Product Change Notification / KSRA-13AKNI696

Date:

26-Feb-2021

Product Category:

8-bit Microcontrollers, Capacitive Touch Sensors, Touch Controllers

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4440 Final Notice: Qualification of MMT as an additional assembly site for selected MTCH112, MTCH810 and PIC12xxxx device families available in 8L DFN (3x3x0.9mm) package.

Affected CPNs:

KSRA-13AKNI696_Affected_CPN_02262021.pdf
KSRA-13AKNI696_Affected_CPN_02262021.csv

Notification Text:

PCN Status: Final notification

PCN Type: Manufacturing Change

Microchip Parts Affected: Please open one of the icons 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 MTCH112, MTCH810 and PIC12xxxx device families available in 8L DFN (3x3x0.9mm) package.

Pre Change:
Assembled at NSEB using gold (Au) or palladium coated copper wire with gold flash (CuPdAu) bond wire, 8600 die attach material, EFTEC-64T lead frame or C194 lead frame material, Ag DAP surface prep or Bare Cu DAP surface prep and without lead lock lead frame

Post Change:
Assembled at NSEB using gold (Au) or palladium coated copper wire with gold flash (CuPdAu) bond wire, 8600 die attach

material, EFTEC-64T lead frame or C194 lead frame material, Ag DAP surface prep or Bare Cu DAP surface prep and without lead lock lead frame
or
Assembled at MMT using palladium coated copper wire with gold flash (CuPdAu) bond wire, 3280 die attach material, C194 lead frame material and Bare Cu DAP surface prep and with lead lock lead frame.

Pre and Post Change Summary:

	Pre Change		**Post Change**		
Assembly Site	UTAC Thai Limited LTD. (NSEB)		UTAC Thai Limited LTD. (NSEB)		Microchip Technology Thailand (Branch) / MMT
Wire material	Au	CuPdAu	Au	CuPdAu	CuPdAu
Die attach material	8600		8600		3280
Molding compound material	G700LTD		G700LTD		G700LTD
Lead frame material	EFTEC-64T	C194	EFTEC-64T	C194	C194
Lead Frame DAP Surface Prep	Ag	Bare Cu	Ag	Bare Cu	Bare Cu
Lead frame lead-lock	No		No		Yes
	See Pre and Post Change attachment for lead frame 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:
February 10, 2021 (date code: 2107)

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

Time Table Summary:

	November 2020					→	**January 2021**					**February 2021**			
Workweek	45	46	47	48	49		01	02	03	04	05	06	07	08	09
Initial PCN Issue Date			X												
Final PCN Issue Date											X				
Qual Report Availability															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: **November 20, 2020:** Issued initial notification. **January 29, 2021:** Issued final notification. Provided estimated first ship date to be February 10, 2021. **February 26, 2021:** Reissued final notification. Included qual report attachment and updated qual report availability.

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

Attachments:

PCN_KSRA-13AKNI696_Pre_and_Post Change Summary.pdf
PCN_KSRA-13AKNI696 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.

QUALIFICATION REPORT SUMMARY

PCN#: KSRA-13AKNI696

Date
February 04, 2021

Qualification of MMT as an additional assembly site for selected MTCH112, MTCH810 and PIC12xxxx device families available in 8L DFN (3x3x0.9mm) package.

PACKAGE QUALIFICATION REPORT

Purpose	Qualification of MMT as an additional assembly site for selected MTCH112, MTCH810 and PIC12xxxx device families available in 8L DFN (3x3x0.9mm) package.
CCB No	4440
CN	ES349377
QUAL ID	R2000923 Rev. B
MP CODE	LEBD24A7XB04
Part No.	PIC12F1822-E/MF
Bonding No.	BDM-002698 Rev. A
Package	
Type	8L DFN
Package size	3 x 3 x 0.9 mm
Lead Frame	
Paddle size	102 x 71 mils
Material	C194
Surface	Bear Cu
Process	BOT
Lead Lock	Yes
Part Number	10100851
Material	
Epoxy	3280
Wire	CuPdAu wire
Mold Compound	G700LTD
Plating Composition	Matte Sn

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PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MMT-213201463.000	TMPE221064499.400	204562M
MMT-213301391.000	TMPE221064499.400	2046GUK
MMT-213202606.000	TMPE221064499.400	2045GUJ

