



Product Change Notification - GBNG-09EBQV200

Date:

04 Mar 2020

Product Category:

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

Affected CPNs:**Notification subject:**

CCB 3858.001 Final Notice: Qualification of new bill of materials (BOM) for selected Micrel products available in 14L VQFN (2.5x3.2x0.9mm) package at NSEB assembly site.

Notification text:**PCN Status:**

Final notification

PCN Type:

Manufacturing

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) for selected Micrel products available in 14L VQFN (2.5x3.2x0.9mm) 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	NSEB	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	C194	C194

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 31, 2020 (date code: 2014)

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



Time Table Summary:

	January 2020					>	March 2020					
	01	02	03	04	05		10	11	12	13	14	
Workweek												
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:

January 14, 2020: Issued initial notification.

March 04, 2020: Issued final notification. Attached is the qualification report and added the estimated first date by March 31, 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_GBNG-09EBQV200_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)

DSC2010FM2-B0006
DSC2011FM1-E0005
DSC2011FM2-E0001
DSC2011FM2-E0015
DSC2010FM2-A0001
DSC2011FM1-E0015
DSC2011FM1-F0041
DSC2011FM2-E0005
DSC2011FM2-F0049
DSC2210FM2-A0030
DSC2210FM2-A0031
DSC2010FI2-A0001
DSC2010FI2-A0003
DSC557-0333FI0
DSC2010FI2-A0024
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DSC2010FI2-B0005
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DSC2011FI2-F0017
DSC2011FI2-F0021
DSC2020FI2-B0012
DSC2022FI2-F0001
DSC2030FI2-C0001
DSC2030FI2-C0004
DSC2030FI2-C0006
DSC2010FI2-A0017
DSC2030FI2-C0012
DSC2030FI5-C0001
DSC2031FI2-J0001
DSC2033FI1-G0002
DSC2033FI2-G0001
DSC2033FI2-G0002
DSC2033FI2-G0004
DSC2033FI2-G0006
DSC2033FI2-G0007
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DSC2010FM2-A0001B



MICROCHIP

QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

PCN#: GBNG-09EBQV200

Date:
January 21, 2020

Qualification of new bill of materials (BOM) in selected Micrel products available in 20L VQFN package at NSEB assembly site. The selected Micrel products available in 14L VQFN (2.5x3.2x0.9mm) package will qualify by similarity (QBS). This is Q100 Grade 1 qualification.



MICROCHIP PACKAGE QUALIFICATION REPORT

Purpose Qualification of new bill of materials (BOM) in selected Micrel products available in 20L VQFN package at NSEB assembly site. The selected Micrel products available in 14L VQFN (2.5x3.2x0.9mm) package will qualify by similarity (QBS). This is Q100 Grade 1 qualification.

Reliability test site	UTL
CN	ES306221
QUAL ID	Q20006
MP CODE	3100L9P9A001
Part No.	DSC557-05L2
Bonding No.	BDE-005637 Rev. 02
Document No Control.	Q20006 Rev. A
CCB No.	3858.001

Package

Type	20L VQFN
Package size	5.0 x 3.2 x 0.9 mm
Top Die thickness	7 mils

Lead Frame

Paddle size	161 x 91 mils
Material	C194
Process	Etched
Lead Lock	Y
Part Number	FR0748

Material

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 No.	Wafer Lot No.	Date Code
NSEB201400004.000	TC03920075522.100	19276UQ
NSEB201400002.000	TC03920075522.100	19276RK
NSEB201500569.000	TC03920022154.000	1928PT1

Result Pass Fail _____

20L VQFN 5.0x3.2x0.9 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 Prior Perform Reliability Tests</u> (At MSL Level 1)	Electrical Test :+25°C System: Tester: D10, Handler: AET55V8,V16	JESD22 -A113	693 (0)	693		Good Devices
	Bake 150°C, 24 hrs System: Oven chamber	JIP/ IPC/JE DEC J-STD-020E		693		
	85°C/85%RH Moisture Soak 168 hrs. System: Oven chamber			693		
	3x Convection-Reflow 265°C max System: Heat convection reflow			693		
	Electrical Test :+25°C System: Tester: D10, Handler: AET55V8,V16			0/693	Pass	
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: +125°C System: Tester: D10, Handler:		231 (0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (> 3.00 grams)		15 (0)	0/15	Pass	
			15 (0)	0/15	Pass	
UNBIASED-HAST	Stress Condition: +130°C/85%RH, 96 hrs. System: Hot and moisture chamber	JESD22 -A118		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C System: Tester: D10, Handler:AET55V8,V16		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

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: Oven chamber	JESD22-A103		45		45 units
	Electrical Test: +25°C +125°C System: Tester: D10, Handler:AET55V8,V16		45(0)	0/45	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 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	Wire Pull (> 3.00 grams)	M2011	30 (0) Wires	0/30	Pass	
Data Assembly	Bond Shear (>10.00 grams)	JESD22-B116	30 (0) bonds	0/30	Pass	