0.8 mil Molding compound : Hitachi CEL9220 (TICP)	Leadframe : C194-Cu, NiPdAu pre-plated Wire : Au 0.8 mil Molding compound : Hitachi CEL9220 (TICP)
	After PPCN	Leadframe : C194-Cu Wire : Ag 0.8 mil Molding compound: Sumitomo G631 (TICP) Molding compound: Sumitomo G700L (OSE)	Leadframe : C194-Cu Wire : Ag 0.8 mil Molding compound: Sumitomo G631 (TICP)
Lead finish	Before	NiPdAu	NiPdAu
	After PPCN	Matte-Sn	Matte-Sn
Assembly site	Before	TICP	TICP
	After PPCN	OSE (PPCN#150001) TICP (PPCN#150001 addendum)	TICP (PPCN#150001)
Die version	Before	A2 for RMII	No change
	After PPCN	A3 for RMII, No change for MII	
Switch over date		Sep 1st 2015	Nov 2nd 2015

Package Outline Drawing	Before	QFN4x4-24L or QFN5x5-32L No change within the assembly site		QFN5x5-32L		
	After PPCN	OSE and T1CP have different pin1 layout on exposed pad		No change		
	Pin1 layout Exposed Pad	T1CP		OSE		T1CP



## RELIABILITY REPORT

DATE: 6/2/15

<b>QUALITY ENG :</b>		<b>PURPOSE:</b>		
Micrel QA		To qualify for QFN Silver wire package at TICP, Taiwan		
<b>PRODUCTS</b>		KSZ8081RNDCA , KSZ8081RNDIA, KSZ8081RNACA , KSZ8081RNAIA KSZ8081RNBCA , KSZ8081RNBIA , KSZ8081MNXCA, KSZ8081MNXIA KSZ8091RNDCA , KSZ8091RNDIA, KSZ8091RNACA , KSZ8091RNAIA KSZ8091RNBCA , KSZ8091RNBIA, KSZ8091MNXCA, KSZ8091MNXIA		
<b>QUALIFICATION VEHICLES</b>	<b>PACKAGE TYPE</b>	<b>ASSEMBLY LOCATION</b>	<b>FAB LOCATION</b>	<b>PROCESS NAME</b>
KSZ8081MNXCS	32L QFN	TICP, Taiwan	DONGBU	0.11 um

### QUALIFICATION RESULTS

TEST DESCRIPTION	METHOD/ CONDITIONS	PART NO.	LOT ID.	DATE CODE	1000hrs (rej/ss)	COMMENTS
<b>HTSL</b>  High Temperature Storage Life Test  With preconditioning	JESD22-A103	KSZ8081MNXCS	M146C38MQC	1443	0/77	
	TA= + 150°C	KSZ8081MNXCS	M147J16MQC	1444	0/77	
TEST DESCRIPTION	METHOD/ CONDITIONS	PART NO.	LOT ID.	DATE CODE	500 CYC (rej/ss)	COMMENTS
<b>TEMPERATURE CYCLE (AIR/AIR) COND. C</b>  With Pre- conditioning	JESD22-A104	KSZ8081MNXCS	M146C38MQC	1443	0/77	
	Ta= Delta- 65°C/+150°C	KSZ8081MNXCS	M147J16MQC	1444	0/77	
TEST DESCRIPTION	METHOD/ CONDITIONS	PART NO.	LOT ID.	DATE CODE	96 hrs (rej/ss)	COMMENTS
<b>PRESSURE POT</b>  With Pre- conditioning	JESD22-102	KSZ8081MNXCS	M146C38MQC	1443	0/77	
	Ta= +121°C/ 100%RH	KSZ8081MNXCS	M147J16MQC	1444	0/77	
TEST DESCRIPTION	METHOD/ CONDITIONS	PART NO.	LOT ID.	DATE CODE	96 hrs (rej/ss)	COMMENTS
<b>HAST</b>  Highly Accelerated Stress Test  With Pre- conditioning	JESD22- A110	KSZ8081MNXCS	M146C38MQC	1443	0/54	
	Ta= 130C/ 85% R.H; Vcc = 3.3V	KSZ8081MNXCS	M147J16MQC	1444	0/54	
TEST DESCRIPTION	METHOD/ CONDITIONS	PART NO.	LOT ID.	DATE CODE	RESULTS (rej/ss)	COMMENTS
<b>SOLDERABILITY TEST</b>	MIL-STD-883 TM.2003	KSZ8081MNXCS	M146C38MQC	1443	0/5	
	+245C	KSZ8081MNXCS	M147J16MQC	1444	0/5	



**QUALIFICATION RESULTS CONTINUE:**

TEST DESCRIPTION	METHOD/ CONDITIONS	PART NO.	LOT ID.	DATE CODE	RESULTS (rej/ss	COMMENTS
<b>DIE SHEAR</b>	Mil-STD-883 Method 2019	KSZ8081MNXCS	M146C38MQC	1443	0/3	
		KSZ8081MNXCS	M147J16MQC	1444	0/3	
<b>WIRE PULL</b>	Mil-STD-883 Method 2011	KSZ8081MNXCS	M146C38MQC	1443	0/300 wires	Ppk= 1.68
		KSZ8081MNXCS	M147J16MQC	1444	0/300 wires	Ppk= 1.70
<b>WIRE BALL SHEAR</b>	JESD22-B116A	KSZ8081MNXCS	M146C38MQC	1443	0/240 balls	Ppk= 1.74
		KSZ8081MNXCS	M147J16MQC	1444	0/240 balls	Ppk= 1.73
<b>FLAMMABILITY</b>	UL-94V-0  Certified	All mold compounds used by Micrel meet this standard. See the UL website on-line list of material flammability certifications. Micrel requires a Certificate of Compliance from the assembly house and we verify the certifications on the web.				