Product Change Notification / GBNG-03UMRU813

Date:

15-Aug-2022

Product Category:

Clock and Timing - Clock and Data Distribution, Clock and Timing - Clock Generation, Clock and Timing - Oscillators

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4479 Final Notice: Qualification of NSEB and UTL3 as a new assembly site for selected PL123xx, PL133xx, PL135xx, PL610xx and PL611xx device families available in 6L UDFN (1.3x2.0x0.6mm) package.

Affected CPNs:

GBNG-03UMRU813_Affected_CPN_08152022.pdf
GBNG-03UMRU813_Affected_CPN_08152022.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 NSEB and UTL3 as a new assembly site for selected PL123xx, PL133xx, PL135xx, PL610xx and PL611xx device families available in 6L UDFN (1.3x2.0x0.6mm) package.

Pre and Post Change Summary:

		Pre Change	Post Change	
Assembly Site		TAIWAN IC PACKING CORP (TICP)	UTAC Thai Limited (UTL-1) LTD (NSEB)	UTAC Thai Limited (UTL-3)
Wire Material		Au	Au	Au
Die Attach Material		EN4900GC	8600	8600
Molding Compound Material		CEL-9220HF	G700LTD	G700LTD
Lead-Frame	Material	C7025	C194	C194
	Paddle Size	43X50	43X45	43X45
	Design	See Pre and Post change comparison.		

Impacts to Data Sheet: None

Change Impact: None

Reason for Change: To improve on-time delivery performance by qualifying NSEB and UTL3 as a new assembly site.

Change Implementation Status: In Progress

Estimated First Ship Date: September 09, 2022 (date code: 2237)

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

Time Table Summary:

	December 2020					>	August 2022					September 2022			
Workweek	49	50	51	52	53		32	33	34	35	36	37	38	39	40
Initial PCN Issue Date				x											
Qual Report Availability									x						
Final PCN Issue Date									x						
Estimated												x			

Implementation Date															

Method to Identify Change: Traceability code

Qualification Report: Please open the attachments included with this PCN labeled as PCN_#_Qual_Report.

Revision History: December 23, 2020: Issued initial notification.
August 15, 2022: Issued final notification. Update PCN letter to include UTL-3 as a new assembly site. Attached the qualification report. Provided estimated first ship date to be on September 09, 2022.

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

Attachments:

PCN_GBNG-03UMRU813_Pre and Post Change Summary.pdf
PCN_GBNG-03UMRU813_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)

PL610-01-R67GC
PL610-01-R86GC
PL610-01-R85GC
PL610-01-R91GC
PL610-01-002
PL135-27GI
PL610-01-Q90GI
PL610-01-R83GI
PL610-01-R87GI
PL610-01-R88GI
PL610-01-R67GC-R
PL610-01-R86GC-R
PL610-01-R85GC-R
PL610-01-R91GC-R
PL610-01-Q90GI-R
PL135-27GI-R
PL610-01-R83GI-R
PL610-01-R87GI-R
PL610-01-R88GI-R
PL611S-27-002
PL611S-27-O23GC-R
PL611S-27-O24GC-R
PL123-02NGC
PL133-21GC
PL133-27GC
PL611S-02-P31GC
PL611S-19-R29GC
PL611S-19-Q48GC
PL611S-19-R58GC
PL611S-19-R60GC
PL611S-19-R70GC
PL611S-02-Q26GC
PL611S-18-R77GC
PL611S-02-R99GC
PL611S-18-J79GC
PL611S-02-S26GC
PL611S-19-S31GC
PL611S-19-S33GC
PL611S-02-S38GC
PL611S-19-S70GC
PL611S-02-002
PL611S-19-002
PL123-02NGI
PL133-27GI
PL611S-19-A18GI
PL611S-19-R70GI

