



## Product Change Notification / NTDO-14VTWR800

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### Date:

17-Dec-2021

### Product Category:

Clock and Timing - Clock and Data Distribution, Clock and Timing - High Speed Communication

### PCN Type:

Manufacturing Change

### Notification Subject:

CCB 4395.001 Final Notice: Qualification of MMT as additional assembly site for selected Micrel SY5805xAUMG, SY880x3LMG, SY880x3CLMG and SY88xxxALMG device families available in 16L VQFN (3x3x1.00mm) package.

### Affected CPNs:

[NTDO-14VTWR800\\_Affected\\_CPN\\_12172021.pdf](#)

[NTDO-14VTWR800\\_Affected\\_CPN\\_12172021.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 additional assembly site for selected Micrel SY5805xAUMG, SY880x3LMG, SY880x3CLMG and SY88xxxALMG device families available in 16L VQFN (3x3x1.00mm) package.

### Pre and Post Change Summary:

		Pre Change	Post Change	
Assembly Site		Unisem (M) Berhad Perak, Malaysia (UNIS)	Unisem (M) Berhad Perak, Malaysia (UNIS)	Microchip Technology Thailand (Branch) (MMT)
MSL		2	2	1
Wire Material		Au	Au	Au
Die Attach	Material	8290	8290	8600
	Conductive	Yes	Yes	Yes
Molding Compound Material		G770HCD	G770HCD	G700LTD
Lead Frame Material	Material	C194	C194	C194
	DAP Surface Prep	NiPdAu	NiPdAu	NiPdAu
	Paddle Size	69 x 69 mils	69 x 69 mils	75x75 mils
	Lead-Lock	No	No	Yes
See Pre and Post change comparison				

**Impacts to Data Sheet:**None

**Change Impact:**None

**Reason for Change:**To improve on-time delivery performance by qualifying MMT as an additional assembly site.

**Change Implementation Status:**In Progress

**Estimated First Ship Date:**November 19, 2021 (datecode: 2147)

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

**Time Table Summary:**

	September 2021					->	November 2021				December 2021				
Workweek	3 6	3 7	3 8	3 9	4 0		45	46	47	4 8	49	50	51	52	53
Initial PCN Issue Date			X												
Qual Report Availability												X			

Final PCN Issue Date									X						
Estimated Implementation 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:**September 17, 2021: Issued initial notification.  
November 13, 2021: Issued Final Notification. Provided estimated first ship date to be on November 19, 2021.  
December 17, 2021: Re-issued final notification. Attached the qualification report and updated timetable summary.

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-14VTWR800\\_ Qual Report.pdf](#)
- [PCN\\_NTDO-14VTWR800\\_Pre and Post Change\\_Summary.pdf](#)

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

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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.

**CCB 4395.001**  
**Pre and Post Change Summary**  
**PCN # NTDO-14VTWR800**



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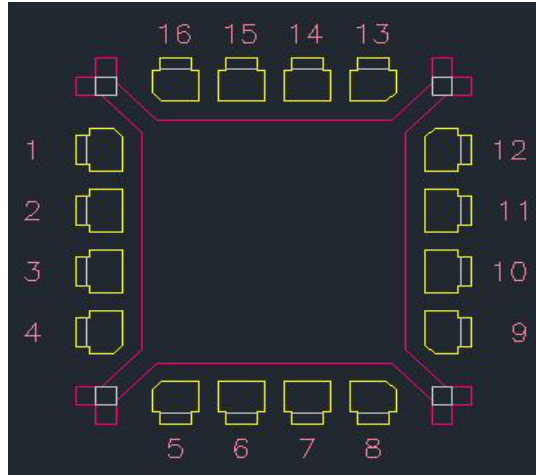
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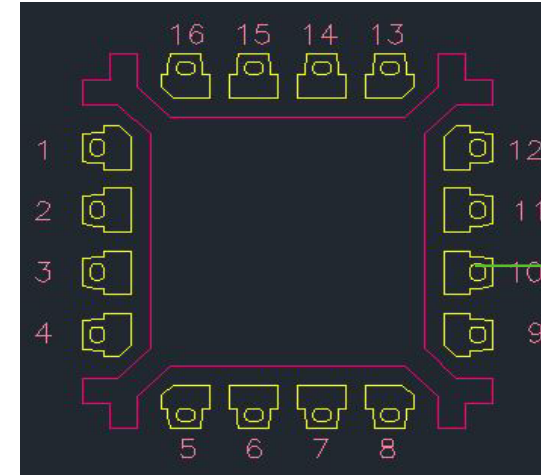
# Lead frame Comparison

## Pre Change UNIS



<b>Lead frame Material</b>	C194
<b>Lead frame DAP surface prep</b>	NiPdAu
<b>Lead frame lead-lock</b>	None

## Post Change MMT



<b>Lead frame Material</b>	C194
<b>Lead frame DAP surface prep</b>	NiPdAu
<b>Lead frame lead-lock</b>	Yes

Note: The lead lock hole fills with mold compound during the assembly process and provides improved protection against moisture penetration around the interface edges between pins and mold compound.



