

### Product Change Notification / ALAN-18ICJA641

# Date:

20-Apr-2023

# **Product Category:**

8-bit Microcontrollers, Capacitive Touch Sensors

# PCN Type:

Manufacturing Change

# **Notification Subject:**

CCB 6236 Final Notice: Qualification of ANAP as an additional assembly site for ATMEGAxx, QT60168xx, ATTINY8xx, AT42QT11xx, AT89LP42xx, and AT42QT12xx device families available in 32L TQFP (7x7x1mm) package.

# Affected CPNs:

ALAN-18ICJA641\_Affected\_CPN\_04202023.pdf ALAN-18ICJA641\_Affected\_CPN\_04202023.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 ANAP as an additional assembly site for ATMEGAxx, QT60168xx, ATTINY8xx, AT42QT11xx, AT89LP42xx, and AT42QT12xx device families available in 32L TQFP (7x7x1mm) package.

#### Pre and Post Change Summary:

		Pre Change				Post Change					
Assembly Site		Lings Precis Industrie (LP	sen sion es, LTD. I)	Microchip Technology Thailand (HQ) (MTAI)		Lingsen Precision Industries, LTD. (LPI)		Microchip Technology Thailand (HQ) (MTAI)		Amkor Technology Philippine (P1/P2), INC. (ANAP)	
Wire N	Material	CuPdAu	Au	CuPdAu	Au	CuPdAu	Au	CuPdAu	Au	AuPd	
Die Attac	h Material	CRM-10	)33BF	328	C	CRM-10	33BF	3280		3230	
Molding Compound Material		G700		G700HA		G700		G700HA		G700L	
	Lead-Frame Material	C7025		C702	25	C7025		C7025		C194	
Lead Frame	Lead-Frame Paddle Size	205X205		160X160		205X205		160X160		197x197 mil	
	DAP Surface Prep	DOUBLE	DOUBLE RING		Cu	DOUBLE RING		BARE Cu		DOUBLE RING	
			Plea	se see Pre a	and Pos	ist change for comparison					
N	1SL	MSL	3	MSL	1	MSL3		MSL1		MSL3	
T	ray	Bakea	able	Non-bak	eable	Bakeable		Non-bak	eable	Bakeable	

Impacts to Data Sheet:None

Change ImpactNone

**Reason for Change:**To improve manufacturability by qualifying MMT as an additional assembly site.

Change Implementation Status: In Progress

Estimated First Ship Date: May 10, 2023 (date code: 2319)

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

Time Table Summary:

	April 2023				May 2023					
Workweek	1	1	1	1	1	1	2	2	2	

	4	5	6	7	8	9	0	1	2
Qual Report Availability			Х						
Final PCN Issue Date			Х						
Estimated Implementation Date						Х			

Method to Identify Change: Traceability code

**Qualification Report:**Please open the attachments included with this PCN labeled as PCN\_#\_Qual\_Report.

Revision History: April 20, 2023: 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\_ALAN-18ICJA641\_Pre and Post Change\_Summary.pdf PCN\_ALAN-18ICJA641\_Qual Report.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 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 <u>change your PCN profile</u>, <u>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.

# CCB 6236 Pre and Post Change Summary PCN# ALAN-18ICJA641





# **Pre and Post Change Summary**

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	$29 \ 28 \ 27 \ 26 \ 25 \ 24 \ 23 \ 22 \ 21 \ 20 \ 19 \ 18 \ 17 \ 2 \ 13 \ 14 \ 15 \ 16 \ 16 \ 17 \ 17 \ 17 \ 17 \ 17 \ 17$		28 $27$ $26$ $25242322212019181713$ $14$ $15$ $16$		
Wire Material	CuPdAu / Au	Wire Material	CuPdAu / Au	Wire Material	AuPd
Die Attach Material	CRM-1033BF	Die Attach Material	3280	Die Attach Material	3230
Mold Compound Material	G700	Mold Compound Material	G700HA	Mold Compound Material	G700L
	2052205	Paddle Size	160X160	Paddle Size	197x197 mil
Paddle Size	203/203				





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Affected Catalog Part Numbers (CPN)

ATMEGA8A-AU744 ATMEGA8-16AURA0 QT60168C-ASG ATMEGA8L-8AURA2 ATTINY88-AU ATTINY88-AUR AT42OT1110-AUR ATMEGA88PA-AN ATMEGA88PA-ANR ATMEGA168PA-AN ATMEGA168PA-ANR ATMEGA8A-AN ATMEGA8A-ANR ATMEGA328P-AN ATMEGA328P-ANR ATMEGA48PA-AN ATMEGA48PA-ANR ATMEGA48PA-AURB0 ATTINY828-AU ATTINY828R-AU ATTINY828-AUR ATTINY828R-AUR QT60168-ASG AT89LP428-20AU ATMEGA168P-20AU ATMEGA168PV-10AU ATMEGA168P-20AN ATMEGA168PV-10AN ATMEGA168P-20ANR ATMEGA168P-20AUR ATMEGA168PV-10AUR ATMEGA88P-20AU ATMEGA88PV-10AU AT42QT1244-AU AT42QT1245-AU ATMEGA88PV-10AUR ATMEGA88P-20AUR AT42QT1244-AUR AT42QT1245-AUR ATMEGA48PV-10AU ATMEGA48P-20AU ATMEGA48PV-10AUR ATMEGA48P-20AUR



QUALIFICATION REPORT SUMMARY RELIABILITY LABORATORY

# PCN# ALAN-18ICJA641

Date: July 4, 2021

Qualification of ANAP as an additional assembly site for ATMEGAxx, QT60168xx, ATTINY8xx, AT42QT11xx, AT89LP42xx, and AT42QT12xx device families available in 32L TQFP (7x7x1mm) package.



