



MICROCHIP

QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

PCN #: MFOL-06OSEM000

Date:
May 05, 2017

**Qualification of MMT as an additional assembly site for
ATTINY20-XU and ATTINY20-XUR catalog part numbers
(CPN) available in 14L TSSOP (4.4mm) package.**



MICROCHIP

PACKAGE QUALIFICATION REPORT

Purpose	Qualification of MMT as an additional assembly site for ATTINY20-XU and ATTINY20-XUR catalog part numbers (CPN) available in 14L TSSOP (4.4mm) package.
CN	ES090796-18969
QUAL ID	QTP3000 Rev. A
MP CODE	354A07D3XC02
Part No.	ATTINY20-SSU
Bonding No.	BDM-001249 rev B
CCB No.	2831 and 8314
<u>Package</u>	
Type	14L SOIC
Package size	150 mils
<u>Lead Frame</u>	
Paddle size	104x150 mils
Material	A194
Surface	Bare Cu
Process	Etched
Lead Lock	No
Part Number	10101413
Treatment	BOT
<u>Material</u>	
Epoxy	8390A
Wire	CuPdAu
Mold Compound	G600V
Plating Composition	Matte Tin



MICROCHIP PACKAGE QUALIFICATION REPORT

Manufacturing Information:

Assembly Lot No.	Wafer Lot No.	Date Code
MMT-17 4600762.000	MCSO517440059.000	1706KK9
MMT-17 4600801.000	MCSO517440059.000	1706MGJ
MMT-174700001.000	MCSO517440059.000	1707MK6

Result

☒

Pass

☐

Fail

☐

14L SOIC (.150") assembled by MMT (ALPH) pass reliability test per QCI-39000 which was conducted at MPHL rel lab. This package was qualified the Moisture/Reflow Sensitivity Classification Level 1 at 260°C reflow temperature per IPC/JEDEC J-STD-020D standard.

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 :+85°C System: MT9320 Handler:0202	JESD22-A113	792(0)	792		Good Devices
	0hr CSAM			22		
	Bake 150°C, 24 hrs System: HERAEUS			792		
	85°C/85%RH Moisture Soak 168 hrs. System: Climats Excal 5423-HE	IPC/JEDEC J-STD-020D		792		
	3x Convection-Reflow 265°C max System: Mancorp CR.5000F			792		
	Electrical Test :+85°C System: MT9320 Handler:0202			0/792	Pass	
Temp Cycle	Stress Condition: (Standard) 65°C to +150°C, 500 Cycles System : VOTSCH VT 7012 S2	JESD22-A104		252		Parts had been pre-conditioned at 260°C
	Electrical Test: + 85°C System: MT9320 Handler:0202		252(0)	0/252	Pass	
	Bond Strength: Wire Pull (> 2.50 grams) Bond Shear (>15.00 grams)		12(0)	0/12	Pass	
	Stress Condition: (Extended) -65°C to +150°C, 1000 Cycles System : VOTSCH VT 7012 S2			240		
	Electrical Test: + 85°C System: MT9320 Handler:0202		240 (0)	0/240	Pass	
	Bond Strength: Wire Pull (> 2.50 grams) Bond Shear (>15.00 grams)		12(0)	0/12	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
UNBIASED- HAST	Stress Condition: (Standard) +130°C/85%RH, 96 hrs. System: HIRAYAMA HASTEST PC-422R8	JESD22- A118		252		Parts had been pre-conditioned at 260°C
	Electrical Test: +85°C System: MT9320 Handler:0202		252(0)	0/252	Pass	84 units / lot
	Stress Condition: (Extended) +130°C/85%RH, 192 hrs. System: HIRAYAMA HASTEST PC-422R8			252		
	Electrical Test: + 85°C System: MT9320 Handler:0202		252(0)	0/252	Pass	84 units / lot
HAST	Stress Condition: (Standard) +130°C/85%RH, 96 hrs. Bias Volt: 5.5 Volts System: HIRAYAMA HASTEST PC-422R8	JESD22- A110		238		Parts had been pre-conditioned at 260°C
	Electrical Test: +85°C System: MT9320 Handler:0202		238(0)	0/238	Pass	
	Stress Condition: (Extended) +130°C/85%RH, 192 hrs. Bias Volt: 5.5 Volts System: HIRAYAMA HASTEST PC-422R8			225		
	Electrical Test: +85°C System: MT9320 Handler:0202		225(0)	0/225	Pass	

