



## Product Change Notification / NTDO-10HHGT120

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**Date:**

19-Aug-2021

**Product Category:**

8-bit Microcontrollers

**PCN Type:**

Manufacturing Change

**Notification Subject:**

CCB 3012.001 Final Notice: Qualification of MMT as an additional assembly site for selected Atmel ATTINY104 device family available in 8L SOIC (150mils) package.

**Affected CPNs:**

[NTDO-10HHGT120\\_Affected\\_CPN\\_08192021.pdf](#)

[NTDO-10HHGT120\\_Affected\\_CPN\\_08192021.csv](#)

**Notification Text:**

**PCN Status:** Final notification

**PCN Type:** Manufacturing Change

**Microchip Parts Affected:** Please open one of the files found in the Affected CPNs section.

NOTE: For your convenience Microchip includes identical files in two formats (.pdf and .xls).

**Description of Change:** Qualification of MMT as an additional assembly site for selected Atmel ATTINY104 device family available in 8L SOIC (150mils) package.

**Pre and Post Change Summary:**

	Pre Change	Post Change
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Assembly Location		Lingsen Precision Industries, Limited (LPI)	Lingsen Precision Industries, Limited (LPI)	Microchip Technology Thailand Branch (MMT)
MSL Information		MSL 2	MSL 2	MSL 1
Bond Wire Material		CuPdAu	CuPdAu	Au
Die Attach material		CRM-1033BF	CRM-1033BF	8390A
Mold compound material		G600	G600	G600
Lead Frame	Material	C194*	C194*	A194*
	Lead-lock	Yes	Yes	No
	Paddle Size	90x90 mils	90x90 mils	104x150 mils
	See pre and post change comparison			

Note: \* A194, C194 and CDA194 Lead frame material are the same, it is just a MCHP internal labelling difference.

**Impacts to Data Sheet:** None

**Change Impact:**None

**Reason for Change:**To improve manufacturability by qualifying MMT as an additional assembly site.

**Change Implementation Status:**In Progress

**Estimated First Ship Date:**September 5, 2021 (date code: 2137)

NOTE: Please be advised that after the estimated first ship date customers may receive pre and post change parts

**Time Table Summary:**

	August 2021	September 2021
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Workweek	32	33	34	35	36	37	38	39	40
Qual Report Availability			X						
Final PCN Issue Date			X						
Estimated First Ship Date						X			

**Method to Identify Change:** Traceability code

**Qualification Report:** Please open the attachments included with this PCN labeled as PCN\_#\_Qual Report.

**Revision History:** August 19, 2021: Issued final notification.

The change described in this PCN does not alter Microchip's current regulatory compliance regarding the material content of the applicable products.

## Attachments:

[PCN\\_NTDO-10HHGT120\\_Pre and Post Change Summary.pdf](#)

[PCN\\_NTDO-10HHGT120\\_Qual\\_Report.pdf](#)

Please contact your local [Microchip sales office](#) with questions or concerns regarding this notification.

## Terms and Conditions:

If you wish to receive Microchip PCNs via email please register for our PCN email service at our [PCN home page](#) select register then fill in the required fields. You will find instructions about registering for Microchips PCN email service in the [PCN FAQ](#) section.

If you wish to change your PCN profile, including opt out, please go to the [PCN home page](#) select login and sign into your myMicrochip account. Select a profile option from the left navigation bar and make the applicable selections.

Affected Catalog Part Numbers (CPN)

