



Product Change Notification / ASER-03XZDL400

Date:

27-Jul-2022

Product Category:

EL Backlight Driver ICs

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4997 Final Notice: Qualification of MMT as an additional assembly site for selected HV509K6-G and HV509K6-G-M932 catalog part numbers (CPNs) available in 32L VQFN (5x5x0.9mm) package.

Affected CPNs:

[ASER-03XZDL400_Affected_CPN_07272022.pdf](#)
[ASER-03XZDL400_Affected_CPN_07272022.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 MMT as an additional assembly site for selected HV509K6-G and HV509K6-G-M932 catalog part numbers (CPNs) available in 32L VQFN (5x5x0.9mm) package.

Pre and Post Change Summary:

	Pre Change	Post Change	
Assembly Site	Carsem (Suzhou)	Carsem (Suzhou)	Microchip Technology

	(CARC)	(CARC)	Thailand (MMT)
Wire Material	Au	Au	Au
Die Attach Material	QMI519	QMI519	QMI519
Molding Compound Material	EME-G770HCD	EME-G770HCD	G700LTD
Lead-Frame Material	A194	A194	A194
Lead-lock	No	No	Yes
Lead-Frame Paddle Size	146x146 mils	146x146 mils	150x150 mils
	See Pre and Post Change Summary for comparison.		
DAP Surface Prep	Spot Ag	Spot Ag	Bare Cu
Package Size	5x5x1.0mm	5x5x1.0mm	5x5x0.9mm

Impacts to Data Sheet:Yes - Updated POD.

		5x5x1.0mm - CARC			5x5x0.9mm - MMT		
Feature	Dimension	MIN	NOM	MAX	MIN	NOM	MAX
Number of Pins	n	32			32		
Pitch	e	0.50 BSC			0.50 BSC		
Overall Height	A	0.80	0.90	1.00	0.80	0.90	1.00
Standoff	A1	0.00	0.02	0.05	0.00	0.035	0.05
Terminal Thickness	A3	0.20 REF			0.203 REF		
Overall Width	D	5.00 BSC			5.00 BSC		
Exposed Pad Width	D2	3.30	3.45	3.55	3.00	3.10	3.20
Overall Length	E	5.00 BSC			5.00 BSC		
Exposed Pad Length	E2	3.30	3.45	3.55	3.00	3.10	3.20
Terminal Width	b	0.18	0.25	0.30	0.20	0.25	0.30
Terminal Length	L	0.30	0.40	0.50	0.35	0.40	0.45
Terminal-to-Exposed Pad	K	0.20	-	-	0.20	-	-

Change Impact:None

Reason for Change:To improve on-time delivery performance by qualifying MMT as an additional assembly site.

Change Implementation Status:In Progress

Estimated First Ship Date:September 2, 2022 (date code: 2236)

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

Time Table Summary:

	March 2022					>	July 2022					>	September 2022				
Workweek	1 0	1 1	1 2	1 3	1 4		2 8	2 9	3 0	3 1	3 2		3 6	3 7	3 8	3 9	4 0
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:March 7, 2022: Issued initial notification.

July 27, 2022: Issued final notification. Attached the qualification report. Provided estimated first ship date to be on September 2, 2022. Updated subject and description's package dimension from 5x5x1.0mm to 5x5x0.9mm to reflect the correct package dimension for MMT assembly site.

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

Attachments:

[PCN_ASER-03XZDL400_Pre and Post Change Summary.pdf](#)
[PCN_ASER-03XZDL400_Qual_Report.pdf](#)

Please contact your local [Microchip sales office](#) with questions or concerns regarding this notification.

