



Product Change Notification / RMES-15KLMX168

Date:

21-Jan-2021

Product Category:

8-bit Microcontrollers

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4502 Initial Notice: Qualification of NSEB as a new assembly site for ATTINY43x, ATTINYx4x, ATTINYx313x, ATTINY84x, ATTINY1634x, ATTINY44x, ATTINY13x, ATTINY85x, AT73C508, ATTINY45x, ATTINY25x and QT14C10 device families available in 20L WQFN (4X4X0.8mm) package.

Affected CPNs:

[RMES-15KLMX168_Affected_CPN_01212021.pdf](#)

[RMES-15KLMX168_Affected_CPN_01212021.csv](#)

Notification Text:**PCN Status:**

Initial notification

PCN Type:

Manufacturing Change

Microchip Parts Affected:

Please open one of the icons found in the Affected CPNs section above.

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 ATTINY43x, ATTINYx4x, ATTINYx313x, ATTINY84x, ATTINY1634x, ATTINY44x, ATTINY13x, ATTINY85x, AT73C508, ATTINY45x, ATTINY25x and QT14C10

device families available in 20L WQFN (4X4X0.8mm) package.

Pre Change:

Assembled at ASKR site using palladium coated copper (PdCu) bond wire, EN-4900GC die attach material, lead frame without lead lock and ring plating DAP Surface Prep.

Post Change:

Assembled at NSEB site using palladium coated copper with gold flash (CuPdAu) bond wire, 8600 die attach material, lead frame with lead lock and Ag on lead only DAP Surface Prep.

Pre and Post Change Summary:

	Pre Change	Post Change
Assembly Site	ASE Korea Inc. (ASKR)	UTAC Thai Limited (NSEB)
Wire material	PdCu	CuPdAu
Die attach material	EN-4900GC	8600
Molding compound material	G700	G700
Lead frame material	C194	C194
Lead Lock	No	Yes
DAP Surface Prep	Ring plating	Ag on lead only

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:

	January 2021					>	July 2021				
Workweek	01	02	03	04	05		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:

January 21, 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_RMES-15KLMX168_Qual_Plan.pdf](#)
- [PCN_RMES-15KLMX168_Pre and Post Change Summary.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)

ATTINY1634-MN
ATTINY1634-MNR
ATTINY1634-MUR
ATTINY1634R-MUR
ATTINY841-MU
ATTINY841-MUR
ATTINY441-MU
ATTINY441-MUR
ATTINY13V-10MU
ATTINY13-20MU
ATTINY13-20MUR
ATTINY13V-10MUR
ATTINY85-20MU
ATTINY85V-10MU
ATTINY85-20MUR
ATTINY85V-10MUR
ATTINY2313V-10MU
ATTINY2313-20MU
ATTINY2313V-10MUR
ATTINY2313-20MUR
ATTINY44V-10MUR376
ATTINY84-20MU
ATTINY84V-10MU
ATTINY84V-10MUA4
AT73C508-MUR412
ATTINY84-20MUR
ATTINY84V-10MUR
ATTINY84-20MURA2
ATTINY45-20MU
ATTINY45V-10MU
ATTINY45-20MUR
ATTINY45V-10MUR
ATTINY44-20MU
ATTINY44V-10MU
ATTINY44V-10MUR373
QT14C10-ISG
ATTINY44-20MUR
ATTINY44V-10MUR
ATTINY25-20MF
ATTINY25V-10MF
ATTINY25-20MU
ATTINY25V-10MU
ATTINY25-20MUR
ATTINY25V-10MUR
ATTINY25-20MFR
ATTINY25-20MFR675