**MICROCHIP**

**QUALIFICATION REPORT SUMMARY**  
RELIABILITY LABORATORY

**PCN#: NTDO-14VTWR800**

**Date:**  
**December 9, 2021**

**Qualification of MMT as additional assembly site for  
selected Micrel SY5805xAUMG, SY880x3LMG,  
SY880x3CLMG and SY88xxxALMG device families  
available in 16L VQFN (3x3x1.00mm) package.**



## MICROCHIP PACKAGE QUALIFICATION REPORT

<b>Purpose</b>	Qualification of MMT as additional assembly site for selected Micrel SY5805xAUMG, SY880x3LMG, SY880x3CLMG and SY88xxxALMG device families available in 16L VQFN (3x3x1.00mm) package.
<b>CN</b>	ES363756
<b>QUAL ID</b>	R2100980 Rev A
<b>MP CODE</b>	TJAE17NCAA02
<b>Part No.</b>	SY88063CLMG
<b>Bonding No.</b>	BD-000174 Rev. 02
<b>CCB#</b>	4395.001
<b><u>Package</u></b>	
<b>Type</b>	16L VQFN
<b>Package size</b>	3 x 3 x 1.0 mm
<b><u>Lead Frame</u></b>	
<b>Paddle size</b>	75 x 75 mils
<b>Material</b>	C194
<b>Surface</b>	NiPdAu
<b>Treatment</b>	Roughening
<b>Process</b>	Etched
<b>Lead Lock</b>	Yes
<b>Part Number</b>	10101615
<b><u>Material</u></b>	
<b>Epoxy</b>	8600
<b>Wire</b>	Au wire
<b>Mold Compound</b>	G700LTD
<b>Plating Composition</b>	NiPdAu



# MICROCHIP PACKAGE QUALIFICATION REPORT

## Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MMT-222603727.000	TJ03922250046.200	2139H3S
MMT-222700777.000	TJ03922250046.200	2139P21
MMT-222800300.000	TJ03922250046.200	2140P2P

### Result

Pass

Fail

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16L VQFN (3x3x1.0 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
<b>Precondition Prior Perform Reliability Tests (At MSL Level 1)</b>	<b>Electrical Test:</b> +25°C and 85°C System: V93K_TCG	JESD22-A113	693(0)	693		Good Devices
	Bake 150°C, 24 hrs System: CHINEE	JIP/IPC/JEDEC		693		
	85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH	J-STD-020E		693		
	3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243			693		
	<b>Electrical Test:</b> +25°C and 85°C System: V93K_TCG			0/693	Pass	

## PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Temp Cycle	<b>Stress Condition:</b> -65°C to +150°C, 500 Cycles System: TABAI ESPEC TSA-70H	JESD22-A104		231		Parts had been pre-conditioned at 260°C 77 units / lot
	<b>Electrical Test:</b> +85°C System: V93K_TCG		231(0)	0/231	Pass	
	<b>Bond Strength:</b> Wire Pull (> 6.00 grams) Bond Shear (> 22.00 grams)		15 (0)	0/15	Pass	
UNBIASED-HAST	<b>Stress Condition:</b> +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22-A118		231		Parts had been pre-conditioned at 260°C 77 units / lot
	<b>Electrical Test:</b> +25°C System: V93K_TCG		231(0)	0/231	Pass	
HAST	<b>Stress Condition:</b> +130°C/85%RH, 96 hrs. <b>Bias Volt:</b> 3.0 Volts System: HAST 6000X	JESD22-A110		231		Parts had been pre-conditioned at 260°C 77 units / lot
	<b>Electrical Test:</b> +25°C and 85°C System: V93K_TCG		231(0)	0/231	Pass	

## PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
<b>High Temperature Storage Life</b>	<b>Stress Condition:</b> Bake 175°C, 500 hrs System: SHEL LAB	JESD22- A103		45		45 units
	<b>Electrical Test:</b> +25°C and 85°C System: V93K_TCG		45(0)	0/45	Pass	
<b>Bond Strength Data Assembly</b>	Wire Pull (> 6.00 grams)	Mil. Std. 883-2011	30 (0) Wires	0/30	Pass	
	Bond Shear (> 22.00 grams)	CDF-AEC- Q100-001	30 (0) bonds	0/30	Pass	

Affected Catalog Part Numbers (CPN)

SY58051AUMG  
SY58051AUMG-TR  
SY58052AUMG  
SY58052AUMG-TR  
SY88022ALMG  
SY88022ALMG-TR  
SY88053CLMG  
SY88063CLMG  
SY88073LMG  
SY88083LMG  
SY88053CLMG-TR  
SY88063CLMG-TR  
SY88073LMG-TR  
SY88083LMG-TR  
SY88953ALMG  
SY88953ALMG-TR