Product Change Notification / KSRA-23RGWT440

Date:

04-Mar-2021

Product Category:

8-bit Microcontrollers, Capacitive Touch Sensors

PCN Type:

Silicon Die Revision

Notification Subject:

CCB 4509 Initial Notice: Qualification of NSEB as a new assembly site for selected ATTINY2xx, ATTINY44x, ATTINY84x and AT42QT1040 device families available in 20L VQFN (3X3X0.85mm) package

Affected CPNs:

KSRA-23RGWT440_Affected_CPN_03042021.pdf
KSRA-23RGWT440_Affected_CPN_03042021.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 NSEB as a new assembly site for selected Atmel ATTINY2xx, ATTINY44x, ATTINY84x and AT42QT1040 device families available in 20L VQFN (3X3X0.85mm) package

Pre and Post Change Summary:

	Pre Change	Post Change
Assembly Site	ASE Korea Inc. / ASKR	UTAC Thai Limited (UTL-1) LTD and (UTL-3)/ NSEB

Wire material		PdCu	CuPdAu
Die attach material	**Spacer Die**	QMI536	8600
	Top Die	EN-4900GC	HR-5104
Molding compound material		G700	G700
Lead frame material		C7025	C194
Lead frame lead plating		PPF	Matte Sn
Lead Frame DAP Surface Prep		Spot plating	Ag on lead only
Lead Frame Lead Lock		No	Yes
		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 qualifying NSEB as a new assembly site.

Change Implementation Status: In Progress

Estimated Qualification Completion Date: July 2021

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:

	March 2021					-->	**July 2021**				
Workweek	10	11	12	13	14		27	28	29	30	31
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:March 04, 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_KSRA-23RGWT440_Pre and Post Change Summary.pdf
PCN_KSRA-23RGWT440_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.

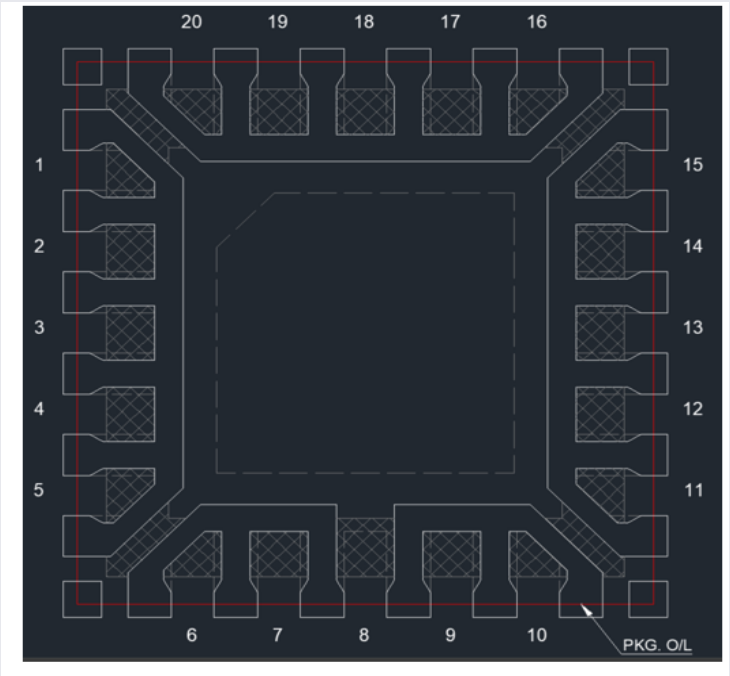
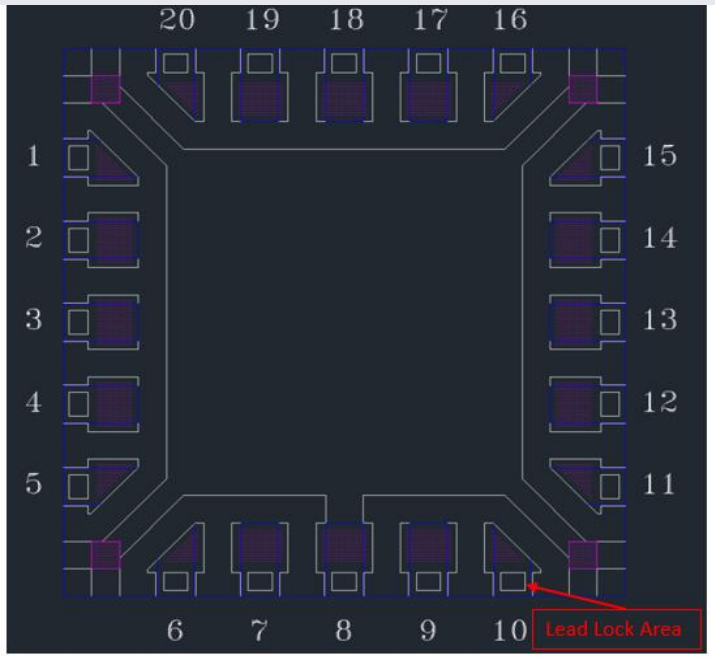
Affected Catalog Part Numbers (CPN)

