Product Change Notification / ALAN-04KTCS710

Date:

07-Oct-2021

Product Category:

8-bit Microcontrollers

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4764 Initial Notice: Qualification of OSE as an additional assembly site for selected ATMEL ATXMEGA128xx, ATXMEGA64xx, ATXMEGA32xx and ATXMEGA16xx device families available in 49L VFBGA (5x5x1.0mm) package.

Affected CPNs:

ALAN-04KTCS710_Affected_CPN_10072021.pdf
ALAN-04KTCS710_Affected_CPN_10072021.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 OSE as an additional assembly site for selected ATMEL ATXMEGA128xx, ATXMEGA64xx, ATXMEGA32xx and ATXMEGA16xx device families available in 49L VFBGA (5x5x1.0mm) package.

Pre and Post Change Summary:

	Pre Change	Post Change

Assembly Site		ASE Inc. (ASE)	ASE Inc. (ASE)	Orient Semiconductor Electronics, Ltd (OSE)
Substrate	Core Material	CCL-HL832NX (A-HS)	CCL-HL832NX (A-HS)	HL832NXA
	Process	Normal	Normal	Tenting
	L1/L2 Thickness	Min 12um	Min 12um	Copper 18+/-6 um, Ni 3um (min) Au 0.2um(min) OSP 0.3+/-0.15um
	SM Material	AUS 308	AUS 308	AUS 320
Bond wire		CuPd	CuPd	CuPdAu
Die attach film (DAF)		ATB125	ATB125	HR-5104
Mold compound		KE-G1250LKDS	KE-G1250LKDS	G760LB

Impacts to Data Sheet: None

Change Impact: None

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

Change Implementation Status: In Progress

Estimated Qualification Completion Date: May 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:

	October 2021					->	**May 2022**				
Workweek	40	41	42	43	44		19	20	21	22	23
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:October 7, 2021: 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_ALAN-04KTCS710_Qual_plan.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)

ATXMEGA128A4U-CU
ATXMEGA128D4-CU
ATXMEGA128A4U-CUR
ATXMEGA128D4-CUR
ATXMEGA64D4-CUR
ATXMEGA16C4-CU
ATXMEGA32C4-CU
ATXMEGA16D4-CU
ATXMEGA32D4-CU
ATXMEGA16C4-CUR
ATXMEGA32C4-CUR
ATXMEGA32D4-CUR
ATXMEGA16D4-CUR

QUALIFICATION PLAN SUMMARY

PCN#: ALAN-04KTCS710

Date:
September 30, 2021

Qualification of OSE as an additional assembly site for selected ATMEL ATXMEGA128xx, ATXMEGA64xx, ATXMEGA32xx and ATXMEGA16xx device families available in 49L VFBGA (5x5x1.0mm) package.

Purpose: **Qualification of OSE as an additional assembly site for selected ATMEL ATXMEGA128xx, ATXMEGA64xx, ATXMEGA32xx and ATXMEGA16xx device families available in 49L VFBGA (5x5x1.0mm) package.**

Misc.	Assembly site	OSE
	BD Number	BD-000234-01_49_VFBGA_C7B_OSE (OSE BD) BDPCAA4951-0011(A)
	MP Code (MPC)	359627C7BC04
	Part Number (CPN)	ATXMEGA128A4U-CU
	MSL information	MSL 3, 260C
	Assembly Shipping Media (T/R, Tube/Tray)	TRAY EAM050501A
	Base Quantity Multiple (BQM)	490
	Reliability Site	MPHIL
	CCB No.	4764
Substrate	Core Material	HL832NXA
	Core Thickness	100+/-30 um
	L1/L2 Thickness	Copper 18+/-6 um, Ni 3um (min) Au 0.2um(min) OSP 0.3+/-0.15um"
	SM Material	AUS 320
	Process	Tenting
Bond Wire	Material	CuPdAu
Die Attach	Part Number	HR-5104
	Conductive	No
MC	Part Number	G760LB
PKG	PKG Type	VFBGA
	Pin/Ball Count	49 Balls
	PKG width/size	5x5x1mm
	Solder Ball Material	98.25SN/1.2AG/0.5CU/0.05NI

Package Reliability Tests

Test Name	Conditions	Sample Size	Min. Qty of Spares per Lot	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	Special Instructions
Standard Pb-free Solderability	J-STD-002D ; Perform 8 hours steam aging for Matte tin finish and 1 hr 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	For JESD22B-102E use Surface Mount Process Simulation Test method - Board level solderability. If performed, Surface mount Process Simulation Test Method is recommended. 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.
Wire Bond Pull - WBP	Mil. Std. 883-2011	5	0	1	5	0	5	30 bonds from a min. 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001	5	0	1	5	0	5	30 bonds from a min. 5 devices.
Solder Ball Shear	JESD22B117A	5	0	3	15	0	5	10 balls/5 units. Parts should gone Preconditioning
Coplanarity	JESD22B108A/POD	5	0	3	15			All units
Physical Dimensions	Measure per JESD22 B100	10	0	3	30	0	5	
High Temperature Storage Life (HTSL)	JESD22A-103. 150°C for 1008 hours Readpoints at 0, 504, and 1008 hours. Electrical test pre and post stress at +25°C and hot temp 85C.	45	5	1 **3 (Cu wire qual)**	50 **150 (Cu wire qual)**	0	45	Spare should be properly identified. For hot temp testing, pre/post test 1 lot at 85°C 3 lots are required for Cu wire qual.

Package Reliability Tests

Test Name	Conditions	Sample Size	Min. Qty of Spares per Lot	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	Special Instructions
Preconditioning - Required for surface mount devices	+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; Electrical test pre and post stress at +25°C. MSL 3, 260C +25°C and hot temp 85C	231	15	3	738	0	15	Spares should be properly identified. 231 parts from each lot to be used for HAST, uHAST & Temp Cycle test.
HAST	JESD22A110. +110°C/85% RH for 264 hours. Electrical test pre and post stress at +25°C and hot temp 85C.	77	5	3	246	0	10	Spares should be properly identified. Use the parts which have gone through Pre-conditioning. For hot temp testing, pre/post test 1 lot at 85°C
Unbiased HAST	JESD22A110. +110°C/85% RH for 264 hours Electrical test pre and post stress at +25°C.	77	5	3	246	0	10	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
Temp Cycle	JESD22A104. -55°C to +125°C for 1000 cycles Electrical test pre and post stress at hot temp 85C. WBP, on 5 devices from 1 lot, test following Temp Cycle stress.	77	5	3	246	0	30	Spares should be properly identified. Use the parts which have gone through Pre-conditioning. For hot temp testing, pre/post test 1 lot at 85°C.