Product Change Notification / LIAL-25APCS160

Date:

29-Jul-2021

Product Category:

Linear Op Amps, Linear Regulators, Switching Regulators

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4779 Final Notice: Qualification of C194 lead frame with Ag on lead only die attach paddle (DAP) surface prep material for TC130xA, TC130xB, MCP6x2, MCP1612 and MCP1726 device families available in 8L DFN (3x3x0.9mm) package at NSEB assembly site.

Affected CPNs:

LIAL-25APCS160_Affected_CPN_07292021.pdf
LIAL-25APCS160_Affected_CPN_07292021.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 C194 lead frame with Ag on lead only die attach paddle (DAP) surface prep material for TC130xA, TC130xB, MCP6x2, MCP1612 and MCP1726 device families available in 8L DFN (3x3x0.9mm) package 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	8600	8600
Molding compound material	G700LTD	G700LTD
Lead frame material	EFTEC-64T	C194
Lead frame die attach paddle (DAP) surface prep material	Ag ring	Ag on lead only
	See Pre and Post Change attachment for lead frame comparison	

Impacts to Data Sheet: None

Change Impact: None

Reason for Change: To improve manufacturability by qualifying C194 lead frame with Ag on lead only die attach paddle (DAP) surface prep material.

Change Implementation Status: In Progress

Estimated First Ship Date: August 25, 2021(date code: 2135)

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

Time Table Summary:

	July 2021					**August 2021**				
Workweek	27	28	29	30	31	32	33	34	35	36
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:July 29, 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_LIAL-25APCS160_Qual Report.pdf
PCN_LIAL-25APCS160_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.

Affected Catalog Part Numbers (CPN)

MCP1612-ADJI/MF
MCP1612T-ADJI/MF
TC1301A-AAAVMF
TC1301A-ADAVMF
TC1301A-AHAVMF
TC1301A-APAVMF
TC1301A-DFAVMF
TC1302A-DTVMF
TC1301A-EDAVMF
TC1301A-EFAVMF
TC1301A-EGAVMF
TC1301A-FDAVMF
TC1301A-FEAVMF
TC1302A-FFVMF
TC1301A-FFAVMF
TC1301A-FFEVMF
TC1301A-FGAVMF
TC1301A-FHAVMF
TC1301A-FSAVMF
TC1302A-HPVMF
TC1302A-IAVMF
TC1302A-IPVMF
TC1301A-NICVMF
TC1301A-NSBVMF
TC1301A-PGAVMF
TC1301A-PHEVMF
TC1301A-SFAVMF
TC1301A-SGBVMF
TC1301A-SSBVMF
TC1301A-UFEVMF
TC1301A-UHAVMF
TC1301A-UPBVMF
TC1301A-UWFVMF
TC1302A-ISVMF
TC1301A-AAAVMFTR
TC1301A-ADAVMFTR
TC1301A-AHAVMFTR
TC1301A-APAVMFTR
TC1301A-DFAVMFTR
TC1302A-DTVMFTR
TC1301A-EDAVMFTR
TC1301A-EFAVMFTR
TC1301A-EGAVMFTR
TC1301A-FDAVMFTR
TC1301A-FEAVMFTR
TC1302A-FFVMFTR

