Product Change Notification / ASER-05VRGQ325

Date:

22-Feb-2021

Product Category:

Ultrasound T/R Switch ICs

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4173 Final Notice: Qualification of NSEB as a new assembly site for selected MD010xxx device families available in 18L VDFN (5x5x1.0mm) package.

Affected CPNs:

ASER-05VRGQ325_Affected_CPN_02222021.pdf
ASER-05VRGQ325_Affected_CPN_02222021.csv

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 NSEB as a new assembly site for selected MD010xxx device families available in 18L VDFN (5x5x1.0mm) package.

Pre Change: Assembled at CARC using EME-G770HCD molding compound.

Post Change: Assembled at NSEB using G700LTD molding compound.

Pre and Post Change Summary:

	Pre Change	**Post Change**
Assembly Site	Carsem (Suzhou) (CARC)	UTAC Thai Limited NSEB (UTL)
Wire material	Au	Au
Die attach material	8006NS	8006NS
Molding compound material	EME-G770HCD	G700LTD
Lead frame material	C194	C194

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 First Ship Date: March 10, 2021 (date code: 2111)

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

Time Table Summary:

	March 2020					**-->**	**February 2021**				**March 2021**				
Workweek	10	11	12	13	14		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:
March 18, 2020: Issued initial notification.

February 22, 2021: Issued final notification. Attached the Qualification Report. Updated the typo in the revision history initial PCN issuance date from March 18, 2019 to March 18, 2020. Provided estimated first ship date to be onMarch 10, 2021.

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-05VRGQ325_Qual Report.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)

MD0101K6-G
MD0105K6-G
MD0105K6-G-M932

QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN#: ASER-05VRGQ325

Date

February 05, 2021

Qualification of NSEB as a new assembly site for selected MD010xxx device families available in 18L VDFN (5x5x1.0mm) package.

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PACKAGE QUALIFICATION REPORT

Purpose	Qualification of NSEB as a new assembly site for selected MD010xxx device families available in 18L VDFN (5x5x1.0mm) package.
CN	ES349926
QUAL ID	R2000913 Rev A
MP CODE	6506847RXA00
Part No.	MD0101K6-G
Bonding No.	BDM-002417 Rev. B
CCB#:	4173
Package	
Type	18L VDFN
Package size	5x5x1.0 mm
Lead Frame	
Paddle size	181 x 154 mils
Material	C194
Surface	Rough PPF
Process	Etched
Lead Lock	Yes (Dimple)
Part Number	FR0940
Material	
Epoxy	8006NS
Wire	Au
Mold Compound	G700LTD
Plating Composition	NiPdAu

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PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
NSEB213200612.000	TMPE221115083.200	2045VUC
NSEB213200613.000	TMPE221115083.200	2045VV0
NSEB213200614.000	TMPE221115083.200	2045VV4

Result ☒ Pass ☐ Fail ☐ ____________________

18L VDFN (5x5x1.0 mm) assembled by NSEB 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_MVS_NT	JESD22-A113	693(0)	693		Good Devices
	Bake 150°C, 24 hrs System: CHINEE	JIP/ IPC/JEDEC J-STD-020E		693		
	30°C/60%RH Moisture Soak 192 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_MVS_NT			0/693	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: TABAI ESPEC TSA-70H	JESD22-A104		231		Parts had been pre-conditioned at 260°C
	Electrical Test: + 25°C System: TMT_MVS_NT		231(0)	0/231	Pass	77 units / lot
	Bond Strength:					
	Wire Pull (> 2.5 grams)		15 (0)	0/15	Pass	
	Bond Shear (>15.00 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_MVS_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 175°C, 504 hrs System: SHEL LAB **Electrical Test:** + 25°C System: TMT_MVS_NT	JESD22-A103	45(0)	45 0/45	Pass	45 units
Solderability Temp 215°C	**Steam Aging:** Temp 93°C,8Hrs System: SAS-3000 Solder Dipping: Solder Temp.215°C Solder material: SnPb Sn63, Pb37 System: ERSA RA 2200D Visual Inspection: External Visual Inspection	J-STD-002	22 (0)	22 22 0/22	Pass	
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	