



Product Change Notification - RMES-01ULEW599

Date:

28 Feb 2020

Product Category:

Others; Clock and Timing - Clock Generation; Clock and Timing - Oscillators

Affected CPNs:**Notification subject:**

CCB 3859 and 3859.001 Final Notice: Qualification of new bill of materials (BOM) in selected Micrel products available in 6L VDFN (3.2x2.5x0.9mm and 2.0x2.5mm) package at NSEB assembly site.

Notification text:**PCN Status:**

Final 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 new bill of materials (BOM) in selected Micrel products available in 6L VDFN (3.2x2.5x0.9mm and 2.0x2.5mm) package at NSEB assembly site.

Pre Change:

Using NEX-130CT & 8200T die attach, G770HCD molding compound and Q3-6646 die coat material

Post Change:

Using HR-5104 & 2200D die attach, G700LTD molding compound and JCR6109 die coat material

Pre and Post Change Summary:

	Pre Change	Post Change
Assembly Site	UTAC Thai Limited LTD (NSEB)	UTAC Thai Limited LTD (NSEB)
Wire material	Au	Au
Die attach material 1	NEX-130CT	HR-5104
Die attach material 2	8200T	2200D
Molding compound material	G770HCD	G700LTD
Die Coat material	Q3-6646	JCR6109
Lead frame material	A194	A194

Impacts to Data Sheet:



None

Change Impact:

None

Reason for Change:

To improve manufacturability and productivity by qualify new bill of materials (BOM).

Change Implementation Status:

In Progress

Estimated First Ship Date:

March 28, 2020 (date code: 2013)

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

Time Table Summary:

	December 2019				-->	February 2020					March 2020				
Workweek	49	50	51	52		05	06	07	08	09	10	11	12	13	14
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:

December 02, 2019: Issued initial notification.

January 08, 2019: Re-issued initial notification to add CCB 3589.001. Updated the affected CPN list and Qualification plan.

January 09, 2020: Re-issued initial notification to correct typographical error in revision history.

February 28, 2020: Issued final notification. Attached the qualification report. Provided estimated first ship date to be March 28, 2020.

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_RMES-01ULEW599_PACKAGE_QUAL_REPORT.pdf](#)

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



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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)

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DSC8124DI2



MICROCHIP

QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

PCN #: RMES-01ULEW599

Date:
January 22, 2020

Qualification of new bill of materials (BOM) in selected Micrel products available in 6L VDFN (3.2x2.5x0.9mm and 2.0x2.5mm) package at NSEB assembly site.



MICROCHIP

PACKAGE QUALIFICATION REPORT

Purpose	Qualification of new bill of materials (BOM) in selected Micrel products available in 6L VDFN (3.2x2.5x0.9mm and 2.0x2.5mm) package at NSEB assembly site.
CCB #:	3859 and 3859.001
Reliability test site	UTL
CN	ES306693
QUAL ID	Q20005 Rev A
MP CODE	3610Q5H5A001
Part No.	D50C-M3
Bonding No.	BDE-005636 Rev. 02
<u>Package</u>	
Type	6L VDFN
Package size	3.2 x 2.5 x 0.9 mm
<u>Lead Frame</u>	
Paddle size	COL
Material	A194
Process	Etched
Lead Lock	Yes
Part Number	FR0510
<u>Material</u>	
Epoxy	HR-5104 / 2200D
Wire	Au wire
Mold Compound	G700LTD
Die Coat Material	JCR6109
Plating Composition	NiPdAu



MICROCHIP **PACKAGE QUALIFICATION REPORT**

Manufacturing Information

Assembly Lot number	Wafer Lot number	Date Code
NSEB201400680.000	TC03920022154.000	1927G53
NSEB201400692.000	TC03920022154.000	1927G9W
NSEB201500083.000	TC03920022154.000	1928GAD

Result

☒ Pass☐ Fail☐ _____

6L VDFN 3.2x2.5x0.9 mm assembled by NSEB pass reliability test per QCI-39000. This package was qualified the Moisture/Reflow Sensitivity Classification Level 1 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
<u>Precondition</u> <u>Prior Perform</u> <u>Reliability Tests</u> (At MSL Level 1)	Electrical Test :+25°C System: Tester: D10, Handler: AET55V8,V16	JESD22-A113	246(0)	246		Good Devices
	Bake 150°C, 24 hrs System: Oven chamber	JIP/IPC/JEDEC J-STD-020E		246		
	85°C/85%RH Moisture Soak 168 hrs. System: Soak chamber			246		
	3x Convection-Reflow 265°C max System: Heat convection reflow			246		
	Electrical Test :+25°C System: Tester: D10, Handler: AET55V8,V16			0/246	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: Hot and cold chamber	JESD22-A104		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +85°C and 125°C System: Tester: D10, Handler: AET55V8,V16		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (> 3.00 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: Hot and moisture chamber		231(0)	0/231	Pass	77 units / lot
HAST	Stress Condition: +130°C/85%RH, 96 hrs. Bias Volt: 3.3 Volts System: HAST 6000X	JESD22-A110		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C, 85°C and 125°C System: Tester: D10, Handler: AET55V8,V16		231(0)	0/231	Pass	77 units / lot
			5(0) Units	0/5	Pass	

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, 1008 hrs System: SHEL LAB	JESD22- A103		50		50 units
	Electrical Test :+25°C and 125°C System: Oven chamber		50 (0)	0/50	Pass	
Solderability Temp 245°C	Steam Aging: Temp 93°C,8Hrs Solder Dipping:Solder Temp.245°C Solder material:Pb Free Sn 95.5Ag3.9 Cu0.6 Visual Inspection: External Visual Inspection	J-STD-002	22 (0)	22 0/22	 Pass	
Physical Dimensions	Physical Dimension, 10 units / lot from 3 lot	JESD22- B100/B108	30 (0) Units	0/30	Pass	
Bond Strength Data Assembly	Wire Pull (> 3.00 grams)	M2011	30 (0) Wires	0/30	Pass	
	Bond Shear (>10.00 grams)	JESD22- B116	30 (0) bonds	0/30	Pass	