Date: 11 Mar 2011

Product Category: 8-bit Microcontrollers; Analog (Linear & Mixed Signal) AND Interface

Device Family: 

Notification subject: CCB 1039: Qualification of a larger lead frame paddle size in 44L MQFP package at ALPH (MMT).

Notification text:

PCN Status:
Initial notification

Microchip Parts Affected:
See attachments of affected catalog part numbers (CPN) labeled as…
PCN_CYER-04QPRX982 _Affected_CPN.xls
PCN_CYER-04QPRX982_Affected_CPN.pdf

Description of Change:
Qualification of a larger lead frame paddle size in 44L MQFP package at ALPH (MMT).

Pre Change:
252 x 252 mils paddle

Post Change:
275 x 275 mils paddle

Impacts to Data Sheet:
None

Reason for Change:
To Improve Manufacturability

Change Implementation Status:
In Progress

Estimated First Ship Date:
June 30, 2011 (date code: 1127)

NOTE: Please be advised that during the transition period customers may receive pre and post change parts, due to existing inventory of the pre changed parts.

Markings to Distinguish Revised from Unrevised Devices:
Traceability code

Revision History:
March 11, 2011: Issued initial notification.

Attachment(s):

PCN_CYER-04QPRX982_Affected_CPN.pdf PCN_CYER-04QPRX982_Affected_CPN.xls PCN_CYER-04QPRX982_Qual Plan.pdf

Please contact your local Microchip sales office with questions or concerns regarding this notification.

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Product Change Notification - CYER-04QPRX982 (Printer Friendly)

PCN_CYER-04QPRX982
CATALOG_PART_NBR
PIC16C64A-04/PQ
PIC16C64A-04I/PQ
PIC16C64A-10/PQ
PIC16C64A-20/PQ
PIC16C64A-20I/PQ
PIC16C64AT-04I/PQ
PIC16C64AT-10/PQ
PIC16C65A-04/PQ
PIC16C65A-04I/PQ
PIC16C65A-10I/PQ
PIC16C65A-20/PQ
PIC16C65A-20I/PQ
PIC16C65B-04/PQ
PIC16C65B-04I/PQ
PIC16C65B-20/PQ
PIC16C65B-20I/PQ
PIC16C67-04/PQ
PIC16C67-04I/PQ
PIC16C67-20/PQ
PIC16C67-20I/PQ
PIC16C67T-20I/PQ
PIC16C74A-04/PQ
PIC16C74A-04I/PQ
PIC16C74A-10/PQ
PIC16C74A-10I/PQ
PIC16C74A-20/PQ
PIC16C74A-20E/PQ
PIC16C74A-20I/PQ
PIC16C74B-04/PQ
PIC16C74B-04I/PQ
PIC16C74B-20/PQ
PIC16C74B-20I/PQ
PIC16C77-04/PQ
PIC16C77-20/PQ
PIC16C77-20I/PQ
PIC16C774-I/PQ
PIC16F874-04/PQ
PIC16F874-04I/PQ
PIC16F874-20/PQ
PIC16F874-20I/PQ
PIC16F874T-04/PQ
PIC16F874T-04I/PQ
PIC16F874T-20/PQ
PIC16F877-04/PQ
PIC16F877-04E/PQ
PIC16F877-04I/PQ
PIC16F877-10E/PQ
PIC16F877-20/PQ
PIC16F877-20I/PQ
PIC16F877T-20/PQ

PIC16F877T-20I/PQ
PIC16LC64A-04/PQ
PIC16LC64A-04I/PQ
PIC16LC65A-04/PQ
PIC16LC65A-04I/PQ
PIC16LC65B-04/PQ
PIC16LC65B-04I/PQ
PIC16LC67-04I/PQ
PIC16LC67T-04I/PQ
PIC16LC74A-04/PQ
PIC16LC74A-04I/PQ
PIC16LC74B-04/PQ
PIC16LC74B-04I/PQ
PIC16LC77-04/PQ
PIC16LC77-04I/PQ
PIC16LC774-I/PQ
PIC16LC774T-I/PQ
PIC16LF874-04/PQ
PIC16LF874-04I/PQ
PIC16LF877-04/PQ
PIC16LF877-04I/PQ
PIC17C42A-16/PQ
PIC17C42A-16I/PQ
PIC17C42A-25/PQ
PIC17C42A-33/PQ
PIC17C43-16/PQ
PIC17C43-25/PQ
PIC17C43-33/PQ
PIC17C43-33I/PQ
PIC17C44-16/PQ
PIC17C44-16I/PQ
PIC17C44-25/PQ
PIC17C44-25I/PQ
PIC17C44-33I/PQ
PIC17LC44-08/PQ
PIC17LC44-08I/PQ
PIC17LC44T-08I/PQ
PIC17LC44T-08I/PQ025
TC7106ACKW
TC7106ACKW713
TC7106AIKW
TC7106AIKW713
TC7106CKW
TC7106CKW713
TC7106IKW
TC7106IKW713
TC7107ACKW
TC7107ACKW713
TC7107AIKW
TC7107AIKW713
TC7107CKW
TC7107CKW713

