Product Change Notification / NTDO-14NLIX570

Date:

15-Nov-2021

Product Category:

Digital Temperature Sensors

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4911 Final Notice: Qualification of additional 68x94 mils lead frame paddle size for selected SMSC EMC10xx, EMC14xx and EMC181xT device families available in 10L MSOP (3x3 mm) package assembled at NSEB assembly site.

Affected CPNs:

NTDO-14NLIX570_Affected_CPN_11152021.pdf
NTDO-14NLIX570_Affected_CPN_11152021.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 additional 68x94 mils lead frame paddle size for selected SMSC EMC10xx, EMC14xx and EMC181xT device families available in 10L MSOP (3x3 mm) package assembled at NSEB assembly site.

Pre and Post Change Summary:

	Pre Change	Post Change

Assembly Site		UTAC Thai Limited (UTL-1) LTD (NSEB)	UTAC Thai Limited (UTL-1) LTD (NSEB)	
Wire Material		Au	Au	
Die Attach Material		8200T	8200T	
Molding Compound Material		G600	G600	
Lead-Frame	Material	C7025	C194	
	Paddle Size	82x94 mil	82x94 mil	68x94 mil
	Lead lock	No	Yes	
	Design	See Pre and Post change comparison		

Impacts to Data Sheet: None

Change Impact None

Reason for Change: To improve manufacturability by qualifying 68x94 mils lead frame paddle size.

Change Implementation Status: In Progress

Estimated First Ship Date: November 28, 2021 (date code: 2149)

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

Time Table Summary:

	November 2021				
Workweek	45	46	47	48	49
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: November 15, 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-14NLIX570_Pre_and_Post_Change_Summary.pdf
PCN_NTDO-14NLIX570_Qual_Report.pdf

Please contact your local Microchip sales office with questions or concerns regarding this notification.

Terms and Conditions:

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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.

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Affected Catalog Part Numbers (CPN)

EMC1403-2-AIZL-TR
EMC1403-4-AIZL-TR
EMC1073-1-AIZL-TR
EMC1073-A-AIZL-TR
EMC1074-1-AIZL-TR
EMC1403-1-AIZL-TR
EMC1404-2-AIZL-TR
EMC1404-3-AIZL-TR
EMC1413-1-AIZL-TR
EMC1413-A-AIZL-TR
EMC1414-3-AIZL-TR
EMC1423-1-AIZL-TR
EMC1424-1-AIZL-TR
EMC1813T-AE/UN
EMC1814T-AE/UN
EMC1046-1-AIZL-TR
EMC1047-2-AIZL-TR

CCB 4911
Pre and Post Change Summary
PCN #: NTDO-14NLIX570

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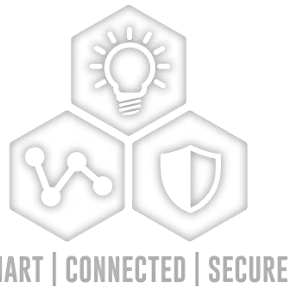
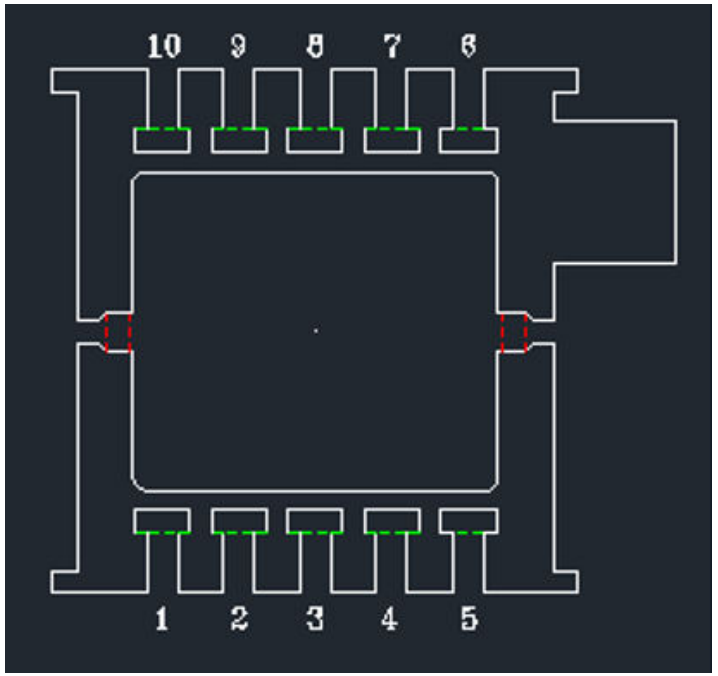


