



Product Change Notification - LIAL-31KHQG947

Date:

02 Apr 2020

Product Category:

Automotive LED Drivers; EL Backlight Driver ICs; General Purpose LED Drivers

Affected CPNs:**Notification subject:**

CCB 4178 Initial Notice: Qualification of NSEB as new assembly site for selected AT991xx, HV85xx and HV99xx device families available in 8L WDFN (3x3x0.8mm) package.

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 new assembly site for selected AT991xx, HV85xx and HV99xx device families available in 8L WDFN (3x3x0.8mm) package.

Pre Change:

Assembled at CARC using QMI519 die attach and EME-G770HCD molding compound material

Post Change:

Assembled at NSEB using 8600 die attach and G700LTD molding compound material

Pre and Post Change Summary:

	Pre Change	Post Change
Assembly Site	Carsem (Suzhou) (CARC)	UTAC Thai Limited (UTL-1) LTD. (NSEB)
Wire material	Au	Au
Die attach material	QMI519	8600
Molding compound material	EME-G770HCD	G700LTD
Lead frame material	A194	A194

Impacts to Data Sheet:

None

Change Impact:



None

Reason for Change:

To improve manufacturability by qualifying NSEB as a new assembly site.

Change Implementation Status:

In Progress

Estimated Qualification Completion Date:

July 2020

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:

	April 2020					-->	July 2020				
	14	15	16	17	18		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:

April 2, 2020: 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

Attachment(s):

[PCN_LIAL-31KHQG947_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)

HV857LK7-G

HV857K7-G

HV859K7-G

HV9918K7-G

AT9919K7-G

AT9919K7-GVAO

HV9919BK7-G

HV9967BK7-G



QUALIFICATION PLAN SUMMARY

PCN# : LIAL-31KHQG947

Date
March 26, 2020

**Qualification of NSEB as new assembly site for selected
AT991xx, HV85xx and HV99xx device families available in 8L
WDFN (3x3x0.8mm) package.**

Purpose: Qualification of NSEB as new assembly site for selected AT991xx, HV85xx and HV99xx device families available in 8L WDFN (3x3x0.8mm) package.

<u>Miscellaneous</u>	Assembly site	NSEB
	BD Number	BDM-002391 rev.B
	MP Code (MPC)	VAGA2YUQXVA1
	Part Number (CPN)	AT9919K7-GVAO
	CCB #	4178
	MSL information	MSL-1@260C
	Reliability Site	MTAI
<u>Lead-Frame</u>	Paddle size	106 x 75 mils
	Material	A194
	DAP Surface Prep	Ag on lead only
	Treatment	No
	Process	Etched
	Lead-lock	Yes (U-groove)
	Part Number	FR1598
	Lead Plating	Matte tin
	Strip Size	250x70 mm.
	Strip Density	1170 units/strip
<u>Bond Wire</u>	Material	Au
<u>Die Attach</u>	Part Number	8600
	Conductive	Yes
<u>Mold Compound</u>	Part Number	G700LTD
<u>PKG</u>	PKG Type	WDFN
	Pin/Ball Count	8
	PKG width/size	3x3x0.8mm

Test Name	Conditions	Reliability Stress Read Point Grade 0: -40°C to +150°C (MCHP H Temp) Grade 1: -40°C to +125°C (MCHP E Temp) Grade 2: -40°C to +105°C (MCHP E Temp) Grade 3: -40°C to +85°C (MCHP I Temp)	Pre & Post Reliability Stress Test Temperature Grade 0: -40°C to +150°C (MCHP H Temp) Grade 1: -40°C to +125°C (MCHP E Temp) Grade 2: -40°C to +105°C (MCHP E Temp) Grade 3: -40°C to +85°C (MCHP I Temp)	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	REL Test Site	Special Instructions
Standard Pb-free Solderability	J-STD-002D ; Perform 8 hours of 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	MTAI	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.
Backward Solderability	J-STD-002D ; Perform 8 hour steam aging for Matte tin finish and 1 hr steam aging for NiPdAu finish prior to testing. Backward: Matte tin/ NiPdAu finish, SnPb solder, wetting temp 215°C for SMD.			22	5	1	27	>95% lead coverage	5	MTAI	
Wire Bond Pull - WBP	Mil. Std. 883-2011			5	0	1	5	0 fails after TC	5	UTL	30 bonds from a min. 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001			5	0	1	5	0	5	UTL	30 bonds from a min. 5 devices.
Physical Dimensions	Measure per JESD22 B100 and B108			10	0	3	30	0	5	UTL	
External Visual	Mil. Std. 883-2009/2010			All devices prior to submission for qualification testing	0	3	ALL	0	5	UTL	

Test Name	Conditions	Reliability Stress Read Point Grade 0: -40°C to +150°C (MCHP H Temp) Grade 1: -40°C to +125°C (MCHP E Temp) Grade 2: -40°C to +105°C (MCHP E Temp) Grade 3: -40°C to +85°C (MCHP I Temp)	Pre & Post Reliability Stress Test Temperature Grade 0: -40°C to +150°C (MCHP H Temp) Grade 1: -40°C to +125°C (MCHP E Temp) Grade 2: -40°C to +105°C (MCHP E Temp) Grade 3: -40°C to +85°C (MCHP I Temp)	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	REL Test Site	Special Instructions
HTSL (High Temp Storage Life)	JESD22-A103 +125°C, +150°C or +175°C	Grade 1: 500 hrs (+175°C)	Grade 1: +25°C, +85°C, +125°C	45	5	1	50	0	21 - 83	MTAI	Spares should be properly identified.
Preconditioning - Required for surface mount devices	J-STD-020JESD22-A113+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. MSL-1@260C		Grade 1: +25°C, +85°C, +125°C	231+ 45 (for devices requiring PTC)	15+ 5 (for devices requiring PTC)	3	738+ 50 (for devices requiring PTC)	0	15	MTAI	Spares should be properly identified
HAST	JESD22-A101 or A110 +130°C/85% RH for 96 hrs	Grade 1: 96 hrs (+130°C/85% RH)	Grade 1: +25°C, +85°C, +125°C	77	5	3	246	0	10 - 14	MTAI	Spares should be properly identified.
UFAST	JESD22-A102, A118, or A101 +130°C/85% RH for 96 hrs	Grade 1: 96 hrs (+130°C/85% RH)	Grade 1: +25°C	77	5	3	246	0	10	MTAI	Spares should be properly identified.
Temp Cycle	JESD22-A104 and -65°C to +150°C	Grade 1: 500 cycles (-65°C to 150°C)	Grade 1: +85°C, +125°C	77	5	3	246	0	15 - 60	MTAI	Spares should be properly identified.