Product Change Notification / CADA-13DJIO298

Date:

09-Feb-2023

Product Category:

16-Bit - Microcontrollers and Digital Signal Controllers

PCN Type:

Manufacturing Change

Notification Subject:

CCB 5156 Initial Notice: Qualification of C194 as an additional lead frame material for selected PIC24F16Kxx, PIC24F32Kxx, PIC24FV16Kxx and PIC24FV32Kxx device families available in 48L UQFN (6x6x0.5mm) package

Affected CPNs:

CADA-13DJIO298_Affected_CPN_02092023.pdf
CADA-13DJIO298_Affected_CPN_02092023.csv

Notification Text:

PCN Status: Initial 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 C194 as an additional lead frame material for selected PIC24F16Kxx, PIC24F32Kxx, PIC24FV16Kxx and PIC24FV32Kxx device families available in 48L UQFN (6x6x0.5mm) package.

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)	UTAC Thai Limited (UTL-1) LTD. (NSEB)
Wire Material	Au	Au	Au
Die Attach Material	8600	8600	8600
Molding Compound Material	G700LTD	G700LTD	G700LTD
Lead-Frame Material	EFTEC64T	EFTEC64T	C194

Impacts to Data Sheet: None

Change Impact None

Reason for Change: To improve manufacturability and productivity by qualifying C194 as an additional lead frame material.

Change Implementation Status: In Progress

Estimated Qualification Completion Date: April 2023

Note: Please be advised the qualification completion times may be extended because of unforeseen business conditions however implementation will not occur until after qualification has completed and a final PCN has been issued. The final PCN will include the qualification report and estimated first ship date. Also note that after the estimated first ship date guided in the final PCN customers may receive pre and post change parts.

Time Table Summary:

	June 2022					>	April 2023				
Workweek	23	24	25	26	27		14	15	16	17	18
Initial PCN Issue Date			x								
Qual Report Availability											x
Final PCN Issue Date											x

Method to Identify Change: Traceability code

Qualification Plan: Please open the attachments included with this PCN labeled as PCN_#_Qual_Plan.

Revision History: June 15, 2022: Issued initial notification.

February 9, 2023: Re-issued initial notification. Update the qual vehicle device in the Qualification Plan. Update the Estimated Qualification Completion Date from November 2022 to April 2023.

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

Attachments:

PCN_CADA-13DJIO298_Qual Plan.pdf
PCN_CADA-13DJIO298_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 PLAN SUMMARY

PC N #: CADA-13DJIO298

Date:
February 2, 2023

Qualification of C194 as an additional lead frame material for selected PIC24F16Kxx, PIC24F32Kxx, PIC24FV16Kxx and PIC24FV32Kxx device families available in 48L UQFN (6x6x0. 5mm) package.

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CCB #: 5156

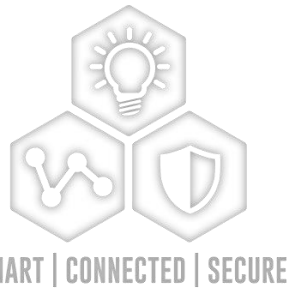
Misc.	Assembly site	NSEB
	BD Number	BD-001262 rev.01
	MP Code (MPC)	LEBE24R7XALF
	Part Number (CPN)	PIC24F32KA304-E/MV
	MSL information	MSL-1
	Assembly Shipping Media (T/R, Tube/Tray)	Tube
	Base Quantity Multiple (BQM)	61
	Reliability Site	MTAI
Lead-Frame	Paddle size	193x193 mil
	Material	C194
	DAP Surface Prep	Ag on lead only
	Exposed PAD	182x182 mil
	Treatment	No
	Process (Stamped/Etched)	Etched
	Lead-lock Design (Locking Hole, Half Etched, Dimple, etc.)	Dimple
	Part Number	FU0295
	Lead frame Thickness	5 mil
	Lead Plating	Matte Tin
	Strip Size	70x250 mm
	Strip Density	315
Bond Wire	Material	Au
Die Attach	Part Number	8600
	Conductive	Yes
MC	Part Number	G700LTD
PKG	PKG Type	UQFN
	Pin/Ball Count	48
	PKG width/size	6x6x0.5 mm

