



MICROCHIP

QUALIFICATION PLAN SUMMARY

PCN #: LIAL-22KDWM778

Date

June 14, 2019

Qualification of MMT as an additional assembly site for selected Atmel products of the 59.91k wafer technology available in 14L SOIC (.150in) package. This is a Q006 grade 1 qualification.

Purpose: Qualification of MMT as an additional assembly site for selected Atmel products of the 59.91k wafer technology available in 14L SOIC (.150in) package. This is a Q006 grade 1 qualification.

Miscellaneous	Assembly site	MMT
	BD Number	BDM-002169B
	MP Code (MPC)	59B15YD3XVA1
	Part Number (CPN)	ATTINY1614-SSZT-VA0
	CCB No.	3789
<u>Lead-Frame</u>	Paddle size	104x150
	Material	A194
	Surface	Bare Cu
	Treatment	Brown oxide treatment; Ag on leads
	Process	Etched
	Lead-lock	No
	Part Number	10101413
	Lead Plating	Matte Tin
	Strip Size	70x x250
	Strip Density	112
<u>Bond Wire</u>	Material	CuPdAu
<u>Die Attach</u>	Part Number	8390A
	Conductive	Yes
Mold Compound	Part Number	G600V
<u>PKG</u>	PKG Type	SOIC
	Pin/Ball Count	14
	PKG width/size	.150in
<u>Die</u>	Die Thickness	8 mils
	Die Size	2.314 x 2.354mm
	Fab Process (site)	59.91K / UMC 8D
<u>MSL</u>	MSL	1

Test Name	Conditions	Reliability Stress Read Point Grade 1: -40°C to +125°C (MCHP E Temp)	Pre & Post Reliability Stress Test Temperature Grade 1: -40°C to +125°C (MCHP E Temp)	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	Special Instructions
Wire Bond Pull - WBP	Mil. Std. 883-2011			3	0	3	Pull/shear as many as is possible per the number of wires per device to be qualified up to a maximum of 30 wires/balls from the total sample size specified.	0 fails after TC	5	Wire pull / ball shear is performed after stress testing and decapsulation.
Wire Bond Shear - WBS	CDF-AEC-Q100-001			3	0	3	Pull/shear as many as is possible per the number of wires per device to be qualified up to a maximum of 30 wires/balls from the total sample size specified.	0	5	
External Visual	Mil. Std. 883-2009/2010			All devices prior to submission for qualification testing	0	3	ALL	0	5	
HTSL (High Temp Storage Life)	JESD22-A103 +150°C 2x Stress	<u>1st Readpoint:</u> Grade 1: 1000 hrs (150°C) <u>2nd Readpoint:</u> Grade 1: 2000 hrs (150°C)	Grade 1: +25°C, +85°C, +125°C	45	5	3	150	0	21 - 167	Perform per the requirements in AEC-Q100/Q101. Spares should be properly identified.
Preconditioning - Required for surface mount devices	J-STD-020 JESD22-A113 +150°C Bake for 24 hours, moisture loading requirements per MSL 1 level + 3X reflow at peak reflow temperature per Jedec-STD-020E for package type.		Grade 1: +25°C	231 + 45 (for devices requiring PTC)	15 + 5 (for devices requiring PTC)	3	738 + 50 (for devices requiring PTC)	0	15	Spares should be properly identified. 77 units from each lot to be used for HAST, Autoclave, Temp Cycle test.
HAST	JESD22-A101 or A110 +110°C/85%RH for 264 hrs 2x Stress	<u>1st Readpoint:</u> Grade 1: 264 hrs (+110°C/85%RH) <u>2nd Readpoint:</u> Grade 1: 528 hrs (+110°C/85%RH)	Grade 1: +25°C, +85°C, +125°C	77	5	3	246	0	10 - 22	Perform per the requirements in AEC-Q006. Spares should be properly identified.
uHAST	JESD22-A102, A118, or A101 +110°C/85% RH for 264 hrs	Grade 1: 264 hrs (+110°C/85% RH)	Grade 1: +25°C	77	5	3	246	0	10	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.

Temp Cycle	JESD22-A104 -65°C to +150°C 2x Stress	<u>1st Readpoint:</u> Grade 1: 500 cycles (-65°C to 150°C) <u>2nd Readpoint:</u> Grade 1: 1000 cycles (-65°C to 150°C)	Grade 1: +105°C, +125°C	77	5	3	246	0	15 - 120	Perform per the requirements in AEC-Q006. Spares should be properly identified.
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