Product Change Notification / NTDO-26UFKW944

Date:

13-Dec-2021

Product Category:

Winpath Network Processors

PCN Type:

Manufacturing Change

Notification Subject:

Qualification of an additional substrate material for selected Microsemi WP3232Mxxx, WP32C2xxx, WP32C0xxx, WP3362xxx, WP3392xxx, WP33C2xxx, WP34C2xxx, T2C0xxx and T2C2xxx device families available in 896L B1BGA (31x31x2.70mm) and 896L B2BGA (31x31x3.25mm) packages at ASE assembly site.

Affected CPNs:

NTDO-26UFKW944_Affected_CPN_12132021.pdf
NTDO-26UFKW944_Affected_CPN_12132021.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 an additional substrate material for selected Microsemi WP3232Mxxx, WP32C2xxx, WP32C0xxx,

WP3362xxx, WP3392xxx, WP33C2xxx, WP34C2xxx, T2C0xxx and T2C2xxx device families available in 896L B1BGA (31x31x2.70mm) and 896L B2BGA (31x31x3.25mm) packages at ASE assembly site.

Pre and Post Change Summary:

	Pre Change	Post Change	
Assembly Site	ASE Inc. (ASE)	ASE Inc. (ASE)	
Substrate core material	E679FGR	E679FGR	E705G
SM Material	AUS-703	AUS-703	SR7300GR-B
Bump Material	Sn1.8Ag	Sn1.8Ag	Sn1.8Ag
Die Attach Epoxy	WS446	WS446	WS446
Underfill Material	UH12	UH12	UH12
Solder Ball Material	SAC305	SAC305	SAC305
Solder Ball Flux	WF6400	WF6400	WF6400 [Note1] SCF-3 [Note2]

Note1: Applicable for 896 B1BGA package.

Note2: Applicable for 896 B2BGA package.

Impacts to Data Sheet:

None.

Change Impact:

None.

Reason for Change:

To improve productivity by qualifying an additional substrate material.

Change Implementation Status:

In Progress

Estimated First Ship Date:

September 15, 2021 (date code: 2138)

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

Time Table Summary:

	May 2021					-->	August 2021				September 2021					-->	December 2021				
Workweek	19	20	21	22	23		32	33	34	35	36	37	38	39	40		49	50	51	52	53
Initial PCN Issue Date			X																		
Qual Report Availability																		X			

Final PCN Issue Date										X											
Estimated First Ship 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:

May 05, 2021: Issued initial notification.

August 10, 2021: Issued final notification. Provided estimated first ship date will be on September 15, 2021.
August 24, 2021: Re-issued final notification to add CCB 4644.001 as internal reference. Added catalog part numbers (CPN) WP32C2M6NHEI-400B2, WP32C0W5NHEI-450B2 and WP3232M5NHEI-320B2 in affected CPN list.**December 13, 2021**: Issued final notification. Added Notes in the Pre and Post Change Summary Table. Updated affected CPN list to add T2C0xxx and T2C2xxx device families. Attached the qualification report.

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

Attachments:

PCN_NTDO-26UFKW944_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.

MICROCHIP

QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: NTDO-26UFKW944

Date:
November 22, 2021

Qualification of an additional substrate material for selected Microsemi WP3232Mxxx, WP32C2xxx, WP32C0xxx, WP3362xxx, WP3392xxx, WP33C2xxx, WP34C2xxx, T2C0xxx and T2C2xxx device families available in 896L B1BGA (31x31x2.70mm) and 896L B2BGA (31x31x3.25mm) packages at ASE assembly site.

PACKAGE QUALIFICATION REPORT

Purpose	**Qualification of an additional substrate material for selected Microsemi WP3232Mxxx, WP32C2xxx, WP32C0xxx, WP3362xxx, WP3392xxx, WP33C2xxx, WP34C2xxx, T2C0xxx and T2C2xxx device families available in 896L B1BGA (31x31x2.70mm) and 896L B2BGA (31x31x3.25mm) packages at ASE assembly site.**
CCB No.	4644 and 4644.001
CN	ES359284
QUAL ID	R2101093 Rev. A
MP CODE	STAE27NGCT02
Part No.	T2C2NFEI-320B2
Bonding No.	BDM-002931 Rev. A