TC7107IKW
TC7107IKW713
TC7109ACKW
TC7109CKW
TC7109CKW713
TC7116ACKW
TC7116CKW
TC7116CKW713
TC7117ACKW
TC7117CKW
TC835CKW

Parts Affected

PIC16C64A
PIC16C65A
PIC16C65B
PIC16C67
PIC16C74A
PIC16C74B
PIC16C77
PIC16C774
PIC16F874
PIC16F877
PIC17C42A
PIC17C43
PIC17C44
TC7106A
TC7106
TC7107A
TC7107
TC7109A
TC7109
TC7116A
TC7116
TC7117A
TC7117
TC835

QUALIFICATION PLAN

PCN#: CYER-04QPRX982

Date:
Mar 9, 2011

Qualification of a larger lead frame paddle size in 44L MQFP package at ALPH (MMT)

Distribution

Surasit P.	Rangsun K.
Wanphen L.	A. Navarro
Wichai K.	R. Sharma
Chaweng W.	

Microchip Technology (Thailand) Co., Ltd.
14 Moo 1 T. Wangtakien A. Muangchacherngsao,
Chacherngsao, Thailand, 24000
Tel. (6638) 857119-45, 857311-19 ext. 1231
Fax (6638) 857149-50

Purpose: Qualification of a larger lead frame paddle size in 44L MQFP package at ALPH (MMT)

MP code: A5AF17T8XI04

Part No.: PIC16F877-04I/PQ

BD No: BDE-000023 rev.A (Engineering BD)

CCB No: 1039

Package:

Type 44L MQFP

Width or Size 10x10x2mm

Die thickness: 15 mils

Die size: 179.20 x 199.60 mils

Lead frame:

Paddle size: 275 x 275 mils

Material C7025

Surface Ag ring plated on paddle

Process Stamped

Lead Lock Yes

Part Number N/A

Wire:

Material Au/ MKE (KOREA)

Die Attach Epoxy:

Part Number 3280/ Ablestik (USA)

Conductive Yes

Mold Compound: G600 / Sumitomo (Singapore)

Reliability Test plan: See attached, STD Package Reliability Test plan on each package.

Test Name	Conditions	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	Special Instructions
Standard Pb-free Solderability	JESD22B-102E; Perform 8 hour steam aging for Matte tin finish and 1 hour steam aging for NiPdAu finish prior to testing. Standard Pb-free: Matte tin/ NiPdAu finish, SAC solder, wetting temp 245°C for both SMD & through hole packages.	22	5	1	27	> 95% lead coverage	5	Standard Pb-free solderability is the requirement. SnPb solderability (backward solderability—SMD reflow soldering) is required for any plating related changes and highly recommended for other package BOM changes.
Wire Bond Pull - WBP	Mil. Std. 883-2011	5	0	1	5	0 fails after TC	5	30 bonds from a minimum of 5 devices.
Wire Bond Shear - WBS	CDF-AEC-Q100-001	5	0	1	5	0	5	30 bonds from a minimum of 5 devices.
Wire Sweep		15	15	3	15	0	5	
External Visual	Mil. Std. 883-2009/2010	All devices prior to submission for qualification testing	0	3	ALL	0	5	
HTSL (High Temp Storage Life)	+175 C for 504 hours or 150°C for 1008 hrs. Electrical test pre and post stress at +25C and hot temp.	45	5	1	50	0	10	Must be in progress at time of package release to production, but completion is not required for release to production. For hot temp testing, pre/post test 1 lot at 85°C and 125°C (if applicable)
Preconditioning - Required for surface mount devices	+150°C Bake for 24 hours, moisture loading requirements per MSL level + 3X reflow at peak reflow temperature per Jedec-STD-020C for package type; Electrical test pre and post stress at +25°C. Perform SAM analysis using the standard sample size. MSL-3 @ 260°C	231	15	3	738	0	15	Spares should be properly identified. 77 parts from each lot to be used for HAST, Autoclave, Temp Cycle test.

Test Name	Conditions	Sample Size	Min. Qty of Spares per Lot (should be properly marked)	Qty of Lots	Total Units	Fail Accept Qty	Est. Dur. Days	Special Instructions
HAST	+130°C/85% RH for 96 hours. Electrical test pre and post stress at +25°C and hot temp.	77	5	3	246	0	10	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
Unbiased HAST	+130°C/85% RH for 96 hrs or +110°C/85% RH for 264 hrs	77	5	3	246	0	10	Spares should be properly identified. Use the parts which have gone through Pre-conditioning.
Temp Cycle	-65°C to +150°C for 500 cycles. Electrical test pre and post stress at hot temp; 3 gram force WBP, on 5 devices from 1 lot, test following Temp Cycle stress.	77	5	3	246	0	15	Spares should be properly identified. Use the parts which have gone through Pre-conditioning. For hot temp testing, pre/post test 1 lot at 85°C and 125°C (if applicable).