


MICROCHIP
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Product / Process Change Archive

Product / Process Change Notification CYAR-7RTMU5

[Home](#)

The information below reflects a change that is being implemented.

Notice Date: 10/23/2009

Product Category: dsPIC; PIC16xxx; PIC18xxx; PIC24xxx

Notification Subject: CCB# 893: Qualification of High Density Lead Frame in 28L QFN-S & 44L QFN Packages at UNIS Assembly Site

Notification Body:

PCN Status:

Final notification

Microchip Part#s Affected (please see the link for these files at the end of this PCN):

See attachment of Affected package/device in Qualification plan.

[Microchip_Catalog_Part#s_Affected.xls](#)

[Microchip_Catalog_Part#s_Affected.pdf](#)

Description of Change:

Qualification of high density lead frame in 28L QFN-S and 44L QFN packages at UNIS assembly site.

Impacts to Data Sheet:

None

Reason for Change:

To improve on time delivery performance

Change Implementation Status:

In Progress

Estimated First Ship Date:

October 23, 2009 (Date code 0943)

NOTE: Please be advised that during the transition period customers may receive parts with either leadframe, due to existing inventory of the original materials.

Markings to Distinguish Revised from Unrevised Devices: (e.g.: Date Code, Device Marking, Ship Container Marking)

Traceability code

Attachment(s):

[PCN#CYAR_7RTMU5_28L & 44L Package_UNIS assembly_CCB#893_Qual Report.pdf](#)

[CCB893_MCHP Catalog Part# Affected.xls](#) [CCB893_MCHP Catalog Part# Affected.pdf](#)

CATALOG PART_NBR	CATALOG PART_NBR
28L QFN-S	44L QFN
DSPIC30F1010-20E/MM	DSPIC30F2023-20E/ML
DSPIC30F1010-30I/MM	DSPIC30F2023-30I/ML
DSPIC30F1010T-20E/MM	DSPIC30F2023-30I/MLD32
DSPIC30F1010T-30I/MM	DSPIC30F2023-30V/MLD31
DSPIC30F2010-20E/MM	DSPIC30F2023T-20E/ML
DSPIC30F2010-20I/MM	DSPIC30F2023T-30I/ML
DSPIC30F2010-30I/MM	DSPIC30F2023T-30I/MLD32
DSPIC30F2010-30V/MMA31	DSPIC30F2023T-30V/MLD31
DSPIC30F2010T-20E/MM	DSPIC30F3010-20E/ML
DSPIC30F2010T-20E/MM021	DSPIC30F3010-20I/ML
DSPIC30F2010T-20E/MM022	DSPIC30F3010-30I/ML
DSPIC30F2010T-20E/MMG	DSPIC30F3010T-20E/ML
DSPIC30F2010T-20E/MMG020	DSPIC30F3010T-20I/ML
DSPIC30F2010T-20I/MM	DSPIC30F3010T-30I/ML
DSPIC30F2010T-30I/MM	DSPIC30F3011-10I/MLB22
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DSPIC30F2020-20E/MM	DSPIC30F3011-30I/ML
DSPIC30F2020-30I/MM	DSPIC30F3011T-10I/MLB21
DSPIC30F2020-30I/MMB32	DSPIC30F3011T-10I/MLB22
DSPIC30F2020-30I/MMB35	DSPIC30F3011T-20E/ML
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DSPIC30F2020T-30I/MMB32	DSPIC30F3012-20I/ML
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DSPIC33FJ128MC202T-E/MM	DSPIC30F3014T-30I/MLA31
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PIC18F2431T-I/MM	PIC16F874A-I/ML
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PIC18LF2480-I/ML	PIC16F914-I/ML
PIC18LF2480T-I/ML	PIC16F914T-I/ML
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PIC24FJ16GA004T-I/MLB4
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PIC24FJ64GA004-E/ML
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PIC24FJ64GA004-I/MLB4
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QUALIFICATION REPORT

RELIABILITY LABORATORY

Q09072
CCB#: 893
PCN#: CYAR-7RTMU5

Date
October 05, 2009

Qualification of High Density Lead Frame in 28L QFN-S & 44L QFN Packages at UNIS Assembly Site

Distribution

Surasit P.
Wanphen L.
Wichai K.
Chalermpon P.