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ATTINY25-20MFR673

ATTINY25V-10MFR

ATTINY24-20MU

ATTINY24V-10MU

ATTINY24-20MUR

ATTINY24V-10MUR

ATTINY43U-MU

ATTINY43U-MUR

ATTINY13A-MU

ATTINY13A-MUR

ATTINY44A-MF

ATTINY44A-MU

ATTINY44A-MUR

ATTINY44A-MUR861

ATTINY44A-MFR

ATTINY44A-MFRA0

ATTINY24A-MF

ATTINY24A-MU

ATTINY24A-MUR

ATTINY24A-MURA0

ATTINY24A-MFR

ATTINY2313A-MU

ATTINY2313A-MUR

ATTINY4313-MU

ATTINY4313-MUR

ATTINY84A-MF

ATTINY84A-MU

ATTINY84A-MUR

ATTINY84A-MFR

ATTINY1634-MU

ATTINY1634R-MU

ATTINY1634-MU874

CCB 4502
Pre and Post Change Summary
PCN #: RMES-15KLMX168



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

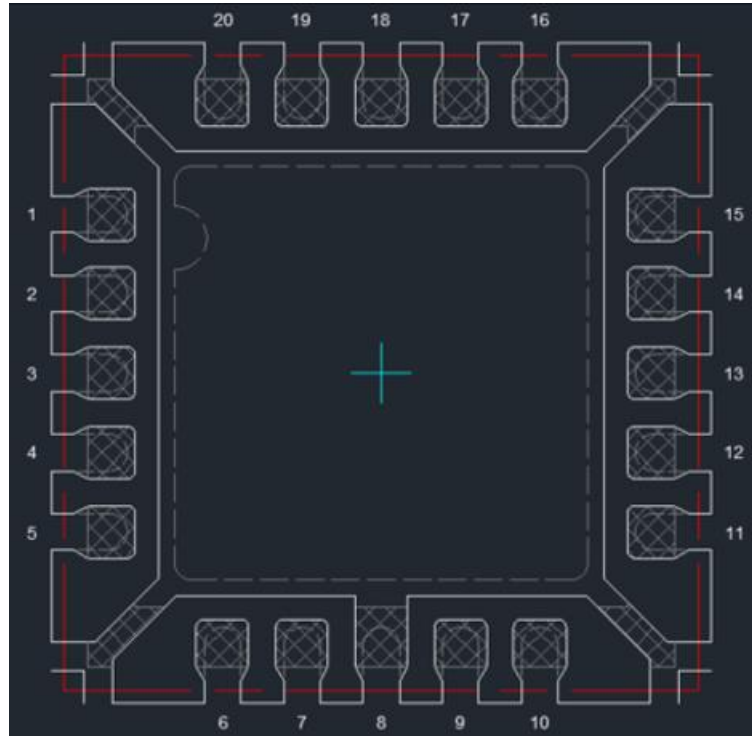
Qualification of NSEB as a new assembly site for ATTINY43x, ATTINYx4x, ATTINYx313x, ATTINY84x, ATTINY1634x, ATTINY44x, ATTINY13x, ATTINY85x, AT73C508, ATTINY45x, ATTINY25x and QT14C10 device families available in 20L WQFN (4X4X0.8mm) package.