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Affected Catalog Part Numbers (CPN)

HV509K6-G

HV509K6-G-M932

CCB 4997
Pre and Post Change Summary
PCN #: ASER-03XZDL400



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Lead Frame Design Comparison

CARC					MMT				
Lead Frame Material	Paddle Size	DAP Surface Prep	Package Size	Lead-lock	Lead Frame Material	Paddle Size	DAP Surface Prep	Package Size	Lead-lock
A194	146x146	Spot Ag	5x5x1.0mm	No	A194	150x150	Bare Cu	5x5x0.9mm	Yes

POD Comparison

		5x5x1.0mm - CARC			5x5x0.9mm - MMT		
Feature	Dimension	MIN	NOM	MAX	MIN	NOM	MAX
Number of Pins	n	32			32		
Pitch	e	0.50 BSC			0.50 BSC		
Overall Height	A	0.80	0.90	1.00	0.80	0.90	1.00
Standoff	A1	0.00	0.02	0.05	0.00	0.035	0.05
Terminal Thickness	A3	0.20 REF			0.203 REF		
Overall Width	D	5.00 BSC			5.00 BSC		
Exposed Pad Width	D2	3.30	3.45	3.55	3.00	3.10	3.20
Overall Length	E	5.00 BSC			5.00 BSC		
Exposed Pad Length	E2	3.30	3.45	3.55	3.00	3.10	3.20
Terminal Width	b	0.18	0.25	0.30	0.20	0.25	0.30
Terminal Length	L	0.30	0.40	0.50	0.35	0.40	0.45
Terminal-to-Exposed Pad	K	0.20	-	-	0.20	-	-



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QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

PCN #: ASER-03XZDL400

Date

July 26, 2022

Qualification of MMT as an additional assembly site for selected HV509K6-G and HV509K6-G-M932 catalog part numbers (CPNs) available in 32L VQFN (5x5x0.9mm) package.



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PACKAGE QUALIFICATION REPORT

Purpose	Qualification of MMT as an additional assembly site for selected HV509K6-G and HV509K6-G-M932 catalog part numbers (CPNs) available in 32L VQFN (5x5x0.9mm) package.
CN	E000098564
QUAL ID	R2200437 rev B
MP CODE	6Z0014RXBA00
Part No.	HV509K6-G
Bonding No.	BD-000403 Rev.01
CCB No.	4997

Package

Type	32L VQFN
Package size	5 x 5 x 0.9 mm

Lead Frame

Paddle size	150 x 150 mils
Material	A194
Surface	Bare Cu
Process	Etched
Lead Lock	Yes
Part Number	10103202

Material

Epoxy	QMI519
Wire	Au wire
Mold Compound	G700LTD
Plating Composition	Matte Sn



MICROCHIP PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MMT-225202742.000	TMPE217189146.500	22123QS
MMT-225202738.000	TMPE217189146.500	22123QM
MMT-225201026.000	TMPE217189146.500	2212S0T

Result

Pass Fail _____

32L VQFN (5x5x0.9 mm) assembled by MMT pass reliability test per QCI-39000.
This package was qualified the Moisture/Reflow Sensitivity Classification Level 3 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 3)	Electrical Test: +25°C System: TMT_HV_NT Bake 150°C, 24 hrs System: CHINEE 30°C/60%RH Moisture Soak 192 hrs. System: TABAI ESPEC Model PR-3SPH 3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243 Electrical Test: +25°C System: TMT_HV_NT	JESD22- A113 JIP/ IPC/JEDEC J-STD-020E	693(0)	693 693 693 693 0/693	Pass	Good Devices

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Temp Cycle	Stress Condition: -55°C to +125°C, 500 Cycles System: TABAI ESPEC TSA-70H	JESD22-A104		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C System: TMT_HV_NT		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (>4.00 grams) Bond Shear (>18.00 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: +25°C System: TMT_HV_NT		231(0)	0/231	Pass	77 units / lot
HAST	Stress Condition: +130°C/85%RH, 96 hrs. Bias Volt: VDD=5.5 Volts, VPP= 30 Volts System: HAST 6000X	JESD22-A110		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C System: TMT_HV_NT		231(0)	0/231	Pass	77 units / lot

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
High Temperature Storage Life	Stress Condition: Bake 150°C, 500 hrs System: SHEL LAB	JESD22- A103		45		45 units
	Electrical Test: +25°C System: TMT_HV_NT		45(0)	0/45	Pass	
Bond Strength Data Assembly	Wire Pull (>4.00 grams)	Mil. Std. 883-2011	30 (0) Wires	0/30	Pass	
	Bond Shear (>18.00 grams)	CDF-AEC- Q100-001	30 (0) bonds	0/30	Pass	