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: HERAEUS Electrical Test :+85°C System: MT9320 Handler:0202	JESD22-A103	45(0)	45 0/45	Pass	45 units
Solderability Temp 215°C	Steam Aging: Temp 93°C,8Hrs System: SAS-3000 Solder Dipping: Solder Temp.215°C Solder material: SnPb Sn63,Pb37 System: ERSA RA 2200D Visual Inspection: External Visual Inspection	JESD22B-102E	22 (0)	22 22 0/22	Pass	
Solderability Temp 245°C	Steam Aging: Temp 93°C,8Hrs System: SAS-3000 Solder Dipping: Solder Temp.245°C Solder material: Pb Free Sn 95.5Ag3.9Cu0.6 System: ERSA RA 2200D Visual Inspection: External Visual Inspection	JESD22B-102E	22 (0)	22 22 0/22	Pass	
Physical Dimensions	Physical Dimension, 30 units from 1 lot	JESD22-B100/B108	30(0) Units	0/30	Pass	
Bond Strength Data Assembly	Wire Pull (>2.50 grams)	M2011.8	30 (0) Wires	0/30	Pass	
	Bond Shear (>15.00 grams)	MIL-STD-883	30 (0) bonds	0/30	Pass	



QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

PCN #: MFOL-06OSEM000

Date:
July 14, 2025

**Qualification of MMT as an additional assembly site
for ATTINY20-XU and ATTINY20-XUR catalog part
numbers (CPN) available in 14L TSSOP (4.4mm)
package.**



MICROCHIP

PACKAGE QUALIFICATION REPORT

Purpose	Qualification of MMT as an additional assembly site for ATTINY20-XU and ATTINY20-XUR catalog part numbers (CPN) available in 14L TSSOP (4.4mm) package.
CN	E000269408
QUAL ID	R2500607 Rev. A
Bonding No.	BD-003122 Rev 01
MP CODE	59B0H4D4XFB5
Part No.	PIC16F17124-E/ST
CCB No.	7550 and 8134
<u>Lead Frame</u>	
Paddle size	118 x 153 mils
Material	C7025
Surface	Bare Cu
Process	Roughening
Lead lock	No
Part number	10101406
Plating composition	Matte Tin
<u>Bond Wire</u>	
Wire	CuPdAu wire
<u>Die Attach Material</u>	
Epoxy	2200D
<u>Mold Compound</u>	
Mold compound	G600V
<u>Package</u>	
Type	14L TSSOP
Package size	4.4mm.



MICROCHIP

PACKAGE QUALIFICATION REPORT

Manufacturing Information:

Assembly Lot No.	Wafer Lot No.	Date Code
MMT-260500699.000	GRSM425293378.300	2518WAT
MMT-260500706.000	GRSM425293378.300	2518462
MMT-260500707.000	GRSM425293378.300	2518468

Result ☒ Pass ☐ Fail ☐ _____

14L TSSOP (4.4 mm) assembled by MMT pass reliability test per QCI-39000. This package was qualified the Moisture/Reflow Sensitivity Classification Level 1 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
<u>Precondition</u> <u>Prior Perform</u> <u>Reliability Tests</u> (At MSL Level 1)	Electrical Test: +25°C, 85°C and 125°C System: J750	JESD22-A113	693(0)	0/693	Pass	Good Devices
	Bake 150°C, 24 hrs.	JIP/ IPC/JEDEC J-STD-020E		693		
	System: CHINEE			693		
	85°C/85%RH Moisture Soak 168 hrs.			693		
	System: TABAI ESPEC Model PR-3SPH			693		
	3x Convection-Reflow 265°C max					
	System: Vitronics Soltec MR1243					
	Electrical Test: +25°C, 85°C and 125°C System: J750		693(0)	0/693	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
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 and 125°C System: J750		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (>2.50 grams)		15(0)	0/15	Pass	
UNBIASED-HAST	Stress Condition: +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22-A118		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C System: J750		231(0)	0/231	Pass	77 units / lot
HAST	Stress Condition: +130°C/85%RH, 96 hrs. Bias Volt: 5.5 Volts System: HAST 6000X	JESD22-A110		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C, 85°C and 125°C System: J750		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: TPS Bake Oven Electrical Test: +25°C, 85°C and 125°C System: J750	JESD22-A103	135(0)	135 0/135	Pass	45 units / lot
Wire sweep	Wire sweep Inspection 15 Wires / lot	-	45(0) Wires	0/45	Pass	
Bond Strength Data Assembly	Wire Pull (>2.50 grams) Bond Shear (>12.60 grams)	Mil. Std. 883-2011 CDF-AEC- Q100-001	30(0) Wires 30(0) Bonds	0/30 0/30	Pass Pass	