



**MICROCHIP**

## **QUALIFICATION PLAN SUMMARY**

**PCN # : RMES-23VKIG830**

**Date:  
May 16, 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.

<u>Misc.</u>	Assembly site	ASE
	BD Number	AAH@K-I-0128-CNA256-0
	MP Code (MPC)	UBCA17C2AA01
	Part Number (CPN)	KSZ8993I
	CCB Number	3814
<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, SnPb, PPF-NiPdAu)	Matte Sn
	Strip Size	78x250 mm
	Strip Density	24 units / strip
<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

Test Name	Conditions	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	REL Test Site	Special Instructions
Standard Pb-free Solderability	J-STD-002D ; Perform 8 hour steam aging for Matte tin finish and 1 hour steam aging for NiPdAu finish prior to testing.  Standard Pb-free: Matte tin/ NiPdAu finish, SAC solder, wetting temp 245°C for both SMD & through hole packages.	22	5	1	27	> 95% lead coverage	5	San Jose	Standard Pb-free solderability is the requirement. SnPb solderability (backward solderability- SMD reflow soldering) is required for any plating related changes and highly recommended for other package BOM changes.
Wire Bond Pull - WBP	Mil. Std. 883-2011	5	0	1	5	0 fails after TC	5		30 bonds from a min. 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001	5	0	1	5	0	5		30 bonds from a min. 5 devices.
Physical Dimensions	Measure per JESD22 B100 and B108	10	0	3	30	0	5		
External Visual	Mil. Std. 883-2009/2010	All devices prior to submission for qualification testing	0	3	ALL	0	5		
Preconditioning - Required for surface mount devices	+150°C Bake for 24 hours, moisture loading requirements per MSL level + 3X reflow at peak reflow temperature per Jedec-STD-020E for package type; Electrical test pre and post stress at +25°C.  MSL 3 260°C	231	15	3	738	0	15	San Jose	Spares should be properly identified. 77 parts from each lot to be used for HAST, Autoclave, Temp Cycle test.
HAST	+130°C/85% RH for 96 hours or 110°C/85%RH for 264 hours. Electrical test pre and post stress at +25°C and hot temp. 85°C	77	5	3	246	0	10	Sna Jose	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
UHAST	+130°C/85% RH for 96 hrs or +110°C/85% RH for 264 hrs. Electrical test pre and post stress at +25°C	77	5	3	246	0	10	San Jose	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
Temp Cycle	-65°C to +150°C for 500 cycles. Electrical test pre and post stress at hot temp 85C; 3 grams force WBP, on 5 devices from 1 lot, test following Temp Cycle stress.	77	5	3	246	0	15	San Jose	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.