



*A Leading Provider of Microcontrollers & Analog Semiconductors*

**Date:** 19 Mar 2013

**Product Category:** Memory; RF and Security; 8-bit Microcontrollers

**Device Family:**  

**Notification subject:** CCB 1214.02 Initial Notice: Qualification of 8L SOIJ package without silver plating on the paddle and lead lock feature on lead-frame at NSEB assembly site.

**Notification text:** PCN Status:  
Initial notification

Microchip Parts Affected:  
See attachments of affected catalog part numbers (CPN) labeled as...  
PCN\_CYER-22JUMC972\_Affected\_CPN.xls  
PCN\_CYER-22JUMC972\_Affected\_CPN.pdf

Description of Change:  
Qualification of 8L SOIJ package without silver plating on the paddle and lead lock feature on lead-frame as MSL-3 at NSEB assembly site.

Pre Change:  
Silver plated paddle and lead lock feature on lead-frame

Post Change:  
Bare Cu paddle and no lead lock feature on lead-frame

Impacts to Data Sheet:  
None

Reason for Change:  
To improve manufacturability

Change Implementation Status:  
In Progress

Estimated First Ship Date:  
May 30, 2013 (date code: 1322)

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

Markings to Distinguish Revised from Unrevised Devices:

### Traceability code

#### Revision History:

February 28, 2013: Issued initial notification.

March 19, 2013: Corrected the date code typo from 1409 to 1322.

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

#### Attachment(s):

[PCN\\_CYER-22JUMC972\\_Affected\\_CPN.xls](#) [PCN\\_CYER-22JUMC972\\_Affected\\_CPN.pdf](#) [PCN\\_CYER-22JUMC972\\_Qual Plan.pdf](#)

Please contact your local [Microchip sales office](#) with questions or concerns regarding this notification.

#### Terms and Conditions:

If you wish to change your product/process change notification (PCN) profile please log on to our website at <http://www.microchip.com/PCN> sign into myMICROCHIP to open the myMICROCHIP home page, then select a profile option from the left navigation bar.

To opt out of future offer or information emails (other than product change notification emails), click here to go to [microchipDIRECT](#) and login, then click on the "My account" link, click on "Update profile" and un-check the box that states "Future offers or information about Microchip's products or services."

## Product Change Notification - CYER-22JUMC972

---

Parts Affected

24AA1025  
24AA1026  
24AA128  
24AA256  
24AA32A  
24AA512  
24AA515  
24AA65  
24C65  
24FC1025  
24FC1026  
24FC128  
24FC256  
24FC512  
24FC515  
24LC1025  
24LC1026  
24LC128  
24LC256  
24LC32A  
24LC512  
24LC515  
24LC64  
24LC65  
25AA1024  
25AA128  
25AA256  
25AA512  
25LC1024  
25LC128  
25LC256  
25LC512  
93C46B  
93LC46A  
93LC46B  
93LC56A  
93LC56B  
93LC66A  
93LC66B  
HCS365  
PIC12C508  
PIC12C508A  
PIC12C509