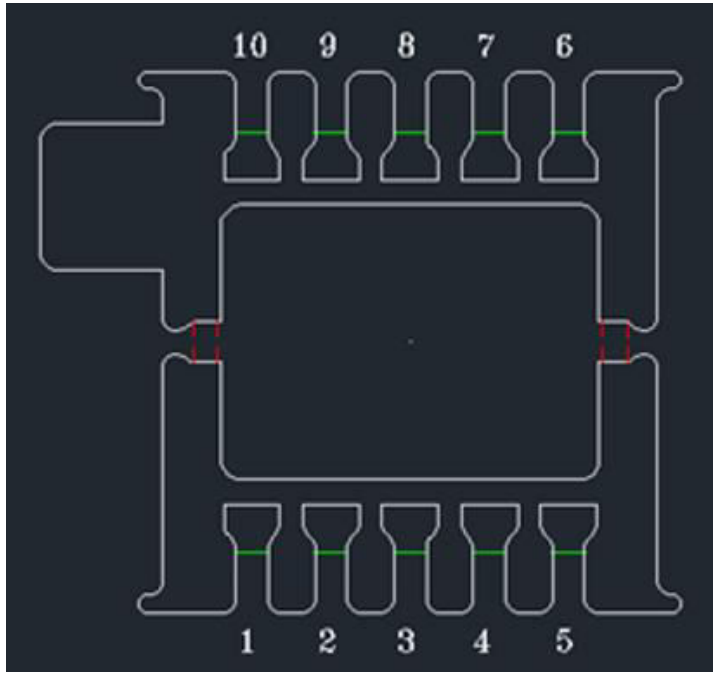
Lead Frame Comparison

Pre Change



Paddle Size	82x94 mil
Lead-lock	No

Post Change



Paddle Size	68x94 mil
Lead-lock	Yes

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QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

PCN #: NTDO-14NLIX570

Date
June 14, 2016

Qualification of 68x94 mils lead frame paddle size for HV9805MG-G catalog part number (CPN) available in 10L MSOP (3x3mm) package assembled at NSEB assembly site. The selected SMSC EMC10xx, EMC14xx and EMC181xT device families available in 10L MSOP (3x3mm) package assembled at NSEB assembly site will qualify by similarity (QBS).

PACKAGE QUALIFICATION REPORT

Purpose	**Qualification of 68x94 mils lead frame paddle size for HV9805MG-G catalog part number (CPN) available in 10L MSOP (3x3mm) package assembled at NSEB assembly site. The selected SMSC EMC10xx, EMC14xx and EMC181xT device families available in 10L MSOP (3x3mm) package assembled at NSEB assembly site will qualify by similarity (QBS).**
CCB No.	2503 and 4911
CN	BC161017
QUAL ID	Q16048 REV A
MP CODE	VABA1YE3XA00
Part No.	HV9805MG-G
Bonding No.	A-053196 Rev. B
Package	
Type	10L MSOP
Package size	3x3 mm
Lead Frame	
Paddle size	68 x 94 mils
Material	C7025
Surface	Spot Ag Plated
Process	Stamped
Lead Lock	Yes
Part Number	FM0008
Treatment	None
Die attach material	
Epoxy	2200D
Wire	Au wire
Mold Compound	G600
Plating Composition	Matte Tin

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PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
NSEB164100001.000	TSMC915451595.000	1601H4R
NSEB164100002.000	TSMC915451595.000	1601H4V
NSEB164100003.000	TSMC915451595.000	1601H55

Result [X] Pass [ ] Fail [ ] _____

10L MSOP (3x3mm) assembled by UTL (NSEB) 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-020D standard.

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
Moisture/Reflow Sensitivity Classification Test (At MSL Level 1)	85°C/ 85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH 3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243 (IPC/JEDEC J-STD-020D)	IPC/JEDEC J-STD-020D	135	0/135	Pass	

<u>Precondition Prior Perform Reliability Tests</u> (At MSL Level 1)	**Electrical Test :**+25°C System: TMT_HV_NT	JESD22-A113	693(0)	693		Good Devices
	Bake 150°C, 24 hrs System: CHINEE			693		
	85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH			693		
	3x Convection-Reflow 265°C max			693		
	System: Vitronics Soltec MR1243					
	Electrical Test :+25°C System: TMT_HV_NT			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: + 25°C System: TMT_HV_NT		231(0)	0/231	Pass	77 units / lot
	Bond Strength:		15 (0)	0/15	Pass	
	Wire Pull (> 4.0 grams)					
	Bond Shear (>20.00 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: TMT_HV_NT		231(0)	0/231	Pass	77 units / lot
HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. **Bias Volt:** 5.0 Volts System: HAST 6000X	JESD22-A110		231		Parts had been pre-conditioned at 260°C
	Electrical Test:+25°C System: TMT_HV_NT		231(0)	0/231	Pass	77 units / lot
High Temperature Storage Life	**Stress Condition:** Bake 175°C, 504 hrs System: SHEL LAB	JESD22-A103		45		45 units
	Electrical Test :+25°C System: TMT_HV_NT		45(0)	0/45	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
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 95.5Ag3.9 Cu0.6 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 (> 4.0 grams) Bond Shear (>20.00 grams)	M2011 JESD22-B116	30 (0) Wires 30 (0) bonds	0/30 0/30	Pass Pass	