PL611S-02-R84GI
PL611S-02-R85GI
PL611S-02-R96GI
PL611S-02-R97GI
PL611S-02-R98GI
PL611S-02-S10GI
PL611S-18-002
PL611S-18-R94GI
PL611S-18-R95GI
PL611S-02-S11GI
PL611S-02-S12GI
PL611S-02-S15GI
PL611S-02-S16GI
PL611S-02-S17GI
PL611S-02-S18GI
PL611S-19-S24GI
PL611S-02-S25GI
PL611S-02-S29GI
PL611S-18-S47GI
PL611S-02-S49GI
PL611S-02-S57GI
PL611S-18-S62GI
PL611S-02-S68GI
PL611S-02-S71GI
PL611S-19-S72GI
PL123-02NGC-R
PL133-27GC-R
PL611S-02-D69GC-R
PL611S-02-M28GC-R
PL611S-19-C85GC-R
PL611S-19-N50GC-R
PL611S-19-N51GC-R
PL133-21GC-R
PL611S-19-Q48GC-R
PL611S-02-P31GC-R
PL611S-19-R29GC-R
PL611S-02GC-R
PL611S-19-R58GC-R
PL611S-19-R60GC-R
PL611S-19-R70GC-R
PL611S-19-R70GC-T5
PL611S-02-Q26GC-R
PL611S-18-R77GC-R
PL611S-02-R99GC-R
PL611S-18-J79GC-R
PL611S-02-S26GC-R
PL611S-19-S31GC-R
PL611S-19-S33GC-R
PL611S-02-S38GC-R

PL611S-19-S70GC-R

PL123-02NGI-R

PL133-27GI-R

PL611S-19-A18GI-R

PL611S-02GI-R

PL611S-19-R70GI-R

PL611S-19-R70GI-T5

PL611S-02-R84GI-R

PL611S-02-R85GI-R

PL611S-02-R96GI-R

PL611S-02-R97GI-R

PL611S-02-R98GI-R

PL611S-02-S10GI-R

PL611S-18-R94GI-R

PL611S-18-R95GI-R

PL611S-02-S11GI-R

PL611S-02-S12GI-R

PL611S-02-S15GI-R

PL611S-02-S16GI-R

PL611S-02-S17GI-R

PL611S-02-S18GI-R

PL611S-19-S24GI-R

PL611S-02-S25GI-R

PL611S-02-S29GI-R

PL611S-18-S47GI-R

PL611S-02-S49GI-R

PL611S-02-S57GI-R

PL611S-18-S62GI-R

PL611S-02-S68GI-R

PL611S-02-S71GI-R

PL611S-19-S72GI-R

PRE AND POST CHANGE SUMMARY

CCB 4479

PCN #: GBNG-03UMRU813

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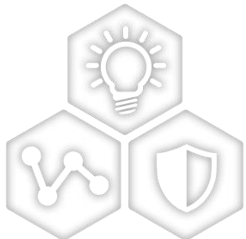
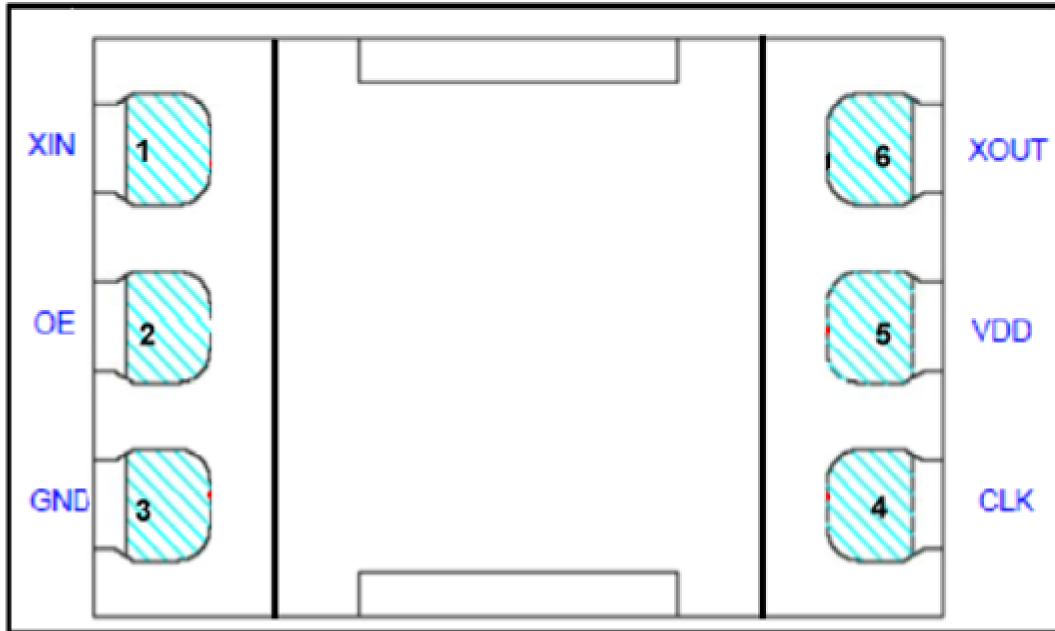
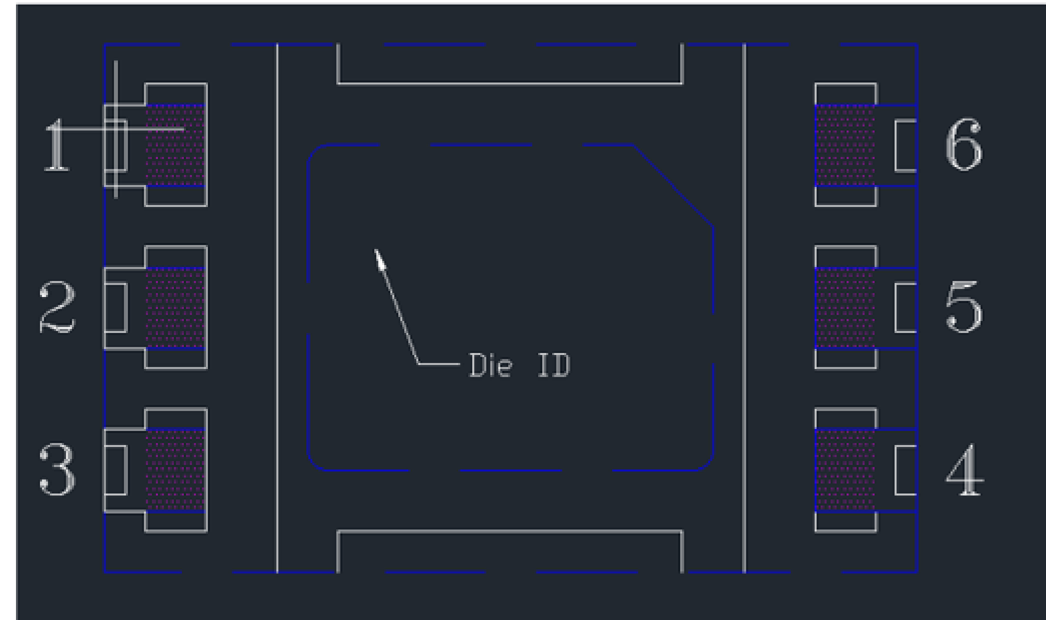


