Product Change Notification / KSRA-10RJDS922

Date:

13-Jul-2021

Product Category:

8-bit Microcontrollers

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4249 Final Notice: Qualification of ASSH as a new assembly site for Atmel AT89C4051 device family available in 20L SOIC (.300in) package

Affected CPNs:

KSRA-10RJDS922_Affected_CPN_07132021.pdf
KSRA-10RJDS922_Affected_CPN_07132021.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 ASSH as a new assembly site for Atmel AT89C4051 device family available in 20L SOIC (.300in) package

Pre Change:
Assembled at LPI using palladium coated copper with gold flash (CuPdAu) and gold (Au) bond wire, CRM-1033BF die attach and G600 molding compound material.

Post Change:
Assembled at ASSH using palladium coated copper with gold flash (CuPdAu) bond wire, EN4900GC die attach and CEL9240

molding compound material.

Pre and Post Change Summary:

	Pre Change		Post Change
Assembly Site	Lingsen Precision Industries LTD. (LPI)		ASE-Shanghai (ASSH)
Wire material	CuPdAu	Au	CuPdAu
Die attach material	CRM-1033BF		EN4900GC
Molding compound material	G600		CEL9240
Lead frame material	A194		A194

Impacts to Data Sheet: None

Change Impact: None

Reason for Change: To improve manufacturability by qualifying ASSH as a new assembly site.

Change Implementation Status: In Progress

Estimated First Ship Date:
August 09, 2021 (date code: 2133)

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

Time Table Summary:

	June 2020					>	July 2021					August 2021				
Workweek	27	28	29	30	31		27	28	29	30	31	32	33	34	35	36
Initial PCN Issue Date			X													
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:June 18, 2020: Issued initial notification. **July 13, 2021:** Issued final notification. Attached is the

qualification report and added estimated first ship date by August 09, 2021.

The change described in this PCN does not alter Microchip's current regulatory compliance regarding the material content of the applicable products.

Attachments:

PCN_KSRA-10RJDS922_Qual_Report.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.

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Affected Catalog Part Numbers(CPN)

AT89C4051-24SU
AT89C4051-12SU
AT89C4051-24SUR
AT89C4051-12SUR

QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: KSRA-10RJDS922

Date:
June 29, 2021

Qualification of ASSH as a new assembly site for Atmel AT89C4051 device family available in 20L SOIC (.300in) package

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PACKAGE QUALIFICATION REPORT

Purpose	**Qualification of ASSH as a new assembly site for Atmel AT89C4051 device family available in 20L SOIC (.300in) package**
CN	ES346487
QUAL ID	R2000733 Rev. A
MP CODE	196567G5XC04
Part No.	AT89C4051-24SU
CCB No.	4249
Package	
Type	20L SOIC
Package size	300 mils
Lead Frame	
Paddle size	226 x 212 mils
Material	A194
Surface	DOUBLE RING
Process	Etched
Lead Lock	No
Part Number	LI-WMA240020-01
Treatment	None
Material	
Epoxy	EN4900GC
Wire	CuPdAu
Mold Compound	CEL9240
Plating Composition	Matte Sn

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PACKAGE QUALIFICATION REPORT

Manufacturing Information:

Assembly Lot No.	Wafer No.	Date Code
ASSH212100001.000	MCSO521058498.200	2034258
ASSH212100002.000	MCSO521058498.200	203425C
ASSH212100003.000	MCSO521058498.200	203425J

Result [X] Pass [ ] Fail [ ] _____

20L SOIC (300 mils) assembled by ASSH pass reliability test per QCI-39000. This package was qualified the Moisture/Reflow Sensitivity Classification Level 2 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 2)	**Electrical Test:** +85°C System: Maverick PT	JESD22-A113	693(0)	693		Good Devices
	Bake 150°C, 24 hrs System: CHINEE	JIP/ IPC/JEDEC J-STD-020E		693		
	85°C/60%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH			693		
	3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243			693		
	Electrical Test: +85°C System: Maverick PT			0/693	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Temp Cycle	**Stress Condition:** -65°C to +150°C, 500 Cycles System: TABAI ESPEC TSA-70H	JESD22-A104		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +85°C System: Maverick PT		231(0)	0/231	Pass	77 units / lot
	Stress Condition: -65°C to +150°C, 1000 Cycles System: TABAI ESPEC TSA-70H			231		
	Electrical Test: +85°C System: Maverick PT		231(0)	0/231	Pass	
	Bond Strength: Wire Pull (> 2.5 grams)		15 (0)	0/15	Pass	
	Bond Shear (>15.00 grams)		15 (0)	0/15	Pass	
UNBIASED-HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22-A118		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +85°C System: Maverick PT		231(0)	0/231	Pass	77 units / lot
	Stress Condition: +130°C/85%RH, 192 hrs. System: HAST 6000X			231		
	Electrical Test: +85°C System: Maverick PT		231(0)	0/231	Pass	
HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. **Bias Volt:** 5.0 Volts System: HAST 6000X	JESD22-A110		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +85°C System: Maverick PT		231(0)	0/231	Pass	77 units / lot
	Stress Condition: +130°C/85%RH,192 hrs. **Bias Volt:** 5.0 Volts System: HAST 6000X			231		
	Electrical Test: + 85°C System: Maverick PT		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, 504 hrs System: SHEL LAB **Electrical Test:** +85°C System: Maverick PT	JESD22-A103	 45(0)	45 0/45	 Pass	45 units
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 per 1 lot	JESD22-B100/B108	30(0) Units	0/30	Pass	
Bond Strength Data Assembly	Wire Pull (> 3.00 grams) Bond Shear (> 4.00 grams)	Mil. Std. 883-2011 CDF-AEC-Q100-001	30 (0) Wires 30 (0) bonds	0/30 0/30	Pass Pass	