PIC12C509A  
PIC12C671  
PIC12C672  
PIC12CE518  
PIC12CE519  
PIC12CR509A  
PIC12F509

| PCN_CYER-22JUMC972 |
|--------------------|
| CATALOG_PART_NBR   |
| 24AA1025-I/SM      |
| 24AA1025T-I/SM     |
| 24AA1026-I/SM      |
| 24AA1026T-I/SM     |
| 24AA128-I/SM       |
| 24AA128T-I/SM      |
| 24AA256/SM         |
| 24AA256-E/SM       |
| 24AA256-I/SM       |
| 24AA256T/SM        |
| 24AA256T-E/SM      |
| 24AA256T-I/SM      |
| 24AA32A/SM         |
| 24AA32A-I/SM       |
| 24AA32AT/SM        |
| 24AA32AT-I/SM      |
| 24AA512-I/SM       |
| 24AA512-I/SMRVE    |
| 24AA512T-I/SM      |
| 24AA512T-I/SMRVE   |
| 24AA515-I/SM       |
| 24AA515T-I/SM      |
| 24AA65/SM          |
| 24AA65T/SM         |
| 24C65/SM           |
| 24C65-I/SM         |
| 24C65T/SM          |
| 24C65T-I/SM        |
| 24FC1025-I/SM      |
| 24FC1025T-I/SM     |
| 24FC1025T-I/SMC79  |
| 24FC1026-I/SM      |
| 24FC1026T-I/SM     |
| 24FC128-I/SM       |
| 24FC128T-I/SM      |
| 24FC256-I/SM       |
| 24FC256T-I/SM      |
| 24FC512-I/SM       |
| 24FC512T-I/SM      |
| 24FC512T-I/SMRVE   |
| 24FC515-I/SM       |
| 24FC515T-I/SM      |
| 24LC1025-E/SM      |
| 24LC1025-I/SM      |
| 24LC1025T-E/SM     |
| 24LC1025T-I/SM     |
| 24LC1026-E/SM      |
| 24LC1026-I/SM      |
| 24LC1026T-E/SM     |
| 24LC1026T-I/SM     |

|                      |
|----------------------|
| 24LC128-E/SM         |
| 24LC128-I/SM         |
| 24LC128T-E/SM        |
| 24LC128T-I/SM        |
| 24LC256-E/SM         |
| 24LC256-I/SM         |
| 24LC256-I/SMRVE      |
| 24LC256T-E/SM        |
| 24LC256T-I/SM        |
| 24LC256T-I/SMRVE     |
| 24LC32A/SM           |
| 24LC32A-E/SM         |
| 24LC32A-I/SM         |
| 24LC32AT/SM          |
| 24LC32AT-E/SM        |
| 24LC32AT-I/SM        |
| 24LC512-E/SM         |
| 24LC512-I/SM         |
| 24LC512-I/SMA21      |
| 24LC512-I/SMRVE      |
| 24LC512T-E/SM        |
| 24LC512T-I/SM        |
| 24LC512T-I/SMRVE     |
| 24LC515-I/SM         |
| 24LC515T-I/SM        |
| 24LC64-I/SMRVE       |
| 24LC64T-I/SMRVE      |
| 24LC65/SM            |
| 24LC65-I/SM          |
| 24LC65T/SM           |
| 24LC65T-I/SM         |
| 25AA1024-I/SM        |
| 25AA1024-I/SMB21     |
| 25AA1024T-I/SM       |
| 25AA1024T-I/SMB21    |
| 25AA128-I/SM         |
| 25AA128T-I/SM        |
| 25AA256-E/SM         |
| 25AA256-I/SM         |
| 25AA256T-E/SM        |
| 25AA256T-I/SM        |
| 25AA512-I/SM         |
| 25AA512T-I/SM        |
| 25LC1024-E/SM        |
| 25LC1024-I/SM        |
| 25LC1024-I/SM16KA79  |
| 25LC1024-I/SMA21     |
| 25LC1024T-E/SM       |
| 25LC1024T-I/SM       |
| 25LC1024T-I/SM16KA79 |
| 25LC128-E/SM         |
| 25LC128-I/SM         |