ATTINY102-SSF

ATTINY102F-SSF

ATTINY102-SSN

ATTINY102F-SSN

ATTINY102-SSNR

ATTINY102F-SSNR

ATTINY102-SSFR

ATTINY102F-SSFR

# **CCB 3012.001**

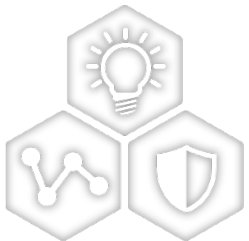
## **Pre and Post Change Summary**

### **PCN# NTDO-10HHGT120**



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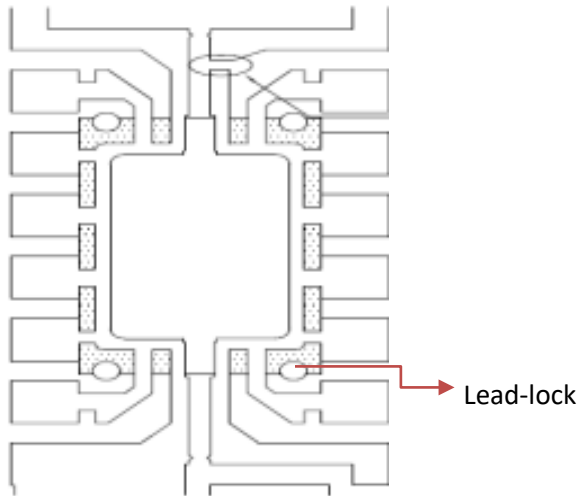


SMART | CONNECTED | SECURE

**Qualification of MMT as an additional assembly site for selected Atmel  
ATTINY104 device family available in 8L SOIC (150mils) package**

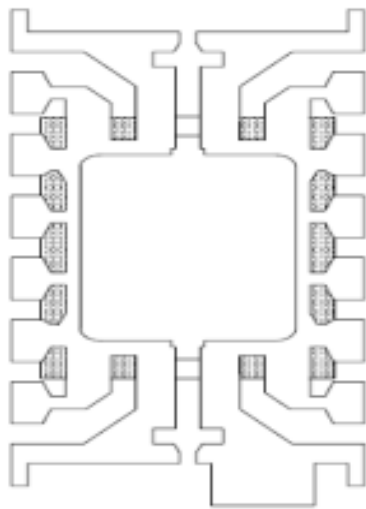
# Pre and Post Change Summary

## Pre Change



<b>Assembly Location</b>	Lingsen Precision Industries, Limited (LPI)
<b>Leadframe Material</b>	C194*
<b>Leadlock</b>	Yes
<b>Paddle Size</b>	90x90 mils

## Post Change



<b>Assembly Location</b>	Microchip Technology Thailand Branch (MMT)
<b>Leadframe Material</b>	A194*
<b>Leadlock</b>	No
<b>Paddle Size</b>	104x150 mils

Note: \*A194, C194 and CDA194 Lead frame material are the same, it is just a MCHP internal labelling difference.



**QUALIFICATION REPORT SUMMARY**  
RELIABILITY LABORATORY

**PCN#: NTDO-10HHGT120**

**Date:**  
**August 01, 2017**

**Qualification of gold (Au) bond wire as secondary wire material for selected Atmel devices available in 14L SOIC package at MMT assembly site. The qualification of MMT as an additional assembly site for selected Atmel ATTINY104 device family available in 8L SOIC (150mils) package will qualify by similarity (QBS)**



## **MICROCHIP**

# **PACKAGE QUALIFICATION REPORT**

<b>Purpose</b>	Qualification of gold (Au) bond wire as secondary wire material for selected Atmel devices available in 14L SOIC package at MMT assembly site. The qualification of MMT as an additional assembly site for selected Atmel ATTINY104 device family available in 8L SOIC (150mils) package will qualify by similarity (QBS).
<b>CN</b>	ES104802-20959
<b>QUAL ID</b>	QTP3107 Rev. A
<b>MP CODE</b>	355B27D3XC03
<b>Part No.</b>	ATTINY84-20SSU
<b>Bonding No.</b>	BDM-001282 rev B
<b>CCB#</b>	3012 and 3012.001
<b><u>Package</u></b>	
<b>Type</b>	14L SOIC
<b>Package size</b>	150 mils
<b><u>Lead Frame</u></b>	
<b>Paddle size</b>	104x150 mils
<b>Material</b>	C194
<b>Surface</b>	Single Ring; Bare Cu on paddle
<b>Process</b>	Stamped
<b>Lead Lock</b>	No
<b>Part Number</b>	10101413
<b>Treatment</b>	BOT; Roughened Ag
<b><u>Material</u></b>	
<b>Epoxy</b>	8390A
<b>Wire</b>	Au
<b>Mold Compound</b>	G600
<b>Plating Composition</b>	Matte Tin