SMART | CONNECTED | SECURE

LEAD FRAME COMPARISON

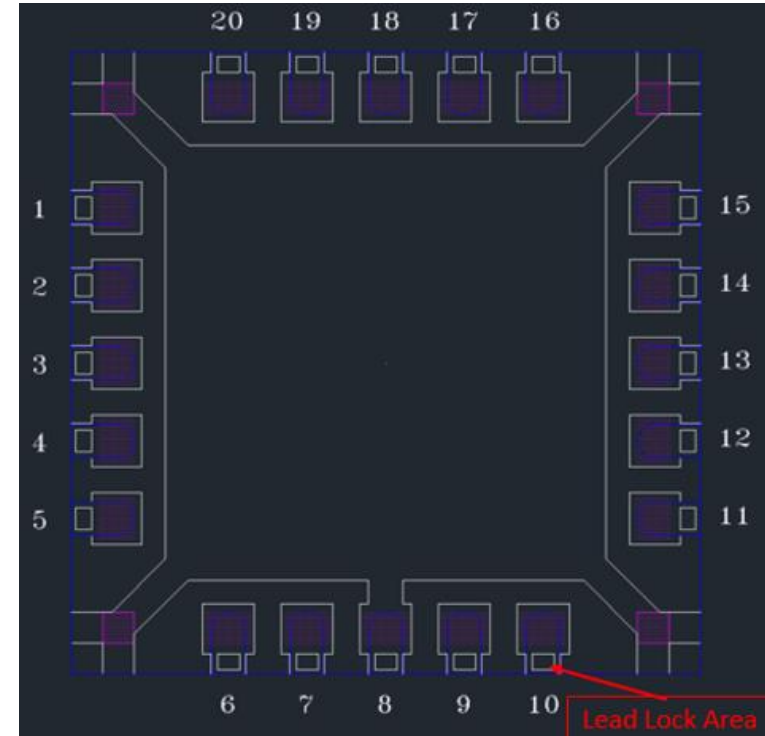
ASKR



Lead Lock

No

NSEB



Lead Lock

Yes



MICROCHIP

QUALIFICATION PLAN SUMMARY

PCN #: RMES-15KLMX168

Date:

December 10, 2020

**Qualification of NSEB as a new assembly site for ATTINY43x,
ATTINYx4x, ATTINYx313x, ATTINY84x, ATTINY1634x,
ATTINY44x, ATTINY13x, ATTINY85x, AT73C508, ATTINY45x,
ATTINY25x and QT14C10 device families available in 20L
WQFN (4X4X0.8mm) package.**

Purpose: Qualification of NSEB as a new assembly site for ATTINY43x, ATTINYx4x, ATTINYx313x, ATTINY84x, ATTINY1634x, ATTINY44x, ATTINY13x, ATTINY85x, AT73C508, ATTINY45x, ATTINY25x and QT14C10 device families available in 20L WQFN (4X4X0.8mm) package.

<u>Misc.</u>	Assembly site	UTAC (NSEB)
	BD Number	D-023276
	MP Code (MPC)	354A3TTRBC07
	Part Number (CPN)	ATTINY1634-MUR
	MSL information	1
	Assembly Shipping Media (T/R, Tube/Tray)	Tray Daewon / 1NA-0404-B13
	Base Quantity Multiple (BQM)	490/6000
	Reliability Site	MPHIL
	CCB No.	4502
<u>Lead-Frame</u>	Paddle size	110 x 110
	Material	C194
	DAP Surface Prep	Ag on lead only
	Treatment	None
	Process	Etched
	Lead-lock	Yes
	Part Number	FR1641
	Lead Plating	Matte Sn
	Strip Size	70x250 mm
	Strip Density	700 units/strip
<u>Bond Wire</u>	Material	CuPdAu
<u>Die Attach</u>	Part Number	8600
	Conductive	Yes
<u>MC</u>	Part Number	G700
<u>PKG</u>	PKG Type	WQFN
	Pin/Ball Count	20L
	PKG width/size	4X4X0.8mm

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	ATE Test Site	REL Test Site	Pkg. Type	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	ASEKR	MPHIL	20L WQFN	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	ASEKR	MPHIL	20L WQFN	30 bonds from a min. 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001	5	0	1	5	0	5	ASEKR	MPHIL	20L WQFN	30 bonds from a min. 5 devices.
Wire Sweep								ASEKR	MPHIL	20L WQFN	Required for any reduction in wire bond thickness.
Physical Dimensions	Measure per JESD22 B100 and B108	10	0	3	30	0	5	ASEKR	MPHIL	20L WQFN	
External Visual	Mil. Std. 883-2009/2010	All devices prior to submission for qualification testing	0	3	ALL	0	5	ASEKR	MPHIL	20L WQFN	
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). Perform MSL1 / 260c	231	15	3	738	0	15	ASEKR	MPHIL	20L WQFN	Spares should be properly identified. 77 parts from each lot to be used for HAST, uHAST, Temp Cycle test.

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	ATE Test Site	REL Test Site	Pkg. Type	Special Instructions
HAST	+130°C/85% RH for 96 hours or 110°C/85%RH for 264 hours. Electrical test pre and post stress at hot temp (85°C).	77	5	3	246	0	10	ASEKR	MPHIL	20L WQFN	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
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).	77	5	3	246	0	10	ASEKR	MPHIL	20L WQFN	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 at hot temp (85°C). 3 gram force WBP, on 5 devices from 1 lot, test following Temp Cycle stress.	77	5	3	246	0	15	ASEKR	MPHIL	20L WQFN	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.