|                     |
|---------------------|
| 25LC128T-E/SM       |
| 25LC128T-I/SM       |
| 25LC256-E/SM        |
| 25LC256-I/SM        |
| 25LC256T-E/SM       |
| 25LC256T-I/SM       |
| 25LC512-E/SM        |
| 25LC512-I/SM        |
| 25LC512T-E/SM       |
| 25LC512T-I/SM       |
| 93C46B/SMROCRVA     |
| 93C46B/SMRVA        |
| 93C46B-E/SMROCRVA   |
| 93C46B-E/SMRVA      |
| 93C46B-I/SMROCRVA   |
| 93C46B-I/SMRVA      |
| 93C46BT/SMROCRVA    |
| 93C46BT/SMRVA       |
| 93C46BT-E/SMRVA     |
| 93C46BT-I/SMROCRVA  |
| 93C46BT-I/SMRVA     |
| 93LC46A/SMROCRVA    |
| 93LC46A/SMRVA       |
| 93LC46A-I/SMRVA     |
| 93LC46AT/SMROCRVA   |
| 93LC46AT-I/SMROCRVA |
| 93LC46AT-I/SMRVA    |
| 93LC46B/SMROCRVA    |
| 93LC46B/SMRVA       |
| 93LC46B-I/SMROCRVA  |
| 93LC46B-I/SMRVA     |
| 93LC46BT/SMROCRVA   |
| 93LC46BT/SMRVA      |
| 93LC46BT-I/SMROCRVA |
| 93LC46BT-I/SMRVA    |
| 93LC56A/SMRVA       |
| 93LC56A-I/SMRVA     |
| 93LC56AT/SMRVA      |
| 93LC56AT-I/SMRVA    |
| 93LC56B/SMRVA       |
| 93LC56BT/SMRVA      |
| 93LC56BT-I/SMRVA    |
| 93LC66A/SMRVA       |
| 93LC66A-I/SMRVA     |
| 93LC66AT/SMRVA      |
| 93LC66AT-I/SMRVA    |
| 93LC66B/SMRVA       |
| 93LC66B-I/SMRVA     |
| 93LC66BT-I/SMRVA    |
| HCS365/SM           |
| HCS365-I/SM         |
| HCS365T/SM          |

|                       |
|-----------------------|
| HCS365T-I/SM          |
| PIC12C508-04/SM       |
| PIC12C508-04E/SM      |
| PIC12C508-04I/SM      |
| PIC12C508A-04/SM      |
| PIC12C508A-04/SM022   |
| PIC12C508A-04/SM048   |
| PIC12C508A-04/SM073   |
| PIC12C508A-04/SM127   |
| PIC12C508A-04E/SM     |
| PIC12C508A-04I/SM     |
| PIC12C508AT-04/SM     |
| PIC12C508AT-04/SM096  |
| PIC12C508AT-04/SM139  |
| PIC12C508AT-04/SM224  |
| PIC12C508AT-04/SM233  |
| PIC12C508AT-04E/SM    |
| PIC12C508AT-04I/SM    |
| PIC12C508AT-04I/SM023 |
| PIC12C508AT-04I/SM112 |
| PIC12C508AT-04I/SM142 |
| PIC12C508AT-04I/SM144 |
| PIC12C508AT-04I/SM194 |
| PIC12C508AT-04I/SM216 |
| PIC12C508AT-04I/SM218 |
| PIC12C508AT-04I/SM220 |
| PIC12C508AT-04I/SM224 |
| PIC12C508AT-04I/SM226 |
| PIC12C508T-04/SM      |
| PIC12C508T-04/SM038   |
| PIC12C508T-04I/SM     |
| PIC12C508T-04I/SM077  |
| PIC12C509-04/SM       |
| PIC12C509-04E/SM      |
| PIC12C509-04I/SM      |
| PIC12C509A-04/SM      |
| PIC12C509A-04E/SM     |
| PIC12C509A-04I/SM     |
| PIC12C509AT-04/SM     |
| PIC12C509AT-04/SM022  |
| PIC12C509AT-04/SM091  |
| PIC12C509AT-04E/SM    |
| PIC12C509AT-04I/SM    |
| PIC12C509AT-04I/SM021 |
| PIC12C509AT-04I/SM135 |
| PIC12C509T-04/SM      |
| PIC12C509T-04E/SM     |
| PIC12C509T-04I/SM     |
| PIC12C509T-04I/SM030  |
| PIC12C671-04/SM       |
| PIC12C671-04E/SM      |
| PIC12C671-04I/SM      |