ATTINY24A-MM8
ATTINY24A-MM8R
ATTINY24A-MMH
ATTINY24A-MMHR
ATTINY24A-MMH
ATTINY24A-MMHR
ATTINY2313A-MMH
ATTINY2313A-MMHR
ATTINY4313-MMH
ATTINY4313-MMHR
ATTINY441-MMH
ATTINY441-MMHR
ATTINY441-MMHRA0
ATTINY44A-MMH
ATTINY44A-MMHR
AT42QT1040-MMHR
ATTINY44A-MMH
ATTINY44A-MMHR
ATTINY841-MMH
ATTINY841-MMHR
ATTINY84A-MMH
ATTINY84A-MMHR
ATTINY84A-MMHR651
ATTINY84A-MMHR690
ATTINY84A-MMHR989
ATTINY84A-MMHRA02
ATTINY84A-MMHRB81

CCB 4509
Pre and Post Change Summary
Lead Frame Comparison
PCN#: KSRA-23RGWT440

A Leading Provider of Smart, Connected and Secure Embedded Control Solutions

Lead frame comparison

Pre change	Post Change
ASKR	**NSEB**
	
Lead frame lead-lock | No	**Lead frame lead-lock** | Yes

QUALIFICATION PLAN SUMMARY

PCN#: KSRA-23RGWT440

Date:
January 07, 2021

Qualification of NSEB as a new assembly site for selected ATTINY2xx, ATTINY44x, ATTINY84x and AT42QT1040 device families available in 20L VQFN (3X3X0.85mm) package

Purpose: Qualification of NSEB as a new assembly site for selected ATTINY2xx, ATTINY44x, ATTINY84x and AT42QT1040 device families available in 20L VQFN (3X3X0.85mm) package

Misc.	Assembly site	NSEB
	BD Number	D-023199
	MP Code (MPC)	35468TRCBC04
	Part Number (CPN)	AT42QT1040-MMHR
	MSL information	1
	Assembly Shipping Media (T/R, Tube/Tray)	Tray 1N7-0303-D13
	Base Quantity Multiple (BQM)	490/6000
	Reliability Site	MPHIL
	CCB No	4509
Lead-Frame	Paddle size	75x75
	Material	C194
	DAP Surface Prep	Ag on lead only
	Treatment	None
	Process	Etched
	Lead-lock	Yes
	Part Number	FR1652
	Lead Plating	Matte Sn
	Strip Size	70x250 mm
	Strip Density	1170 units/strip
Bond Wire	Material	CuPdAu
Die 1 Attach (Spacer (Die)	Part Number	8600
	Conductive	Yes
Die 2 Attach (Top Die)	Part Number	HR-5104
	Conductive	No
MC	Part Number	G700
PKG	PKG Type	VQFN
	Pin/Ball Count	20L
	PKG width/size	3X3X0.85mm

Test Name	Conditions	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	Special Instructions
Standard Pb-free Solderability	J-STD-002D ; Perform 8 hour 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	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 fails after TC	5	30 bonds from a min. 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001	5	0	1	5		5	30 bonds from a min. 5 devices.
Physical Dimensions	Measure per JESD22 B100 and B108	10	0	3	30		5	
External Visual	Mil. Std. 883-2009/2010	All devices prior to submission for qualification testing	0	3	ALL	0	5	
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 hot temp (85°C). MSL1 / 260c	231	15	3	738	0	15	Spares should be properly identified. 77 parts from each lot to be used for HAST, uHAST, Temp Cycle test.
UHAST	+130°C/85% RH for 96 hrs or +110°C/85% RH for 264 hrs. Electrical test pre and post stress at hot temp (85°C). Perform 2X extended reliability testing	77	5	3	246	0	10	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
Temp Cycle	-65°C to +150°C for 500 cycles. Electrical test pre and post stress hot temp (85°C). 3 gram force WBP, on 5 devices from 1 lot, test following Temp Cycle stress. Perform 2X extended reliability testing	77	5	3	246	0	15	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.