Test Name	Conditions	Reliability Stress Read Point Grade 1: -40°C to +125°C (MCHP E Temp)	Pre & Post Reliability Stress Test Temperature Grade 1: -40°C to +125°C (MCHP E Temp)	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	ATE Test Site	REL Test Site	Special Instructions
Standard Pb-free Solderability	J-STD-002D ; Perform 8 hours of steam aging for Matte tin finish and 1 hour steam aging for NiPdAu finish prior to testing. Standard Pb-free: Matte tin/ NiPdAu finish, SAC solder, wetting temp 245°C for both SMD & through hole packages.			22	5	1	27	>95% lead coverage	5		MTAI	Standard Pb-free solderability is the requirement. SnPb solderability (backward solderability- SMD reflow soldering) is required for any plating related changes and highly recommended for other package BOM changes.
Backward Solderability	J-STD-002D ; Perform 8 hour steam aging for Matte tin finish and 1 hr steam aging for NiPdAu finish prior to testing. Backward: Matte tin/ NiPdAu finish, SnPb solder, wetting temp 215°C for SMD.			22	5	1	27	>95% lead coverage	5		MTAI	
Wire Bond Pull - WBP	Mil. Std. 883-2011			5	0	1	5	0	5		NSEB	30 bonds from a min. 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001			5	0	1	5	0	5		NSEB	30 bonds from a min. 5 devices.
Physical Dimensions	Measure per JESD22 B100 and B108			10	0	3	30	0	5		NSEB	
External Visual	Mil. Std. 883-2009/2010			All devices prior to submission for qualification testing	0	3	ALL	0	5		NSEB/ MTAI	

Test Name	Conditions	Reliability Stress Read Point Grade 1: -40°C to +125°C (MCHP E Temp)	Pre & Post Reliability Stress Test Temperature Grade 1: -40°C to +125°C (MCHP E Temp)	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	ATE Test Site	REL Test Site	Special Instructions
HTSL (High Temp Storage Life)	JESD22-A103 +125°C, +150°C or +175°C	Grade 1: 500 hrs (+175°C)	Grade 1: +25°C, +85°C, +125°C	45	5	1	50	0	21 - 83	MTAI	MTAI	Spares should be properly identified.
Preconditioning - Required for surface mount devices	J-STD-020JESD22-A113+150°C Bake for 24 hours, moisture loading requirements per MSL level + 3X reflow at peak reflow temperature per Jedec-STD-020E for package type. MSL-1@260C		Grade 1: +25°C +85°C, +125°C	231+ 45	15+ 5	3	738+ 50	0	15	MTAI	MTAI	Spares should be properly identified. 77 parts from each lot to be used for HAST, uHAST, Temp Cycle test.
HAST	JESD22-A101 or A110 +130°C/85% RH for 96 hrs	Grade 1: 96 hrs (+130°C/85% RH)	Grade 1: +25°C, +85°C, +125°C	77	5	3	246	0	10 - 14	MTAI	MTAI	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
UHAST	JESD22-A102, A118, or A101 +130°C/85% RH for 96 hrs	Grade 1: 96 hrs (+130°C/85% RH)	Grade 1: +25°C	77	5	3	246	0	10	MTAI	MTAI	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
Temp Cycle	JESD22-A104 and Appendix 3 -65°C to +150°C	Grade 1: 500 cycles (-65ºC to 150ºC)	Grade 1: +85°C, +125°C	77	5	3	246	0	15 - 60	MTAI	MTAI	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.

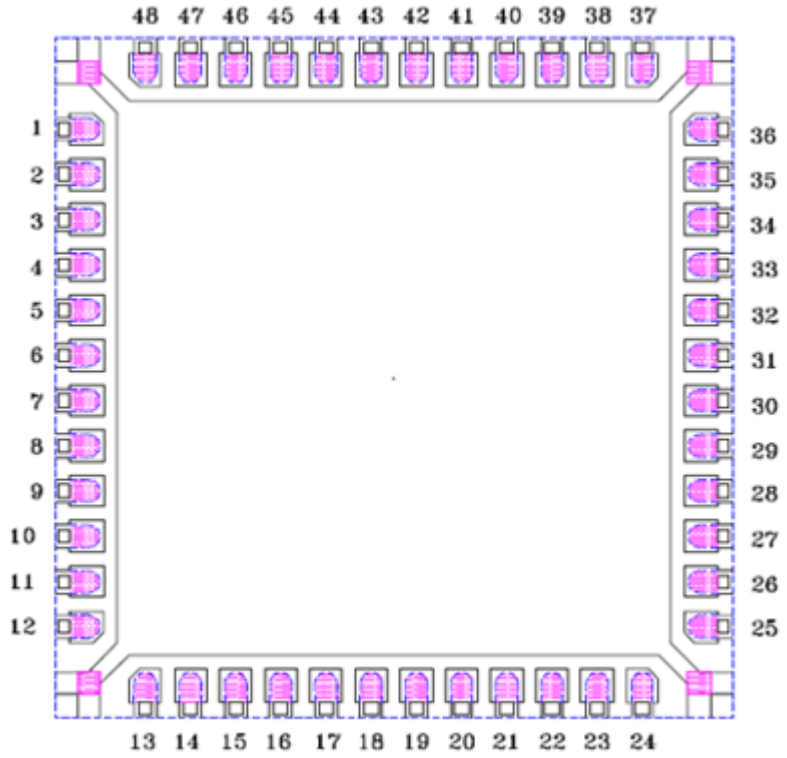
CCB 5156
Pre and Post Change Summary
PCN #: CADA-13DJIO298