Lead Frame Comparison

TICP	NSEB/UTL-3
	

DAP Surface Prep	Spot (PPF)
Lead-frame Paddle size	43X50

DAP Surface Prep	PPF
Lead-frame Paddle size	43X45

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QUALIFICATION REPORT SUMMARY

PCN#: GBNG-03UMRU813

Date:
July 27, 2022

Qualification of NSEB and UTL3 as a new assembly site for selected PL123xx, PL133xx, PL135xx, PL610xx and PL611xx device families available in 6L UDFN (1.3x2.0x0.6mm) package.

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PACKAGE QUALIFICATION REPORT

Purpose	Qualification of UTL3 as a new assembly site for selected PL123xx, PL133xx, PL135xx, PL610xx and PL611xx device families available in 6L UDFN (1.3x2.0x0.6mm) package.
CN	ES360151
QUAL ID	R2101043 Rev. B
MP CODE	UGMC1SHXAA03
Part No.	PL611S-02-D69GC-R
Bonding No.	BDM-002790 Rev. C
CCB No.	4479
Package	
Type	6L UDFN
Package size	1.3x2.0x0.6 mm
Lead Frame	
Paddle size	43 x 45 mils
Material	C194
Surface	PPF
Process	Etched
Lead Lock	Yes
Part Number	F70020
Material	
Epoxy	8600
Wire	Au wire
Mold Compound	G700LTD
Plating Composition	NiPdAu

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PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
NSEB214800476.200	GF02921194406.100	2109GB4
NSEB214800644.110	GF02921194406.100	2109GJT
NSEB214800645.200	GF02921194406.100	2109GJW

Result [X] Pass [ ] Fail [ ] ____________________

6L UDFN (1.3x2.0x0.6 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
Precondition Prior Perform Reliability Tests (At MSL Level 1)	**Electrical Test:** +25°C System: TMT_TCG_NT Bake 150°C, 24 hrs System: CHINEE 85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH 3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243 **Electrical Test:** +25°C System: TMT_TCG_NT	JESD22-A113 JIP/ IPC/JEDEC J-STD-020E	693(0)	693 693 693 693 0/693	Pass	Good Devices
Temp Cycle	**Stress Condition:** -65°C to +150°C, 500 Cycles System: TABAI ESPEC TSA-70H **Electrical Test:** +25°C System: TMT_TCG_NT **Bond Strength:** Wire Pull (>4.00 grams) Bond Shear (>18.00 grams)	JESD22-A104	231(0) 15 (0) 15 (0)	231 0/231 0/15 0/15	Pass Pass Pass	Parts had been pre-conditioned at 260°C 77 units / lot
UNBIASED-HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. System: HAST 6000X **Electrical Test:** +25°C System: TMT_TCG_NT	JESD22-A118	231(0)	231 0/231	Pass	Parts had been pre-conditioned at 260°C 77 units / lot
High Temperature Storage Life	**Stress Condition:** Bake 175°C, 504 hrs System: SHEL LAB **Electrical Test:** +25°C System: TMT_TCG_NT	JESD22-A103	45(0)	45 0/45	Pass	45 units