TC1301A-FFAVMFTR

TC1301A-FFEVMFTR

TC1301A-FGAVMFTR

TC1301A-FHAVMFTR

TC1301A-FSAVMFTR

TC1302A-HPVMFTR

TC1302A-IAVMFTR

TC1302A-IPVMFTR

TC1302A-ISVMFTR

TC1301A-NICVMFTR

TC1301A-NSBVMFTR

TC1301A-PGAVMFTR

TC1301A-PHEVMFTR

TC1301A-SFAVMFTR

TC1301A-SGBVMFTR

TC1301A-SSBVMFTR

TC1301A-UFEVMFTR

TC1301A-UHAVMFTR

TC1301A-UPBVMFTR

TC1301A-UWFVMFTR

TC1302B-AFVMF

TC1301B-AIAVMF

TC1301B-APAVMF

TC1301B-CCAVMF

TC1301B-DAAVMF

TC1301B-DDAVMF

TC1302B-DPVMF

TC1301B-DPAVMF

TC1302B-DRVMF

TC1302B-DSVMF

TC1302B-DTVMF

TC1301B-EDAVMF

TC1301B-EFAVMF

TC1301B-EGAVMF

TC1302B-EIVMF

TC1301B-FAAVMF

TC1301B-FDAVMF

TC1301B-FEAVMF

TC1302B-FFVMF

TC1301B-FFAVMF

TC1301B-FGAVMF

TC1301B-FHAVMF

TC1302B-FPVMF

TC1302B-FSVMF

TC1301B-FSAVMF

TC1302B-FTVMF

TC1301B-GABVMF

TC1302B-GDVMF

TC1301B-GDDVMF

TC1301B-GFDVMF

TC1301B-GGDVMF

TC1302B-GPVMF

TC1301B-GPDVMF

TC1301B-GWDVMF

TC1301B-HOEVMF

TC1302B-HPVMF

TC1301B-HPEVMF

TC1301B-HWEVMF

TC1302B-IAVMF

TC1302B-ICVMF

TC1301B-IECVMF

TC1302B-IPVMF

TC1302B-PFVMF

TC1302B-PHVMF

TC1302B-SDVMF

TC1301B-UPBVMF

TC1301B-UPFVMF

TC1301B-UUAVMF

TC1301B-UWFVMF

TC1302B-AFVMFTR

TC1301B-AIAVMFTR

TC1301B-APAVMFTR

TC1301B-CCAVMFTR

TC1301B-DAAVMFTR

TC1301B-DDAVMFTR

TC1302B-DPVMFTR

TC1301B-DPAVMFTR

TC1302B-DRVMFTR

TC1302B-DSVMFTR

TC1302B-DTVMFTR

TC1301B-EDAVMFTR

TC1301B-EFAVMFTR

TC1301B-EGAVMFTR

TC1302B-EIVMFTR

TC1301B-FAAVMFTR

TC1301B-FDAVMFTR

TC1301B-FEAVMFTR

TC1302B-FFVMFTR

TC1301B-FFAVMFTR

TC1301B-FGAVMFTR

TC1301B-FHAVMFTR

TC1302B-FPVMFTR

TC1302B-FSVMFTR

TC1301B-FSAVMFTR

TC1302B-FTVMFTR

TC1301B-GABVMFTR

TC1302B-GDVMFTR

TC1301B-GDDVMFTR

TC1301B-GFDVMFTR
TC1301B-GGDVMFTR
TC1302B-GPVMFTR
TC1301B-GPDVMFTR
TC1301B-GWDVMFTR
TC1301B-HOEVMFTR
TC1302B-HPVMFTR
TC1301B-HPEVMFTR
TC1301B-HWEVMFTR
TC1302B-IAVMFTR
TC1302B-ICVMFTR
TC1301B-IECVMFTR
TC1302B-IPVMFTR
TC1302B-PFVMFTR
TC1302B-PHVMFTR
TC1302B-SDVMFTR
TC1301B-UPBVMFTR
TC1301B-UPFVMFTR
TC1301B-UUAVMFTR
TC1301B-UWFVMFTR
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MCP1726-1202E/MF
MCP1726-1802E/MF
MCP1726-2502E/MF
MCP1726-3002E/MF
MCP1726-3302E/MF
MCP1726-5002E/MF
MCP1726-ADJE/MF
MCP1726T-0802E/MF
MCP1726T-1202E/MF
MCP1726T-1802E/MF
MCP1726T-2502E/MF
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MCP1726T-3302E/MF
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MCP652-E/MF
MCP652T-E/MF
MCP632-E/MF
MCP632T-E/MF
MCP662-E/MF
MCP662T-E/MF

QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN#: LIAL-25APCS160

Date

June 24, 2020

Qualification of C194 lead frame with Ag on lead only die attach paddle (DAP) surface prep material for TC130xA, TC130xB, MCP6x2, MCP1612 and MCP1726 device families available in 8L DFN (3x3x0.9mm) package at NSEB assembly site. This is a qualification by similarity (QBS) and a Q100 grade 1 and grade 3 qualification.

PACKAGE QUALIFICATION REPORT

Purpose	Qualification of C194 lead frame with Ag on lead only die attach paddle (DAP) surface prep material for TC130xA, TC130xB, MCP6x2, MCP1612 and MCP1726 device families available in 8L DFN (3x3x0.9mm) package at NSEB assembly site. This is a qualification by similarity (QBS) and a Q100 grade 1 and grade 3 qualification.
CN	ES338790-38410
QUAL ID and Rev	R2000223 Rev A
MP CODE	59B0Q4A7XFB4
Part No.	PIC16F15214-E/MF
Bonding No.	BDE-006170 Rev. 01
CCB No.	4779 and 4192
Package	
Type	8L DFN
Package size	3x3x0.9 mm
Lead Frame	
Paddle size	71x102 mils
Material	C194
Surface	Bare copper
Process	Etched
Lead Lock	No
Part Number	FR1347
Material	
Epoxy	8600
Wire	Au
Mold Compound	G700LTD
Plating Composition	Matte Tin

PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer lot No.	Date Code
NSEB210100423.000	GRSM420363016.300	2014K24
NSEB210100424.000	GRSM420363016.300	2014K26
NSEB210100425.000	GRSM420363016.300	2014K27

