Product Change Notification / RMES-07BGQT464

Date:

25-Jan-2023

Product Category:

16-Bit - Microcontrollers and Digital Signal Controllers

PCN Type:

Manufacturing Change

Notification Subject:

CCB 5257 Final Notice: Qualification of MMT as an additional assembly site for selected DSPIC33CK32Mx102 and DSPIC33CK64Mx102 device families available in 28L UQFN (4x4x0.6mm) package.

Affected CPNs:

RMES-07BGQT464_Affected_CPN_01252023.pdf
RMES-07BGQT464_Affected_CPN_01252023.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 MMT as an additional assembly site for selected DSPIC33CK32Mx102 and DSPIC33CK64Mx102 device families available in 28L UQFN (4x4x0.6mm) package.

Pre and Post Change Summary:

		Pre Change	Post Change	
Assembly Site		ASE Inc. (ASE)	ASE Inc. (ASE)	Microchip Technology Thailand (Branch) – (MMT)
Wire Material		Au	Au	Au
Die Attach Material		FH-900T	FH-900T	HR-5104T-25
Molding Compound Material		CEL-9240	CEL-9240	G700LTD
Lead-Frame Material	Material	C7025	C7025	EFTEC64T
	Lead Lock (Locking Holes)	No	No	Yes
		See Pre and Post Change Summary for comparison.		

Impacts to Data Sheet: None

Change Impact None

Reason for Change: To improve productivity by qualifying MMT as an additional assembly site.

Change Implementation Status: In Progress

Estimated First Ship Date: March 21, 2023 (date code: 2312)

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

Time Table Summary:

	September 2022					**>**	**January 2023**					**>**	**March 2023**				
Workweek	36	37	38	39	40		1	2	3	4	5		9	10	11	12	13
Initial PCN Issue Date		x															
Qual Report Availability							x										
Final PCN Issue Date							x										
Estimated Implementation																x	

Date																

Method to Identify Change: Traceability code

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

Revision History: September 08, 2022: Issued initial notification.
January 5, 2023: Issued final notification. Attached the Qualification Report. Updated affected CPN list to include catalog part numbers (CPN) released prior issuance of the Final PCN. Provided estimated first ship date to be on March 21, 2023.

January 25, 2023: Re-issued final notification to update the Die Attach Material from HR-5104 to HR-5104T-25 to align with the actual Die Attach Material. There is no change in the material or qualification, only update the Die Attach number.

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

Attachments:

PCN_RMES-07BGQT464_Qual_Report.pdf
PCN_RMES-07BGQT464_Pre and Post Change Summary.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.

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QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: RMES-07BGQT464

Date:
December 21, 2022

Qualification of MMT as an additional assembly site for selected DSPIC33CK32Mx102 and DSPIC33CK64Mx102 device families available in 28L UQFN (4x4x0.6mm) package.

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PACKAGE QUALIFICATION REPORT

Purpose	Qualification of MMT as an additional assembly site for selected DSPIC33CK32Mx102 and DSPIC33CK64Mx102 device families available in 28 UQFN (4x4x0.6mm) package.
CN	E000132413
QUAL ID	R2201090 Rev. A
MP CODE	WACU1MPWXBXF
Part No.	DSPIC33CK32MP102-H/M6
Bonding No.	BD-000836 Rev.02
CCB No.	5257
Package	
Type	28L UQFN
Package size	4 x 4 x 0.6 mm
Lead Frame	
Paddle size	110 x 110 mils
Material	EFTEC64T
Surface	Bare Cu
Process	ETCHED
Lead Lock	YES
Part Number	10102846
Treatment	BOT
Material	
Epoxy	HR-5104T-25
Wire	Au wire
Mold Compound	G700LTD
Plating Composition	Matte Sn

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PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MMT-232500001.000	TC14922491489.200	2238BH1
MMT-232402013.000	TC14922491489.200	2237BDM
MMT-232401445.000	TC14922491489.200	223795A

Result [X] Pass [ ] Fail [ ] _____

28L UQFN (4x4x0.6 mm) assembled by MMT 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 and 150°C System: J750	JESD22-A113	693(0)	0/693		Good Devices
	Bake 150°C, 24 hrs System: CHINEE	JIP/ IPC/JEDEC J-STD-020E		0/693		
	85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH			0/693		
	3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243			0/693		
	Electrical Test: +25°C and 150°C System: J750		693(0)	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		0/231		Parts had been pre-conditioned at 260°C
	Electrical Test: +150°C System: J750		231(0)	0/231	Pass	77 units / lot
	Bond Strength:		15(0)	0/15	Pass	
	Wire Pull (>2.50 grams)					
	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		0/231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C System: J750		231(0)	0/231	Pass	77 units / lot
HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. **Bias Volt:** 3.6 Volts System: HAST 6000X	JESD22-A110		0/231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C and 150°C System: J750		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 and 150°C System: J750	JESD22-A103	 45(0)	0/45 0/45	 Pass	
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)	0/22 0/22 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)	0/22 0/22 0/22	 Pass	
Physical Dimensions	Physical Dimension, 10 units / 1 lot	JESD22-B100/B108	30(0) Units	0/30	Pass	
Bond Strength **Data Assembly**	Wire Pull (>2.50 grams) Bond Shear (>12.60 grams)	Mil. Std. 883-2011 CDF-AEC-Q100-001	30(0) Wires 30(0) bonds	0/30 0/30	Pass Pass	

Affected Catalog Part Numbers (CPN)

