

Product Change Notification / LIAL-18EJTL948

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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 Cha	inge
Assembly Site	ASE Inc.	ASE Inc.	Amkor Technology

	(A	SE)	(AS	SE)	Philippines (P3/P4), INC. (ATP7)			
Wire Material	Cul	PdAu	CuPo	dAu	CuPdAu			
Die Attach Material 1	CDF62	25P8C8	CDF62	5P8C8	DAF CDF215			
Die Attach Material 2 and 3	84-11	MISR4	84-1LN	MISR4	DAF CDF215			
Molding Compound Material	EME-G631 H	EME-G700L A	EME-G631H	EME-G700L A	G631BQ Type F			
Lead-Frame	C	194	C19	94	C19400 FH			
Material	Sec	See pre and post change attachment for lead frame comparison						

Impacts to Data Sheet:None

Change ImpactNone

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	2 1	2	2		4 5	4 6	4 7	4 8	4 9
Initial PCN Issue Date				х							
Qual Report Availability							х				
Final PCN Issue							х				

Method to Identify Change:Traceability Code

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

Revision History:May 24, 2022: Issued initial 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-18EJTL948_Pre and Post Change Summary.pdf PCN_LIAL-18EJTL948 Qual Plan.pdf

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

Terms and Conditions:

If you wish to <u>receive Microchip PCNs via email</u> please register for our PCN email service at our <u>PCN</u> home page select register then fill in the required fields. You will find instructions about registering for Microchips PCN email service in the <u>PCN FAQ</u> section.

If you wish to <u>change your PCN profile, including opt out,</u> please go to the <u>PCN home page</u> 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

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.

	Assembly site	ATP7				
	BD Number	BD-000620-01				
	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) Base Quantity Multiple (BQM) Reliability Site MTAI CCB 5082 Paddle size 193X95 Material C19400 FH DAP Surface Prep SELECTIVE PLATING Treatment ROUGHENED Process ETCHED Lead-lock (With Locking Holes) Part Number 101422226 Lead Plating Matte Sn Strip Size 250X70mm Strip Density TBD Wire Material CuPdAu DAF CDF215 Conductive Yes Part Number DAF CDF215 Conductive Yes Mappound Part Number G631BQ Type F	35044YPHAVA1				
		MIC28515T-E/PHAVAO				
Misc.						
<u>iviisc.</u>	(T/R, Tube/Tray)	BD-000620-01 35044YPHAVA1 N) MIC28515T-E/PHAVAO MSL1 Tube ultiple 3300 MTAI 5082 193X95 C19400 FH P SELECTIVE PLATING ROUGHENED ETCHED .ocking No 101422226 Matte Sn 250X70mm TBD CuPdAu DAF CDF215 Yes G631BQ Type F VQFN 32				
		3300				
	Reliability Site	MTAI				
	CCB	5082				
	Paddle size	193X95				
	Material	C19400 FH				
	DAP Surface Prep	SELECTIVE PLATING				
	Treatment	ROUGHENED				
	Process	ETCHED				
<u>Lead-Frame</u>		No				
	Part Number	101422226				
	Lead Plating	Matte Sn				
	Strip Size	250X70mm				
	Strip Density	TBD				
Bond Wire	Material	CuPdAu				
Die 1 Attach	Part Number	DAF CDF215				
DIE I ALIACII	Strip Size Strip Density Tre Material Part Number Conductive	Yes				
Die 2 and 3 Attach	Part Number	DAF CDF215				
DIO Z ANG O AGAON	Conductive	Yes				
Mold Compound	Part Number	G631BQ Type F				
	PKG Type	VQFN				
<u>PKG</u>	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 coverag e	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	1st Readpoint: Grade 1: 500 hrs (+175°C) or 1000 hrs (150°C) 2nd Readpoint: 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 requirin g 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	1st Readpoint;) Grade 1: 96 hrs (+130°C/85% RH) or 264 hrs (+110°C/85%RH) 2nd Readpoint: 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 Preconditioning.
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	1st Readpoint: Grade 1: 1000 cycles (-55°C to +150°C) or 500 cycles (-65°C to 150°C) 2nd Readpoint: 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 Preconditioning.

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





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