



Product Change Notification / LIAL-18EJTL948

Date:

24-May-2022

Product Category:

Switching Regulators

PCN Type:

Manufacturing Change

Notification Subject:

CCB 5082 Initial Notice: Qualification of ATP7 as an additional assembly site for selected MIC28514, MIC28515, MIC28516, and MIC28517 device families available in 32L VQFN (6x6x0.9mm) package.

Affected CPNs:

[LIAL-18EJTL948_Affected_CPN_05242022.pdf](#)

[LIAL-18EJTL948_Affected_CPN_05242022.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 ATP7 as an additional assembly site for selected MIC28514, MIC28515, MIC28516, and MIC28517 device families available in 32L VQFN (6x6x0.9mm) package.

Pre and Post Change Summary:

	Pre Change	Post Change	
Assembly Site	ASE Inc.	ASE Inc.	Amkor Technology

	(ASE)		(ASE)		Philippines (P3/P4), INC. (ATP7)
Wire Material	CuPdAu		CuPdAu		CuPdAu
Die Attach Material 1	CDF625P8C8		CDF625P8C8		DAF CDF215
Die Attach Material 2 and 3	84-1LMISR4		84-1LMISR4		DAF CDF215
Molding Compound Material	EME-G631 H	EME-G700L A	EME-G631H	EME-G700L A	G631BQ Type F
Lead-Frame Material	C194		C194		C19400 FH
	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 ATP7 as an additional assembly site

Change Implementation Status:In Progress

Estimated Qualification Completion Date:November 2022

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:

	May 2022					->	November 2022				
Workweek	1 9	2 0	2 1	2 2	2 3		4 5	4 6	4 7	4 8	4 9
Initial PCN Issue Date				x							
Qual Report Availability							x				
Final PCN Issue							x				



QUALIFICATION PLAN SUMMARY

PCN#: LIAL-18EJTL948

May 12, 2022

Qualification of ATP7 as an additional assembly site for selected MIC28514, MIC28515, MIC28516, and MIC28517 device families available in 32L VQFN (6x6x0.9mm) package. This is a Q006 automotive grade 1 qualification.

Purpose: Qualification of ATP7 as an additional assembly site for selected MIC28514, MIC28515, MIC28516, and MIC28517 device families available in 32L VQFN (6x6x0.9mm) package. This is a Q006 automotive grade 1 qualification.

<u>Misc.</u>	Assembly site	ATP7
	BD Number	BD-000620-01
	MP Code (MPC)	35044YPHAVA1
	Part Number (CPN)	MIC28515T-E/PHAVAO
	MSL information	MSL1
	Assembly Shipping Media (T/R, Tube/Tray)	Tube
	Base Quantity Multiple (BQM)	3300
	Reliability Site	MTAI
	CCB	5082
<u>Lead-Frame</u>	Paddle size	193X95
	Material	C19400 FH
	DAP Surface Prep	SELECTIVE PLATING
	Treatment	ROUGHENED
	Process	ETCHED
	Lead-lock (With Locking Holes)	No
	Part Number	101422226
	Lead Plating	Matte Sn
	Strip Size	250X70mm
	Strip Density	TBD
<u>Bond Wire</u>	Material	CuPdAu
<u>Die 1 Attach</u>	Part Number	DAF CDF215
	Conductive	Yes
<u>Die 2 and 3 Attach</u>	Part Number	DAF CDF215
	Conductive	Yes
<u>Mold Compound</u>	Part Number	G631BQ Type F
<u>PKG</u>	PKG Type	VQFN
	Pin/Ball Count	32
	PKG width/size	6x6x0.9mm

Test Name	Conditions	Reliability Stress Read Point	Pre & Post Reliability Stress Test Temperature	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	MTAI	Standard Pb-free solderability is the requirement.
Wire Bond Pull - WBP	Mil. Std. 883-2011			5	0	1	5	0 fails after TC	5	MTAI	MTAI	30 bonds from a min. 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001			5	0	1	5	0	5	MTAI	MTAI	30 bonds from a min. 5 devices.
Physical Dimensions	Measure per JESD22 B100 and B108			10	0	3	30	0	5	MTAI	MTAI	
External Visual	Mil. Std. 883-2009/2010			All devices prior to submission for qualification testing	0	3	ALL	0	5	MTAI	MTAI	
HTSL (High Temp Storage Life)	JESD22-A103 +125°C, +150°C or +175°C 2x Stress	<u>1st Readpoint:</u> Grade 1: 500 hrs (+175°C) or 1000 hrs (150°C) <u>2nd Readpoint:</u> Grade 1: 1000 hrs (+175°C) or 2000 hrs (150°C)	Grade 1: +25°C,	45	5	3	150	0	21 - 167	MTAI	MTAI	Perform per the requirements in AEC-Q100/Q101. Spares should be properly identified.