 Purpose: Qualification of ANAP as an additional assembly site for ATMEGAxx, QT60168xx, ATTINY8xx, AT42QT11xx, AT89LP42xx, and AT42QT12xx device families available in 32L TQFP (7x7x1mm) package.
CCB# 6236 and 4312

	Assembly site	ANAP (ATP)				
	BO Number	BDM-002654A				
Misc.	MP Code (MPC)	354TOYT5XC05				
Misc.	Part Number (CPN)	ATMEGA32CI-15AZ				
	MSL information	MSL-3 @260C				
	Assembly Shipping Media (T/R, Tube/Tray)	ATP ship in Tray, MCHP ship in T/R				
	Base Quantity Multiple (BQM)	ATP= 250, MCHP= 2,000				
	Paddle size	197x197 mil				
	Material	C194				
	OAP Surface Prep	Double Ring				
	Treatment	No				
	Process	Stamped				
Lead-Frame	Lead-lock	No				
	Part Number	101386770				
	Lead Plating	Matte Tin				
	Strip Size	250x70mm				
	Strip Density	VHDLF				
Bond Wire	Material	AuPd				
	Part Number	3230				
Die Attach	Conductive	Yes				
MC	Part Number	G700L				
	PKG Type	TQFP				
Package	Pin/Ball Count	32				
_	PKG width/size	7x7x1mm				



#### **Manufacturing Information:**

Assembly Lot Number
ANAP214100002.000
ANAP214100003.000
ANAP214100004.000



VHDLF LF#101386770 with QS device in 32L TQFP 7x7x1mm at ATP is qualified the Moisture/ Reflow Sensitivity Classification Level 3 at 260°C reflow temperature per IPC/JEDEC J-STD-020E standard. Minimal Area on Die Paddle with Inverted signal. All units are passing electrical testing.

	PACKAGE QUALIFIC	ATION	REPO	DRT		
Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
Precondition Prior Perform	Electrical Test : +25°C	JESD22- A113,	693(0)			Good Devices
MSL-3 @ 260C	External Visual Inspection System: Luxo Lamp	JIP/ IPC/JEDE C J-STD- 020E	693(0)	0/693	Pass	
	<b>Bake</b> 150°C, 24 hrs System: HERAEUS		693(0)			
	<b>Moisture Soak</b> 30°C/60%RH Moisture Soak 168hrs. System: Climats Excal 5423-HE		693(0)			
	<b>Reflow</b> 3x Convection-Reflow 260°C max System: Mancorp CR.5000F		693(0)	0/693		
	Stress Condition: (Standard) -65°C to +150°C, 500 Cycles System: VOTSCH VT 7012 S2	JESD22- A104	231(0)			Parts had been pre- conditione d at 260°C
Temp Cycle	Electrical Test: +125°C		231(0)	0/231	Pass	
	<b>Bond Strength:</b> Wire Pull Bond Shear		15(0)	0/15	Pass	
UNBIASED- HAST	<b>Stress Condition:</b> (Standard) +130°C/85%RH, 96H System: HIRAYAMA HASTEST PC-422R8	JESD22- A118	231(0)			Parts had been pre- conditione d at 260°C
	Electrical Test: +25°C		231(0)	0/231	Pass	
BIASED-HAST	<b>Stress Condition:</b> (Standard) +130°C/85%RH, 96H System: HIRAYAMA HASTEST PC-422R8	JESD22- A110	231(0)			Parts had been pre- conditione d at 260°C
	Electrical Test: +25°C, +125°C		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, 500 hrs System: HERAEUS Electrical Test: +25°C +125°C	JESD22- A103	45 (0) 45 (0)	0/45	Pass				
Solderability Temp 245°C	<b>Bake:</b> Temp 155°C,4Hrs System:Oven Solder Bath: Temp.245°C	J-STD-002	22 (0)	0/22	Pass	Performed at MPHIL			
Physical Dimensions	Physical Dimension, 10 units from 3 lot	JESD22- B100/B108	30(0)	0/30	Pass				
Bond Strength Data Assembly	Wire Pull 1 lot, 30 wires from 5 units min	M2011.8 MIL-STD- 883	35(0) Wires	0/35	Pass				
Bond Strength Data Assembly	Bond Shear 1 lot, 30 bonds from 5 units min	M2011.8 MIL-STD- 883	35(0) bonds	0/35	Pass				