Package

Type	896FC BGA
Package size	31 x 31 x 2.70 mm

Substrate

Core Material	E705G
Core Thickness	820 +/- 60 um
SM Material	SR7300GR-B
Process	Build-up
Substrate Thickness	1100 +/- 0.1 um
Part Number	WP3PBF-SBT-N
Drill Size	Laser Drill Hole:60um / Laser Drill Land:120um PTH Drill Hole:200um / PTH Drill Land:350um

Material

Epoxy	WS446
Under fill	UH12
Bump	Sn1.8Ag

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PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
ASE-221100278.000	TC14921246492.000	2123QUM
ASE-221100279.000	TC14921246492.000	2123QV6
ASE-221100280.000	TC14921246492.000	2123QVC

Result ☒ Pass ☐ Fail ☐ ____________________

896FC BGA (31x31x2.70 mm) assembled by ASE pass reliability test per QCI-39000. This package was qualified the Moisture/Reflow Sensitivity Classification Level 4 at 250°C reflow temperature per IPC/JEDEC J-STD-020E standard.

Note: Reliability qualification was completed at ASE Rel Report no. RT-20211014-CR21, RT-20211014-CR22 and RT-20211014-CR23

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard / Method	Qty. (Acc.)	Def/SS	Result	Remarks
Precondition Prior Perform Reliability Tests **(At MSL Level 4)**	**Electrical Test:** +85°C System: Tester: V93K_C400 Handler: PNP_X4	JESD22-A113	150 (0)	150		Good Devices
	Bake 150°C, 24 hrs System: Oven chamber	JIP/ IPC/JEDEC J-STD-020E		150		
	30°C/60%RH Moisture Soak 96 hrs. System: Soak chamber			150		
	3x Convection-Reflow 250°C max System: Heat convection reflow			150		
	Electrical Test: +85°C System: Tester: V93K_C400 Handler: PNP_X4			0/150	Pass	

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: Hot and cold chamber	JESD22-A104		75		Parts had been pre-conditioned at 250°C
	Electrical Test: +85°C System: Tester: V93K_C400 Handler: PNP_X4		75(0)	0/75	Pass	25 units / lot
	Stress Condition: -55°C to +125°C, 1000 Cycles System: Hot and cold chamber			75		
	Electrical Test: +85°C System: Tester: V93K_C400 Handler: PNP_X4		75(0)	0/75	Pass	
UNBIASED-HAST	**Stress Condition:** +110°C/85%RH, 264 hrs. System: Hot and moisture chamber	JESD22-A110		75		Parts had been pre-conditioned at 250°C
	Electrical Test: +85°C System: Tester: V93K_C400 Handler: PNP_X4		75(0)	0/75	Pass	25 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, 504 hrs System: Oven chamber	JESD22-A103		75		25 units / lot
	Electrical Test: +85°C System: Tester: V93K_C400 Handler: PNP_X4		75(0)	0/75	Pass	
	Stress Condition: Bake 150°C, 1008 hrs System: Oven chamber			75		
	Electrical Test: +85°C System: Tester: V93K_C400 Handler: PNP_X4		75(0)	0/75	Pass	
Shadow Moiré	Unstressed sample Shadow Moiré	JESD22-B112 A	5(0) Units	0/5	Pass	
Solder Ball Shear	Solder Ball Shear	JESD22-B117A	5(0) Units	0/5	Pass	
Coplanarity	Coplanarity	JESD22-B108A/POD	5(0) Units	0/5	Pass	

Affected Catalog Part Numbers (CPN)

WP34C2R6EFEI450B2R
WP34C2R6NFEI450B2R
WP3232M5NELI-320B2
WP32C2A4EFEI-400B2
WP32C2M6NELI-400B2
WP32C2M6NELI-450B2
WP32C2W3EFEI-320B2
WP32C2W6NFEI-400B2
WP3362D4NFEI-320B2
WP3392D4NFEI-320B2
WP33C2A1EFEI-450B2
WP33C2D4NFEI-450B2
WP34C2R4EFEI-400B2
WP34C2R4NFEI-400B2
WP3232M6NFEI-320B2
T2C2EFEI-320B2
T2C2NFEI-320B2
T2C2EFEI-400B2
T2C2NFEI-400B2
T2C2EFEI-450B2
T2C2NFEI-450B2
WP32C2M6NHEI-400B2
WP32C0W5NHEI-450B2
WP3232M5NHEI-320B2
T2C0NHEI-450B2
T2C2NHEI-400B2
T2C2NHEI-320B2