Product Change Notification / ASER-02NIOC250

Date:

07-Feb-2023

Product Category:

Motor Drivers, Power Management - PWM Controllers, Power MOSFET Drivers

PCN Type:

Manufacturing Change

Notification Subject:

CCB 6136 Final Notice: Qualification of MMT as an additional assembly site for selected MIC460xx, MIC410xx and MIC380xx device families available in 8L SOIC (3.90mm) package.

Affected CPNs:

ASER-02NIOC250_Affected_CPN_02072023.pdf
ASER-02NIOC250_Affected_CPN_02072023.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 MIC460xx, MIC410xx and MIC380xx device families available in 8L SOIC (3.90mm) package.

Pre and Post Change Summary:

	Pre Change	Post Change

Assembly Site	Stars Microelectronics (Thailand) Public Company Limited (STAR)	Unisem (M) Berhad Perak, Malaysia (UNIS)	Stars Microelectronics (Thailand) Public Company Limited (STAR)	Unisem (M) Berhad Perak, Malaysia (UNIS)	Microchip Technology Thailand (MMT)
Wire Material	Au	Au	Au	Au	Au
Die Attach Material	2200D	8290	2200D	8290	8390A
Molding Compound Material	G600	G600KA	G600	G600KA	G600V
Lead-Frame Material*	A194/CDA194	A194	A194/CDA194	A194	CDA194
Lead-Frame Paddle Size	95x130	95x130	95x130	95x130	95x130
DAP Surface Prep	NiPdAu	NiPdAu	NiPdAu	NiPdAu	Bare Cu

*Note: C194, A194 or 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 cycle time and productivity by qualifying MMT as an additional assembly site.

Change Implementation Status: In Progress

Estimated First Ship Date: March 2, 2023 (date code: 2309)

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

Time Table Summary:

	February 2023				**March 2023**				
Workweek	5	6	7	8	9	10	11	12	13
Qual Report Availability		x							
Final PCN Issue		x							

Date									
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: February 7, 2023: 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 ASER-02NIOC250_Qual Report.pdf
PCN_ASER-02NIOC250_Pre and Post Change Summary.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.

QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

PCN #: ASER-02NIOC250

Date:
January 10, 2023

Qualification of MMT as an additional assembly site for selected MIC460xx, MIC410xx and MIC380xx device families available in 8L SOIC (3.90mm) package. This is a qualification by similarity.

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PACKAGE QUALIFICATION REPORT

Purpose	Qualification of MMT as an additional assembly site for selected MIC460xx, MIC410xx and MIC380xx device families available in 8L SOIC (3.90mm) package. This is a qualification by similarity.
CCB	5125 & 6136
CN	E000116907
QUAL ID	R2201027 Rev. A
MP CODE	27812YC2XVA1
Part No.	MIC4604YM-TRVAO
Bonding No.	BD-000602 Rev.01
Package	
Type	8L SOIC
Package size	150 mils (3.90mm)
Lead Frame	
Paddle size	95 x 130 mils
Material	CDA194
Surface	Bare Cu
Process	Stamp
Lead Lock	No
Part Number	10100819
Treatment	BOT
Material	
Epoxy	8390A
Wire	Au wire
Mold Compound	G600V
Plating Composition	Matte Sn

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PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MMT-231301242.000	TMPE220224873.300	2226V33
MMT-231301360.000	TMPE220224873.300	2226YR9
MMT-231400767.000	TMPE220224873.300	2226YTR

Result [x] Pass [ ] Fail [ ] _____

8L SOIC (150 mils) 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
Precondition Prior Perform Reliability Tests (At MSL Level 1)	**Electrical Test:** +25°C, 85°C and 125°C System: TMT	JESD22-A113	693(0)	0/693		Good Devices
	Bake 150°C, 24 hrs System: CHINEE	JIP/ IPC/JEDEC J-STD-020E		0/693		
	85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH			0/693		
	3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243			0/693		
	Electrical Test: +25°C, 85°C and 125°C System: TMT		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		0/231		Parts had been pre-conditioned at 260°C
	Electrical Test: +85°C and 125°C System: TMT		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (>6.00 grams)		15(0)	0/15	Pass	
	Bond Shear (>22.00 grams)		15(0)	0/15	Pass	
UNBIASED-HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22-A118		0231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C System: TMT		231(0)	0/231	Pass	77 units / lot
HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. **Bias Volt:** 16 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: TMT		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, 500 hrs. System: SHEL LAB **Electrical Test:** +25°C, 85°C and 125°C System: TMT	JESD22-A103	 45(0)	0/45 0/45	 Pass	
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	J-STD-002	22(0)	0/22 0/22 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 95.5Ag3.9 Cu0.6 System: ERSA RA 2200D Visual Inspection: External Visual Inspection	J-STD-002	22(0)	0/22 0/22 0/22	 Pass	
Physical Dimensions	Physical Dimension, 10 units / 1 lot	JESD22-B100/B108	30(0) Units	0/30	Pass	
Bond Strength Data Assembly	Wire Pull (>6.00 grams) Bond Shear (>22.00 grams)	Mil. Std. 883-2011 CDF-AEC-Q100-001	30(0) Wires 30(0) bonds	0/30 0/30	Pass Pass	

Affected Catalog Part Numbers (CPN)

