


Date: 22 Feb 2011

Product Category: 8-bit Microcontrollers; Analog (Thermal, Power Management & Safety); Analog (Linear & Mixed Signal) AND Interface; Touch Sensing Technologies

Device Family:  

Notification subject: CCB 1029.02: Qualification of 16 & 20L QFN (4x4) packages with EFTEC-64T leadframe at NSEB (UTL)

Notification text: PCN Status:
Initial notification

Microchip Parts Affected:
See attachments of affected catalog part numbers (CPN) labeled as...
PCN_CYER-07UMLO591_Affected_CPN.xls
PCN_CYER-07UMLO591_Affected_CPN.pdf

Description of Change:
Qualification of 16 & 20L QFN (4x4) packages with EFTEC-64T leadframe at NSEB (UTL).

Pre Change:
C194

Post Change:
EFTEC-64T

Impacts to Data Sheet:
None

Reason for Change:
Improve manufacturability

Change Implementation Status:
Not initiated

Estimated First Ship Date:
May 30, 2011 (Date code 1123)

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

PCN CYER-07YNRE108 Document Revision History:
February 22, 2011: Initial notice issued.

Attachment(s):

[PCN_CYER-07UMLO591_Affected_CPN.pdf](#) [PCN_CYER-07UMLO591_Affected_CPN.xls](#) [PCN_CYER-07UMLO591_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-07UMLO591

PCN_CYER-07UMLO591
CATALOG PART_NBR
AR1010-I/ML
AR1010T-I/ML
AR1020-I/ML
AR1020T-I/ML
HA0121-I/ML
HA0121T-I/ML
HA1218-I/ML
HA1218T-I/ML
HA1379-I/ML
HA1379T-I/ML
MCP1631-E/ML
MCP1631T-E/ML
MCP1631V-E/ML
MCP1631VT-E/ML
MCP23008-E/ML
MCP23008T-E/ML
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PS810-I/ML

Parts Affected

PIC16F687
PIC16F685
MCP73861
MCP73862
PIC16F1824
PIC16F610
PIC16F616
PIC16F636
PIC16F677
PIC16F684
PIC16F688
PIC16F689
PIC16F690
PIC16F785
MCP23S08
AR1010
AR1020
MCP1631
MCP1631V
MCP23008
MCP2515
MCP3901
MCP4231
MCP4241
MCP4251
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MCP73864
MCP73871
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PIC16F1829
PIC16F630
PIC16F631
PIC16F676
PIC16F720
PIC16F721
PIC18F13K22
PIC18F14K22
PS810



MICROCHIP

QUALIFICATION PLAN

PCN #: CYER-07UMLO591

February 2, 2011

Qualification of 16L QFN (4x4) packages with EFTEC-64T leadframe at NSEB (UTL). The 20L QFN (4x4) packages will qualify by similarity.

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Purpose: _____ Qualification of 16L QFN (4x4) packages with EFTEC-64T leadframe at NSEB (UTL). The 20L QFN (4x4) packages will qualify by similarity.

MP code: _____ DE0307D5XA01

Part No.: _____ PS810-I/ML

BD No: _____ BDM-000007 (Engineering BD)

CCB No: _____ 1029.02

Package:

Type _____ 16L QFN

Width or Size _____ 4x4x0.9mm

Die thickness: _____ 11 mils

Die size: _____ 97.60 x 98.90 mils

Lead frame:

Paddle size: _____ 110 x 110 mils

Material _____ EFTEC-64T

Surface _____ Copper with Ag on lead only

Process _____ Etched

Lead Lock _____ Yes

Part Number _____ FR0224

Wire:

Material _____ Au wire / Tanaka , Malaysia

Die Attach Epoxy:

Part Number _____ 8200T / Ablestik , USA

Conductive _____ Yes

Mold Compound: _____ G770HCD / 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.	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.
	Standard Pb-free: Matte tin/ NiPdAu finish, SAC solder, wetting temp 245°C for both SMD & through hole packages.							
Backward Solderability	JESD22B-102E; Perform 8 hours steam aging for Matte tin finish and 1 hour steam aging for NiPdAu finish prior to testing. Backward: Matte tin/ NiPdAu finish, SnPb solder, wetting temp 215°C for SMD.	22	5	1	27	> 95% lead coverage	5	
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.
Bond Line Thickness (BLT) robustness assessment						>0.5 mils		For Engineering Info only. Recommended for packages where the die is susceptible to cracking and for packages where a non-conductive die attach is used when the substrate is referenced to V _{DD} vs. ground. but should be tested during Package Qualification
Wire Sweep								Required for any reduction in wire bond thickness.
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)

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
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 Jeduc-STD-020C for package type; Electrical test pre and post stress at +25°C. Perform SAM analysis using the standard sample size. MSL-1 @ 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.
HAST	+130°C/85% RH for 96 hours. Electrical test pre and post stress at +25°C and hot temp. 1 lot to be tested at 85°C and 125°C	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. 1 lot to be tested at 85°C and 125°C	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).