



MICROCHIP

QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

PCN# KSRA-10JSLC289

Date
October 18, 2018

**Qualification of MMT as an additional assembly site for selected
Atmel products available in 32L VQFN (5x5x0.9mm) package**



MICROCHIP PACKAGE QUALIFICATION REPORT

Purpose: Qualification of MMT as an additional assembly site for selected Atmel products available in 32L VQFN (5x5x0.9mm) package

CCB No.: 3368

Misc.	CN	ES197884-26089
	Assembly site	MMT
	BD Number	BDM-001739
	MP Code (MPC)	35473YRXBC01
	Part Number (CPN)	ATMEGA328P-MNR
Lead-Frame	Paddle size	150x150 mils
	Material	C194
	Manufacturer	ASM
	Surface	Bare Cu on paddle
	Treatment	BOT
	Process	Etched
	Lead-lock	Yes
	Part Number	10103202
	Lead Plating	Matte Tin
Bond Wire	Material	Au
Die Attach	Part Number	3280
	Conductive	Yes
MC	Part Number	G700LTD
PKG	PKG Type	VQFN
	Pin/Ball Count	32
	PKG width/size	5x5x0.9mm
Die	Die Thickness	11 mils
	Die Size	115.5 x 114.2 mils
	Fab Process (site)	35.4K/MCSO



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Manufacturing Information:

Assembly Lot No.	Wafer Lot No.	Date Code
MMT-190800274.000	MCSO519061142.000	1821PH7
MMT-190800275.000	MCSO519061142.000	1821PH8
MMT-190800276.000	MCSO519061142.000	1821PH9

Result

Pass

Fail

Q100 Grade1 qual for 32L VQFN 5x5x0.9mm (RXB) on Atmel products at MMT assembly using 0.8 mil Au wire is qualified the Moisture/ Reflow Sensitivity Classification Level 1 at 260°C reflow temperature per IPC/JEDEC J-STD-020D standard. No delamination were observed on all the units.

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
<u>Precondition</u> <u>Prior Perform</u> <u>Reliability Tests</u> (At MSL Level 1)	Electrical Test: +25°C, 130°C	JESD22-A113	876(0)	0/876	Passed	Good Devices
	Bake 150°C, 24 hrs System: HERAEUS			876		
	85°C/85%RH Moisture Soak 168 hrs. System: Climats Excal 5423-HE	IPC/JEDEC J-STD-020D		876	Passed	
	3x Convection-Reflow 265°C max System: Mancorp CR.5000F			876		
	Electrical Test: +25°C, 130°C			0/876	Passed	
Temp Cycle	Stress Condition: (Standard) 65°C to +150°C, 500 Cycles System: VOTSCH VT 7012 S2	JESD22-A104	243(0)			Parts had been pre-conditioned at 260°C
	Electrical Test: +85°C, System: MAGNUM05 (Handtest)		243(0)	0/243	Passed	
	Bond Strength: Wire Pull (> 2.50 grams) Bond Shear (>15.00 grams)		15(0)	0/15	Passed	
UNBIASED-HAST	Stress Condition: (Standard) +130°C/85%RH, 96 hrs. System: HIRAYAMA HASTEST PC-422R8	JESD22-A118	245(0)			Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C, 130°C System: MT9510 Handler:2580		245(0)	0/245	Passed	
HAST	Stress Condition: (Standard) +130°C/85%RH, 96 hrs. Bias Volt: 5.5 Volts System: HIRAYAMA HASTEST PC-422R8	JESD22-A110	237(0)			Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C, 130°C System: MT9510 Handler:2580		237(0)	0/237	Passed	

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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: HERAEUS	JESD22-A103	78(0)			78 units
	Electrical Test: +25°C, 130°C		78(0)	0/78	Passed	
Solderability Temp 245°C	Bake: Temp 155°C,4Hrs System: Oven Solder Bath: Temp.245°C Solder material: SnPb Visual Inspection: External Visual Inspection	JESD22B-102E	15 (0)	0/15	Passed	Performed at MPHIL
Physical Dimensions	Physical Dimension, 30 units from 1 lot	JESD22-B100/B108	30(0) Units	0/30	Passed	
Bond Strength Data Assembly	Wire Pull (> 2.50 grams)	M2011.8 MIL-STD-883	30(0) Wires	0/30	Passed	
	Bond Shear (>15.00 grams)	M2011.8 MIL-STD-883	30(0) bonds	0/30	Passed	