## **MICROCHIP PACKAGE QUALIFICATION REPORT**

### **Manufacturing Information**

<b>Assembly Lot No.</b>	<b>Wafer Lot No.</b>	<b>Date Code</b>
MMT-181100929.000	MCSO518010147.100	1723197
MMT-181100930.000	MCSO518010147.100	17231EE
MMT-181100931.000	MCSO518010147.100	17231C5

### **Result**

☒ **X**      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	Test Condition	Standard /Method	Qty. (Acc.)	Def/SS	Result	Remarks
<b><u>Precondition Prior Perform Reliability Tests (At MSL Level 1)</u></b>	<b>Electrical Test</b> :+85°C System: MT9320 Handler:0202	JESD22-A113	789(0)	789		Good Devices
	Bake 150°C, 24 hrs System: HERAEUS			789		
	85°C/85%RH Moisture Soak 168 hrs. System: Climats Excal 5423-HE	IPC/JEDEC J-STD-020D		789		
	3x Convection-Reflow 265°C max System: Mancorp CR.5000F			789		
	<b>Electrical Test</b> :+85°C System: MT9320 Handler:0202			0/789	Passed	
<b>Temp Cycle</b>	<b>Stress Condition:</b> (Standard)65°C to +150°C, 500 Cycles System : VOTSCH VT 7012 S2	JESD22-A104		254		Parts had been pre-conditioned at 260°C
	<b>Electrical Test:</b> + 85°C System: MT9320 Handler:0202		254	0/254	Passed	
	<b>Bond Strength:</b> Wire Pull (> 2.50 grams) Bond <i>Shear</i> (>15.00 grams)		15(0)	0/15	Passed	
<b>UNBIASED-HAST</b>	<b>Stress Condition:</b> (Standard) +130°C/85%RH, 96 hrs. System: HIRAYAMA HASTEST PC-422R8	JESD22-A118		240		Parts had been pre-conditioned at 260°C
	<b>Electrical Test:</b> +85°C System: MT9320 Handler: 0202		240	0/240	Passed	
<b>HAST</b>	<b>Stress Condition:</b> (Standard) +130°C/85%RH, 96 hrs. <b>Bias Volt:</b> 5.5 Volts System: HIRAYAMA HASTEST PC-422R8	JESD22-A110		238		Parts had been pre-conditioned at 260°C
	<b>Electrical Test:</b> +85°C System: MT9320 Handler:0202		238	0/238	Passed	

# PACKAGE QUALIFICATION REPORT

Test Number	Test Condition	Standard / Method	Qty. (Acc.)	Def/SS	Result	Remarks
High Temperature Storage Life	<b>Stress Condition:</b> Bake 175°C, 504 hrs System: HERAEUS	JESD22-A103		50		45 units
	<b>Electrical Test</b> :+85°C System: MT9320 Handler:0202		50(0)	0/50	Pass	
Solderability Temp 215°C	<b>Steam Aging:</b> Temp 93°C,8Hrs System: SAS-3000 Solder Dipping: Solder Temp.215°C Solder material: SnPb Sn63,Pb37 System: ERS A RA 2200D Visual Inspection: External Visual Inspection	JESD22B -102E	22 (0)	0/22		Performed atMTAI
Solderability Temp 245°C	<b>Steam Aging:</b> Temp 93°C,8Hrs System: SAS-3000 Solder Dipping: Solder Temp.245°C Solder material: Pb Free Sn 95.5Ag3.9Cu0.6 System: ERS A RA 2200D Visual Inspection: External Visual Inspection	JESD22B -102E	22 (0)	0/22		Performed atMTAI
Bond Strength Data Assembly	Wire Pull (> 2.50 grams)	M2011.	30 (0) Wires	0/30		
	Bond Shear (>15.00 grams)	MIL-STD-883	30 (0) bonds	0/30		