Rangsun K.
C.K. Barlingay
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MICROCHIP

PACKAGE QUALIFICATION REPORT

Purpose	Qualification of High Density Lead Frame in 28L QFN-S & 44L QFN Packages at UNIS Assembly Site
CN	BC091455
QUAL ID	Q09072
MP CODE	DEDB1TT3XAXF
Part No.	PIC18F4680T-I/ML
Bonding No.	A-032759 Rev. B
<u>Package</u>	
Type	44L QFN
Package size	8x8x0.9 mm
Die thickness	11 mils
Die size	178.00 x 185.80 mils
<u>Lead Frame</u>	
Paddle size	268 x 268 mils
Material	A194
Surface	Bare copper on paddle
Process	Etched
Lead Lock	No
Part Number	440186
<u>Die attach material</u>	
Epoxy	CRM1076DJ
Wire	Au wire / Tanaka (Malaysia)
Mold Compound	G770HCD / Sumitomo (Singapore)
Plating Composition	Matte Tin



MICROCHIP PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Trace Code
UNIS101100040	GRSM409200069.200	0924MC9
UNIS101100041	GRSM409200069.200	0924MCC
UNIS101100042	GRSM409200069.200	0924MCE

Result

☒ Pass ☐ Fail ☐ _____

44L QFN (8x8) assembled by UNIS 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-020C standard.

Prepared By: _____) Date: October 05, 2009 (Reliability Engineer)

(Mr. Udom Suksansakul)

Approved By: _____) Date: October 05, 2009 (Reliability Manager)

(Mr. Surasit Phurikhup)

PACKAGE QUALIFICATION REPORT

Qual Report : Q09072

Test Number (Reference)	Test Condition	Microchip Spec	Qty. (Acc.)	Date in	Date Out	Def/SS.	Result	Remarks
<u>MSL</u> MSL Level 1/260°C	85°C/ 85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH 3x Convection-Reflow 260°C max System: Vitronics Soltec MR1243 (IPC/JEDEC J-STD-020C)	S12/14/16 (PDC)	135	08/20/09	09/01/09	0/135	Pass	
<u>Precondition</u>								
Electrical Test	Electrical Test :+25°C and 85°C System: J750	S12/14/16 (PDC)	693(0)	08/18/09	08/19/09	693		Good Devices
Bake	Bake 150°C, 24 hrs System: CHINEE	PI-92014B		08/21/09	08/22/09	693		
Moisture Soak	85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH	PI-91173B		08/22/09	08/29/09	693		
Convection-Reflow	3x Convection-Reflow 260°C max System: Vitronics Soltec MR1243	PI-91160B		08/29/09	08/29/09	693		
Electrical Test	Electrical Test :+25°C and 85°C System: J750	S12/14/16 (PDC)		09/01/09	09/03/09	0/693	Pass	

PACKAGE QUALIFICATION REPORT

Qual Report : Q09072

Test Number (Reference)	Test Condition	Microchip Spec	Qty. (Acc.)	Date in	Date Out	Def/SS.	Result	Remarks
Temp Cycle	Stress Condition: -65°C to +150°C, 500 Cycles System : TABAI ESPEC TSA-70H Inspection: External crack inspection all units under 40X Optical magnification	PI-91020B		09/04/09	09/20/09	231		Parts had been pre-conditioned at 260°C
		QCI-33003	30(0)	09/20/09	09/20/09	0/30		
	Electrical Test: +85°C System: J750	S12/14/16 (PDC)	231(0)	09/20/09	09/22/09	0/231	Pass	77 units / lot
	Bond Strength: Bond Shear (9.50 grams) Wire Pull (> 3 grams)	QCI-91022	15 (0)	09/22/09	09/22/09	0/15	Pass	
			15 (0)	09/22/09	09/22/09	0/15	Pass	
Pressure Cooker	Stress Condition: +121°C, 100% RH, 15 PSI, 96 hrs. System: HIRAYAMA TPC-422R	PI-92013B		09/02/09	09/07/09	231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C System: J750	S12/14/16 (PDC)	231(0)	09/07/09	09/11/09	0/231	Pass	77 units / lot

PACKAGE QUALIFICATION REPORT

Qual Report : Q09072

Test Number (Reference)	Test Condition	Microchip Spec	Qty. (Acc.)	Date in	Date Out	Def/SS.	Result	Remarks
HAST	Stress Condition: +130°C/85%RH, 96 hrs. System: HAST 6000X	PI-92010B		09/02/09	09/09/09	231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C and 85°C System: J750	S12/14/16 (PDC)	231(0)	09/09/09	09/12/09	0/231	Pass	77 units / lot
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: ERS A RA 2200D Visual Inspection: External Visual Inspection	QCI-31003	22 (0)	09/04/09 09/05/09 09/05/09	09/05/09 09/05/09 09/05/09	22 22 0/22	Pass	
Bond Strength Data Assembly	Bond Shear (9.50 grams)	QCI-91022	30 (0) bonds	-	-	0/30	Pass	
	Wire Pull (> 4 grams)		30 (0) wires	-	-	0/30	Pass	