Result [X] Pass [ ] Fail [ ] _____

8L DFN (3x3x0.9 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
Precondition Prior Perform Reliability Tests (At MSL Level 1)	**Electrical Test:** +25°C, 85°C and 125°C System: J750	JESD22-A113	693(0)	693		Good Devices
	Bake 150°C, 24 hrs System: CHINEE	JIP/ IPC/JEDEC J-STD-020E		693		
	85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH			693		
	3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243			693		
	Electrical Test: +25°C, 85°C and 125°C System: J750			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
	Stress Condition: -65°C to +150°C, 1000 Cycles System: TABAI ESPEC TSA-70H			231		
	Electrical Test: +85°C and 125°C System: J750		231(0)	0/231	Pass	
	Bond Strength: Wire Pull (> 2.5 grams)		15 (0)	0/15	Pass	
	Bond Shear (>15.00 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: J750		231(0)	0/231	Pass	77 units / lot
	Stress Condition: +130°C/85%RH, 192 hrs. System: HAST 6000X			231		
	Electrical Test: +25°C System: J750		231(0)	0/231	Pass	
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 ,85°C and 125°C System: J750		231(0)	0/231	Pass	77 units / lot
	Stress Condition: +130°C/85%RH,192 hrs. **Bias Volt:** 5.0 Volts System: HAST 6000X			231		
	Electrical Test: + 25°C ,85°C and 125°C System: J750		231(0)	0/231	Pass	

PACKAGE QUALIFICATION REPORT

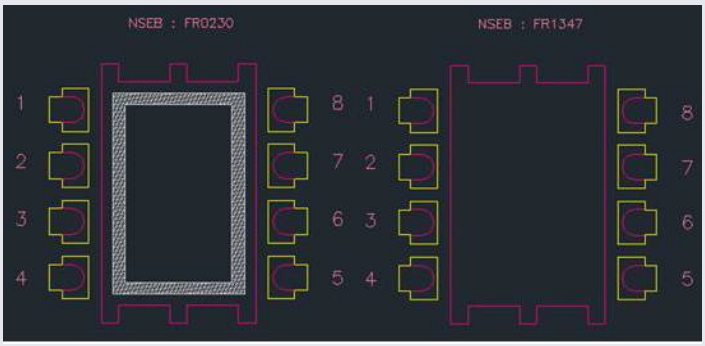
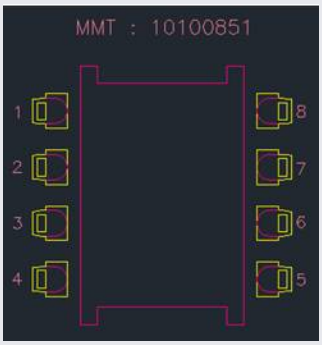
Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
High Temperature Storage Life	**Stress Condition:** Bake 175°C, 504 hrs System: SHEL LAB **Electrical Test:** +25°C, 85°C and 125°C System: J750	JESD22-A103	45 45(0)	45 0/45	 Pass	45 units
Wire sweep	Wire sweep Inspection 15 Wires / lot	-	45(0) Wires	0/45	Pass	
Bond Strength **Data Assembly**	Wire Pull (> 2.5 grams) Bond Shear (>15.00 grams)	Mil.Std. 883-2011 CDF-AEC-Q100-001	30 (0) Wires 30 (0) bonds	0/30 0/30	Pass Pass	

CCB 4440
Pre and Post Change Summary
Lead Frame Comparison
PCN#: KSRA-13AKNI696

A Leading Provider of Smart, Connected and Secure Embedded Control Solutions

Lead frame comparison

8L DFN (3x3x0.9mm)

Pre change	Post Change
NSEB	**MMT**
	
Lead frame lead-lock No	**Lead frame lead-lock** Yes

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KSRA-13AKNI696 - CCB 4440 Final N MTCH810 and PIC12xxxx device families available in 8L DFN (3x3x0.9

Affected Catalog Part Numbers(CPN)

PIC12F1822-E/MF
PIC12F1822-I/MF043
PIC12F1822-I/MF
PIC12F1822T-I/MF
PIC12F1822T-E/MF
PIC12LF1822-E/MF
PIC12LF1822-I/MF
PIC12LF1822T-I/MF
PIC12F1840-E/MF
MTCH810-I/MF
PIC12F1840-I/MF
PIC12F1840-H/MF
MTCH810T-I/MF
PIC12F1840T-I/MF
PIC12F1840T-E/MF
PIC12LF1840-E/MF
MTCH112-I/MF
PIC12LF1840-I/MF
MTCH112T-I/MF
PIC12LF1840T-I/MF
PIC12F1501-E/MF
PIC12F1501-I/MF
PIC12F1501T-E/MF
PIC12LF1501-E/MF
PIC12LF1501-I/MF
PIC12F1612-I/MF
PIC12LF1612-E/MF
PIC12F1571-E/MF
PIC12F1572-E/MF
PIC12F1571-I/MF059
PIC12F1571-I/MF
PIC12F1572-I/MF
PIC12F1571T-I/MF059
PIC12F1571T-I/MF
PIC12F1572T-I/MF
PIC12F1571T-E/MF
PIC12F1572T-E/MF
PIC12LF1571-E/MF
PIC12LF1572-E/MF
PIC12LF1571-I/MF
PIC12LF1572-I/MF
PIC12LF1572T-I/MF

PIC12LF1572T-I/MFSIS