DSPIC33CK128MC502T-I/M6
DSPIC33CK256MC102T-I/M6
DSPIC33CK128MC102T-I/M6
DSPIC33CK256MC502T-E/M6
DSPIC33CK128MC502T-E/M6
DSPIC33CK256MC102T-E/M6
DSPIC33CK128MC102T-E/M6
DSPIC33CK64MP102-E/M6
DSPIC33CK32MP102-E/M6
DSPIC33CK64MP102-E/M6C01
DSPIC33CK64MP102-I/M6
DSPIC33CK32MP102-I/M6
DSPIC33CK64MP102-H/M6
DSPIC33CK32MP102-H/M6
DSPIC33CK64MP102T-I/M6
DSPIC33CK32MP102T-I/M6
DSPIC33CK64MP102T-E/M6
DSPIC33CK32MP102T-E/M6
DSPIC33CK64MP102T-E/M6C01
DSPIC33CK64MC102-E/M6
DSPIC33CK32MC102-E/M6
DSPIC33CK64MC102-I/M6
DSPIC33CK32MC102-I/M6
DSPIC33CK64MC102-H/M6
DSPIC33CK32MC102-H/M6
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DSPIC33CK64MC102T-E/M6
DSPIC33CK32MC102T-E/M6
DSPIC33CK256MC502-E/M6
DSPIC33CK128MC502-E/M6
DSPIC33CK256MC102-E/M6
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DSPIC33CK256MC102-I/M6
DSPIC33CK128MC102-I/M6
DSPIC33CK256MC502-H/M6
DSPIC33CK128MC502-H/M6
DSPIC33CK256MC102-H/M6
DSPIC33CK128MC102-H/M6
DSPIC33CK256MC502T-I/M6

CCB 5257
Pre and Post change comparison
PCN #: RMES-07BGQT464

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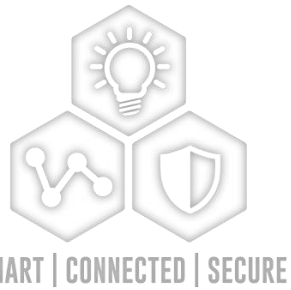
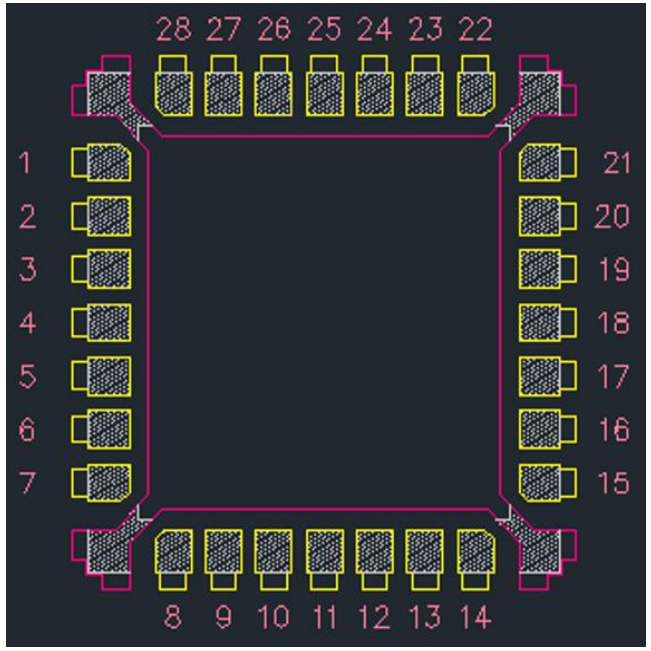


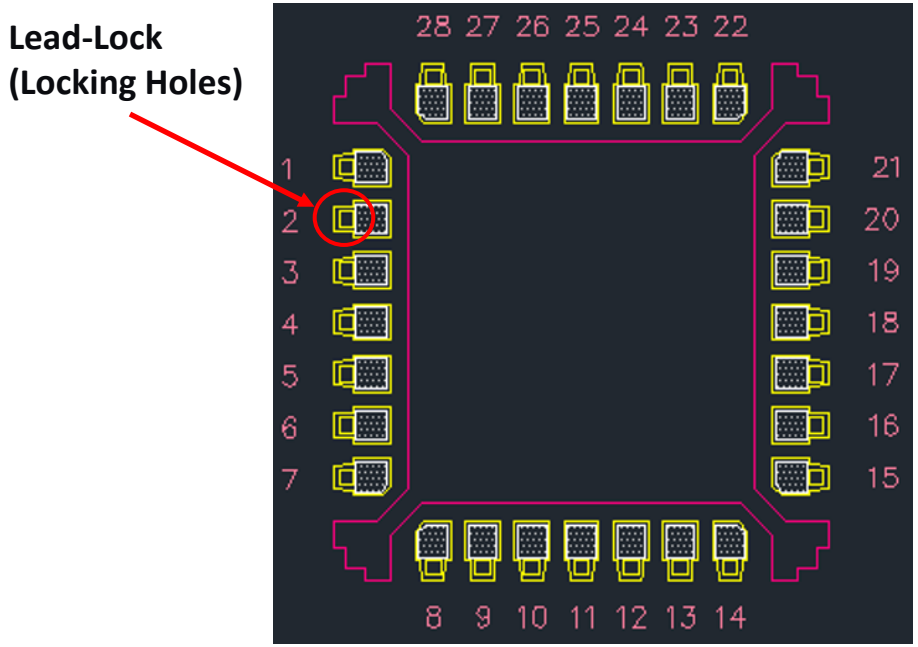
Pre and Post Change Summary – Lead frame comparison

ASE



Lead-Frame Material	C7025
Lead-lock (Locking Holes)	No

MMT



Lead-Frame Material	EFTEC64T
Lead-lock (Locking Holes)	Yes

Note: Mold compound materials fills the lead lock holes, which provides improved protection against moisture penetration along the edge of the leads (pins) of the package.

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