QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: KSRA-04UHXG411

Date

October 08, 2018

Qualification of MTAI as a new assembly site for selected Micrel products available in 32L VQFN (5x5x0.9mm) package. The selected products available 24L VQFN (4x4x0.9mm) packages will qualify by similarity (QBS).

PACKAGE QUALIFICATION REPORT

Purpose	**Qualification of MTAI as a new assembly site for selected Micrel products available in 32L VQFN (5x5x0.9mm) package. The selected products available 24L VQFN (4x4x0.9mm) packages will qualify by similarity (QBS).**
CCB No.	3459 and 3459.001
CN	ES226534
QUAL ID	Q18150
MP CODE	XKAA1TPFAA04
Part No.	KSZ8081RNBIA-TR
Bonding No.	BDM-001909 REV.A
Package	
Type	32L VQFN
Package size	5 x 5 x 1.0 mm
Die thickness	8 mils
Die size	57.8 x 37.4 mils
Lead Frame	
Paddle size	150 x 150 mils
Material	C194
Surface	Ag spot
Process	Etched
Lead Lock	No
Part Number	10103204
Treatment	Roughened
Material	
Epoxy	3280
Wire	Au wire
Mold Compound	G700LTD
Plating Composition	Matte Tin

PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MTAI192002027.000	DU0291033565.000	1833GGQ
MTAI192002287.000	DU0291033565.000	1833HDB
MTAI19200288.000	DU0291033565.000	1833HDC

Result [X] Pass [ ] Fail [ ] ____________________

32L VQFN (5x5x1.0 mm) assembled by MTAI pass reliability test per QCI-39000. This package was qualified the Moisture/Reflow Sensitivity Classification Level 2 at 260°C reflow temperature per IPC/JEDEC J-STD-020E standard.

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
Moisture/Reflow Sensitivity Classification Test (At MSL Level 2)	85°C/ 60%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH 3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243 (IPC/JEDEC J-STD-020E)	IPC/JEDEC J-STD-020E	135	0/135	Pass	
Precondition Prior Perform Reliability Tests (At MSL Level 2)	**Electrical Test :**+25°C and 85°C System: LTX_D1X	JESD22-A113	693(0)	693		Good Devices
	Bake 150°C, 24 hrs System: CHINEE			693		
	85°C/60%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH			693		
	3x Convection-Reflow 265°C max			693		
	System: Vitronics Soltec MR1243					
	Electrical Test :+25°C and 85°C System: LTX_D1X			0/693	Pass	
Temp Cycle	**Stress Condition:** -65°C to +150°C, 500 Cycles System : TABAI ESPEC TSA-70H	JESD22-A104		231		Parts had been pre-conditioned at 260°C
	Electrical Test: + 85°C System: LTX_D1X		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (> 2.5 grams)		15 (0)	0/15	Pass	
	Bond Shear (>15.00 grams)		15 (0)	0/15	Pass	
UNBIASED-HAST	**Stress Condition:** +130°C/85%RH, 96 hrs.	JESD22-A118		231		Parts had been pre-
	Electrical Test: +25°C System: LTX_D1X			0/231		77 units / lot
HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. **Bias Volt:** 3.3 Volts System: HAST 6000X	JESD22-A110		231		Parts had been pre-conditioned at 260°C
	Electrical Test:+25°C and 85°C System: LTX_D1X		231(0)	0/231	Pass	77 units / lot

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
High Temperature Storage Life	**Stress Condition:** Bake 175°C, 504 hrs System: SHEL LAB **Electrical Test :**+25°C and 85°C System: LTX_D1X	JESD22-A103	45(0)	45 0/45	Pass	45 units
Bond Strength Data Assembly	Wire Pull (> 2.5 grams)	M2011	30 (0) Wires	0/30	Pass	
	Bond Shear (>15.00 grams)	JESD22-B116	30 (0) bonds	0/30	Pass	