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
Solderability Temp 245°C	**Steam Aging:** Temp 93°C,8Hrs System: SAS-3000 Solder Dipping:Solder Temp.245°C Solder material:Pb Free Sn 95.5Ag3.9 Cu0.6 System: ERSA RA 2200D Visual Inspection: External Visual Inspection	J-STD-002	22 (0)	22 22 0/22	Pass	
Wire sweep	Wire sweep Inspection 15 Wires / lot	-	45(0) Wires	0/45	Pass	
Physical Dimensions	Physical Dimension, 10 units from 1 lot	JESD22-B100/B108	30(0) Units	0/30	Pass	
Bond Strength Data Assembly	Wire Pull (>4.00 grams)	Mil. Std. 883-2011	30 (0) Wires	0/30	Pass	
	Bond Shear (>20.00 grams)	CDF-AEC-Q100-001	30 (0) bonds	0/30	Pass	

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PACKAGE QUALIFICATION REPORT

Purpose	Qualification of NSEB as a new assembly site for selected PL123xx, PL133xx, PL135xx, PL610xx and PL611xx device families available in 6L UDFN (1.3x2.0x0.6mm) package.
CN	ES360330
QUAL ID	R2100829 Rev. B
MP CODE	UGMC1SHXAA03
Part No.	PL611S-02-D69GC-R
Bonding No.	BDM-002790 Rev. C
CCB No.	4479
<u>Package</u>	
Type	6L UDFN
Package size	1.3 x 2.0 x 0.6 mm
<u>Lead Frame</u>	
Paddle size	43 x 45 mils
Material	C194
Surface	PPF
Process	Etched
Lead Lock	Yes
Part Number	F70020
<u>Material</u>	
Epoxy	8600
Wire	Au wire
Mold Compound	G700LTD
Plating Composition	NiPdAu

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PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
NSEB214100165.000	GF02921194406.100	2102SEU
NSEB214100166.000	GF02921194406.100	2102SGR
NSEB214100167.000	GF02921194406.100	2102SH9

Result ☒ Pass ☐ Fail ☐ ______________

6L UDFN (1.3x2.0x0.6 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**
Precondition Prior Perform Reliability Tests (At MSL Level 1)	**Electrical Test:** +25°C System: TMT_TCG_NT	JESD22-A113	693(0)	693		Good Devices
	Bake 150°C, 24 hrs System: CHINEE	JIP/ IPC/JEDEC J-STD-020E		693		
	85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH			693		
	3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243			693		
	Electrical Test: +25°C System: TMT_TCG_NT			0/693	Pass	
Temp Cycle	**Stress Condition:** -65°C to +150°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_TCG_NT		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (>4.00 grams)		15 (0)	0/15	Pass	
	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_TCG_NT		231(0)	0/231	Pass	77 units / lot
High Temperature Storage Life	**Stress Condition:** Bake 175°C, 504 hrs System: SHEL LAB	JESD22-A103		45		45 units
	Electrical Test: +25°C System: TMT_TCG_NT		45(0)	0/45	Pass	
Solderability Temp 245°C	**Steam Aging:** Temp 93°C,8Hrs System: SAS-3000	J-STD-002	22 (0)	22		
	Solder Dipping:Solder Temp.245°C Solder material:Pb Free Sn 95.5Ag3.9 Cu0.6			22		
	System: ERSA RA 2200D Visual Inspection: External Visual Inspection			0/22	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
Wire sweep	Wire sweep Inspection 15 Wires / lot	-	45(0) Wires	0/45	Pass	
Physical Dimensions	Physical Dimension, 10 units from 1 lot	JESD22-B100/B108	30(0) Units	0/30	Pass	
Bond Strength Data Assembly	Wire Pull (>4.00 grams)	Mil. Std. 883-2011	30 (0) Wires	0/30	Pass	
	Bond Shear (>20.00 grams)	CDF-AEC-Q100-001	30 (0) bonds	0/30	Pass	