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



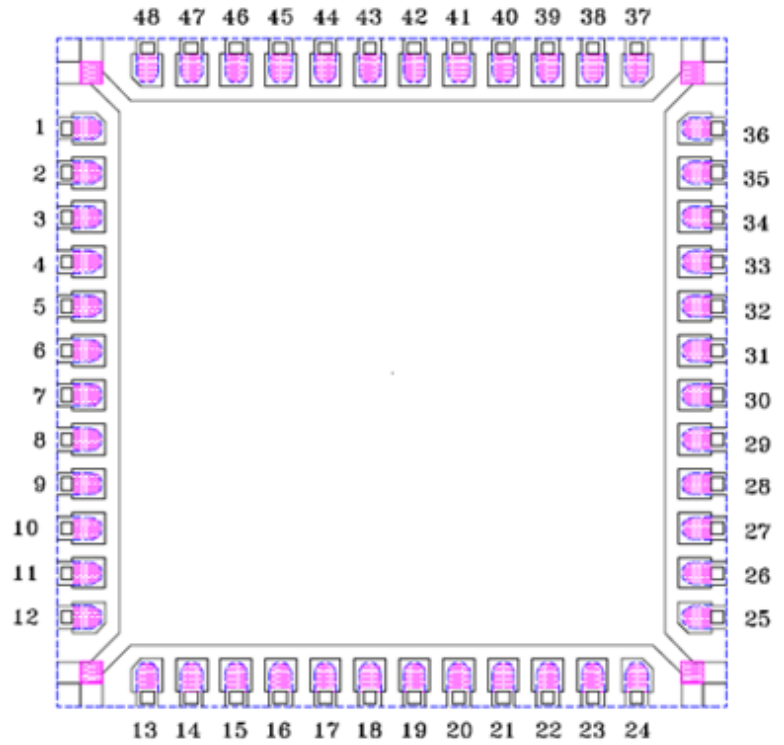
LEAD FRAME COMPARISON

EFTEC64T



Lead frame Paddle Size	193x193 mil

C194



Lead frame Paddle Size	193x193 mil

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CCB #: 5156

Misc.	Assembly site	NSEB
	BD Number	BD-001262 rev.01
	MP Code (MPC)	LEBE24R7XALF
	Part Number (CPN)	PIC24F32KA304-E/MV
	MSL information	MSL-1
	Assembly Shipping Media (T/R, Tube/Tray)	Tube
	Base Quantity Multiple (BQM)	61
	Reliability Site	MTAI
Lead-Frame	Paddle size	193x193 mil
	Material	C194
	DAP Surface Prep	Ag on lead only
	Exposed PAD	182x182 mil
	Treatment	No
	Process (Stamped/Etched)	Etched
	Lead-lock Design (Locking Hole, Half Etched, Dimple, etc.)	Dimple
	Part Number	FU0295
	Lead frame Thickness	5 mil
	Lead Plating	Matte Tin
	Strip Size	70x250 mm
	Strip Density	315
Bond Wire	Material	Au
Die Attach	Part Number	8600
	Conductive	Yes
MC	Part Number	G700LTD
PKG	PKG Type	UQFN
	Pin/Ball Count	48
	PKG width/size	6x6x0.5 mm

Test Name	Conditions	Reliability Stress Read Point Grade 1: -40°C to +125°C (MCHP E Temp)	Pre & Post Reliability Stress Test Temperature Grade 1: -40°C to +125°C (MCHP E Temp)	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	ATE Test Site	REL Test Site	Special Instructions
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Wire Bond Pull - WBP	Mil. Std. 883-2011			5	0	1	5	0	5		NSEB	30 bonds from a min. 5 devices.
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Physical Dimensions	Measure per JESD22 B100 and B108			10	0	3	30	0	5		NSEB	
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