MIC4605-1YMVAO
MIC4605-2YMVAO
MIC4605-1YM-TRVAO
MIC4605-2YM-TRVAO
MIC4100YM
MIC4101YM
MIC4102YM
MIC4103YM
MIC4104YM
MIC4100YM-TR
MIC4101YM-TR
MIC4102YM-TR
MIC4103YM-TR
MIC4104YM-TR
MIC3808YM
MIC3809YM
MIC3808YM-TR
MIC3809YM-TR
MIC4605-1YM
MIC4605-2YM
MIC4605-1YM-TR
MIC4605-1YM-T5
MIC4605-2YM-TR
MIC4605-2YM-T5
MIC4604YM
MIC4604YM-TR
MIC4604YM-T5

CCB 6136
PCN #: ASER-02NIOC250

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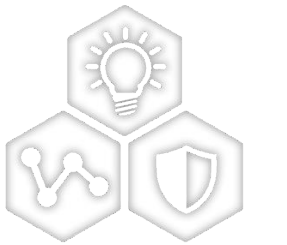
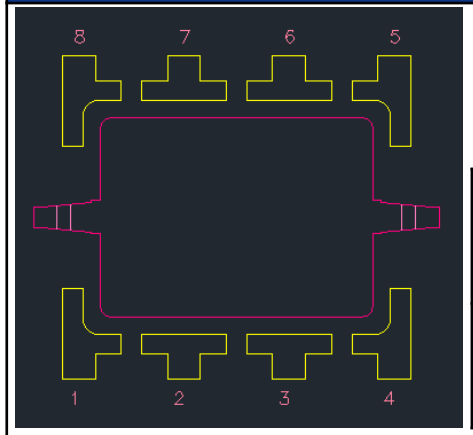
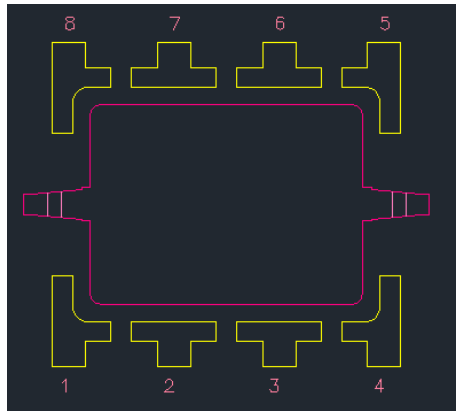


Pre and Post Summary – Bondshell Comparison

STAR

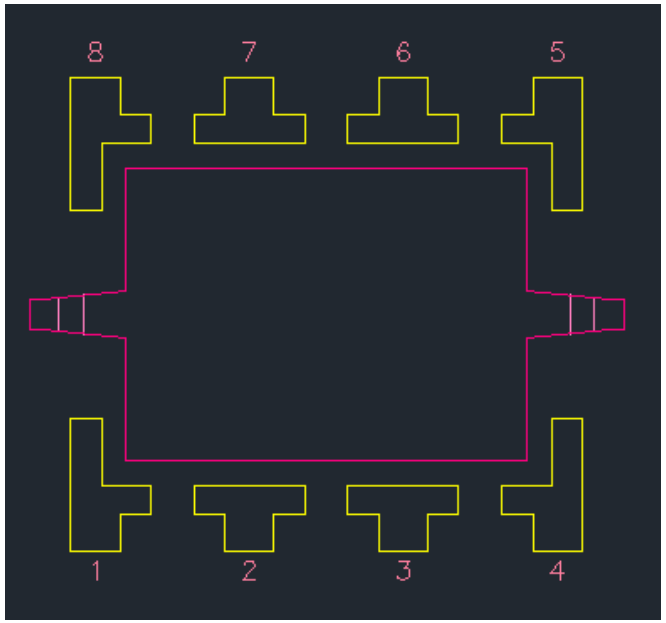


Lead-Frame Material
A194



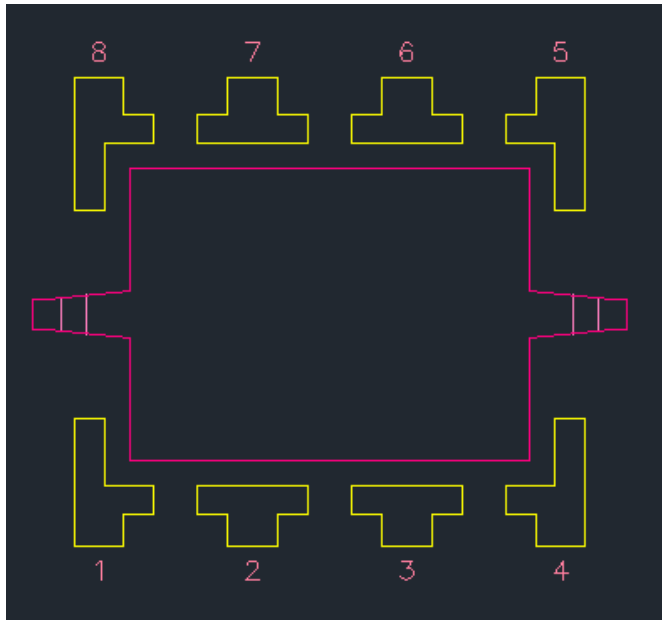
Lead-Frame Material
CDA194

UNIS



Lead-Frame Material	A194

MMT



Lead-Frame Material	CDA194

Note: C194, A194 or CDA194 Lead-Frame material are the same, it is just a MCHP internal labelling difference.

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