Test Name	Conditions	Reliability Stress Read Point	Pre & Post Reliability Stress Test Temperature	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
Preconditioning - Required for surface mount devices	J-STD-020 JESD22-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.		Grade 1: +25°C	231 + 45 (for devices requiring PTC)	15 + 5 (for devices requiring PTC)	3	738 + 50 (for devices requiring PTC)	0	15	MTAI	MTAI	
HAST	JESD22-A101 or A110 +130°C/85% RH for 96 hrs or +110°C/85%RH for 264 hrs 2x Stress	<u>1st Readpoint:</u> Grade 1: 96 hrs (+130°C/85% RH) or 264 hrs (+110°C/85%RH) <u>2nd Readpoint:</u> Grade 1: 192 hrs (+130°C/85% RH) or 528 hrs (+110°C/85%RH)	Grade 1: +25°C, +125°C	77	5	3	246	0	10 - 22	MTAI	MTAI	
uHAST	JESD22-A102, A118, or A101 +130°C/85% RH for 96 hrs or +110°C/85% RH for 264 hrs	Grade 1: 96 hrs (+130°C/85% RH) or 264 hrs (+110°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 -55°C to +125°C, -55°C to +150°C or -65°C to +150°C 2x Stress	<u>1st Readpoint:</u> Grade 1: 1000 cycles (-55°C to +150°C) or 500 cycles (-65°C to 150°C) <u>2nd Readpoint:</u> Grade 1: 2000 cycles (-55°C to +150°C) or 1000 cycles (-65°C to 150°C)	Grade 1: +125°C	77	5	3	246	0	15 - 120	MTAI	MTAI	Perform per the requirements in AEC-Q006. Spares should be properly identified. Use the parts which have gone through Pre-conditioning.

Test Name	Conditions	Reliability Stress Read Point	Pre & Post Reliability Stress Test Temperature	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
Power Temperature Cycling (For devices requiring PTC)	JESD22-A105 -40°C to +150°C, -40°C to +125°C or -40°C to +105°C 2x Stress	1st Readpoint: Grade 1: 1000 cycle (-40°C to +125°C) 2nd Readpoint: Grade 1: 2000 cycle (-40°C to +125°C)	Grade 1: +25°C, +125°C	45	5	1	50			MTAI	MTAI	Spares should be properly identified. PC before PTC for surface mount devices.

CCB 5082
Pre and Post Change Summary
PCN #: LIAL-18EJTL948

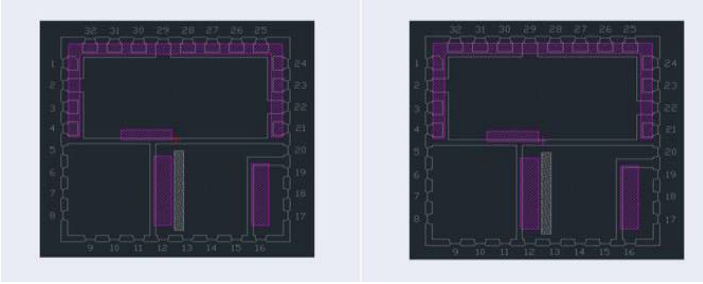
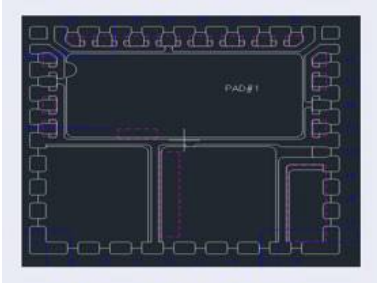


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Lead Frame Comparison

Pre Change	Post Change
	

LIAL-18EJTL948 - CCB 508 MIC28515 MIC28516 and MIC28517 device families available in 32L VQFN (6x6

Affected Catalog Part Numbers(CPN)

MIC28516T-E/PHA

MIC28516T-E/PHAVAO

MIC28517T-E/PHA

MIC28517T-E/PHAVAO

MIC28514T-E/PHA

MIC28514T-E/PHAVAO

MIC28515T-E/PHA

MIC28515T-E/PHAVAO