Result [X] Pass [ ] Fail [ ] ____________________

8L DFN (3x3x0.9 mm) assembled by 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-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 Bake 150°C, 24 hrs System: CHINEE 85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH 3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243 **Electrical Test:** +25°C, 85°C and 125°C System: J750	JESD22-A113 JIP/ IPC/JEDEC J-STD-020E	693(0)	693 693 693 693 693 0/693	**Pass**	Good Devices
Temp Cycle	**Stress Condition:** -65°C to +150°C, 500 Cycles System: TABAI ESPEC TSA-70H **Electrical Test:** +85°C and 125°C System: J750 **Bond Strength:** Wire Pull (> 2.5 grams) Bond Shear (>15.00 grams)	JESD22A104	231(0) 15 (0) 15 (0)	231 0/231 0/15 0/15	Pass Pass Pass	Parts had been pre-conditioned at 260°C 77 units / lot
UNBIASED-HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. System: HAST 6000X **Electrical Test:** +25°C System: J750	JESD22A118	231(0)	231 0/231	Pass	Parts had been pre-conditioned at 260°C 77 units / lot
HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. **Bias Volt:** 5.5 Volts System: HAST 6000X **Electrical Test:** +25°C, 85°C and 125°C System: J750	JESD22A110	231(0)	231 0/231	Pass	Parts had been pre-conditioned at 260°C 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	JESD22A 103		45		45 units
	Electrical Test: +25°C, 85°C and 125°C System: J750		45(0)	0/45	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)	22 22 0/22	Pass	
Physical Dimensions	Physical Dimension, 10 units from 1 lot	JESD22-B100/B108	30(0) Units	0/30	Pass	
Bond Strength Data Assembly	Wire Pull (> 3.00 grams)	M2011	30 (0) Wires	0/30	Pass	
	Bond Shear (>13.00 grams)	JESD22B116	30 (0) bonds	0/30	Pass	

CCB 4779
Pre and Post Change Summary
PCN#: LIAL-25APCS160

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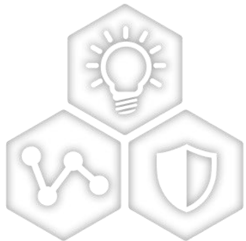
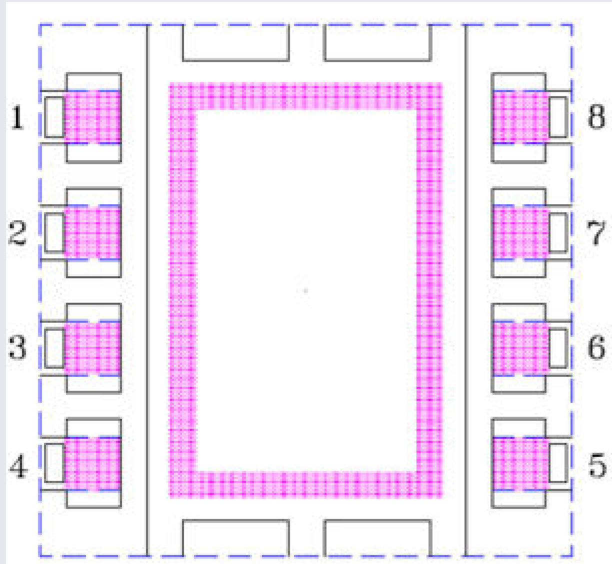
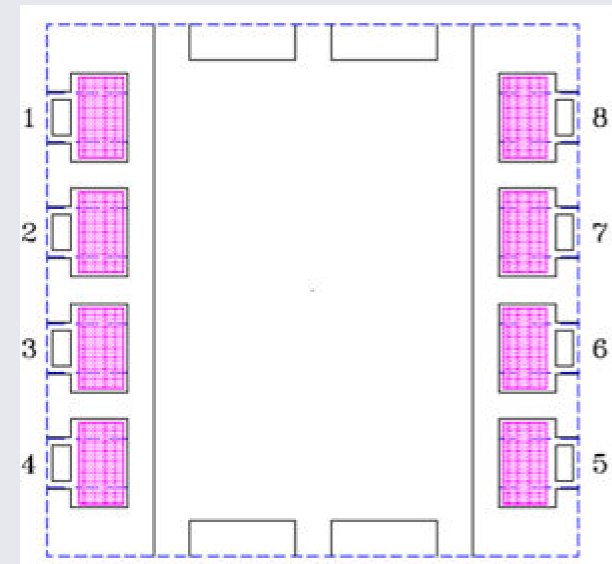


Lead frame comparison

Pre Change	Post change
NSEB	NSEB



Lead frame material	EFTEC-64T
Lead frame DAP surface prep	Ag ring



Lead frame material	C194
Lead frame DAP surface prep	Ag on lead only

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