|                        |
|------------------------|
| PIC12C671-04I/SM050    |
| PIC12C671-10/SM        |
| PIC12C671-10E/SM       |
| PIC12C671-10I/SM       |
| PIC12C671T-04/SM       |
| PIC12C671T-04/SM067    |
| PIC12C671T-04E/SM      |
| PIC12C671T-04I/SM      |
| PIC12C671T-04I/SM040   |
| PIC12C671T-04I/SM044   |
| PIC12C671T-04I/SM051   |
| PIC12C671T-04I/SM056   |
| PIC12C671T-04I/SM066   |
| PIC12C671T-04I/SM068   |
| PIC12C671T-04I/SMG030  |
| PIC12C671T-10/SM       |
| PIC12C671T-10I/SM      |
| PIC12C671T-10I/SM070   |
| PIC12C672-04/SM        |
| PIC12C672-04E/SM       |
| PIC12C672-04I/SM       |
| PIC12C672-10/SM        |
| PIC12C672-10E/SM       |
| PIC12C672-10I/SM       |
| PIC12C672T-04/SM       |
| PIC12C672T-04I/SM      |
| PIC12C672T-04I/SM028   |
| PIC12C672T-10/SM       |
| PIC12CE518-04/SM       |
| PIC12CE518-04E/SM      |
| PIC12CE518-04I/SM      |
| PIC12CE518T-04/SM      |
| PIC12CE518T-04I/SM     |
| PIC12CE519-04/SM       |
| PIC12CE519-04E/SM      |
| PIC12CE519-04I/SM      |
| PIC12CE519T-04/SM      |
| PIC12CE519T-04I/SM     |
| PIC12CR509AT-04I/SM021 |
| PIC12F509-E/SM         |
| PIC12F509-I/SM         |
| PIC12F509T-E/SM        |
| PIC12F509T-I/SM        |
| PIC12F509T-I/SM034     |
| PIC12F509T-I/SM035     |
| PIC12F509T-I/SM036     |
| PIC12F509T-I/SM037     |
| PIC12F509T-I/SM038     |
| PIC12LC508A-04/SM      |
| PIC12LC508A-04I/SM     |
| PIC12LC508AT-04/SM     |
| PIC12LC508AT-04I/SM    |

|                        |
|------------------------|
| PIC12LC508AT-04I/SM172 |
| PIC12LC509A-04/SM      |
| PIC12LC509A-04I/SM     |
| PIC12LC509AT-04/SM     |
| PIC12LC509AT-04I/SM    |
| PIC12LC671-04/SM       |
| PIC12LC671-04I/SM      |
| PIC12LC671T-04/SM      |
| PIC12LC671T-04I/SM     |
| PIC12LC672-04/SM       |
| PIC12LC672-04I/SM      |
| PIC12LC672T-04/SM      |
| PIC12LCE518-04/SM      |
| PIC12LCE518-04I/SM     |
| PIC12LCE518T-04/SM026  |
| PIC12LCE519-04/SM      |
| PIC12LCE519-04I/SM     |
| PIC12LCE519T-04/SM     |
| PIC12LCE519T-04I/SM    |



**MICROCHIP**

## **QUALIFICATION PLAN**

**PCN #: CYER-22JUMC972**

**Date:  
Feb 14, 2013**

**Qualification of 8L SOIJ package without silver plating  
on the paddle at NSEB assembly site.**

Distribution

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

Rangsun K.  
A. Navarro  
R. Sharma

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 8L SOIJ package without silver plating on the paddle at NSEB assembly site.

**MP code:** \_\_\_\_\_ 36002

**Part No.:** \_\_\_\_\_ 24FC515

**BD No:** \_\_\_\_\_ BDM-000297 rev. A (Engineering bonding)

**CCB No:** \_\_\_\_\_ 1214.02

**Package:**

**Type** \_\_\_\_\_ 8L SOIJ

**Width or Size** \_\_\_\_\_ .208in

**Die thickness:** \_\_\_\_\_ 8 mils, top and bottom die

**Die size:** \_\_\_\_\_ 105.6 x 78.3 (C5AC4, top die) and 119.2 x 143.1 mils (B5AE4, bottom die)

**Lead frame:**

**Paddle size:** \_\_\_\_\_ 140 x 160 mils

**Material** \_\_\_\_\_ C194

**Surface** \_\_\_\_\_ Ag on lead only

**Process** \_\_\_\_\_ Stamp

**Lead Lock** \_\_\_\_\_ No

**Part Number** \_\_\_\_\_ FD0379

**Wire:**

**Material** \_\_\_\_\_ Au wire

**Die Attach Epoxy:**

**Part Number** \_\_\_\_\_ Die attach film, HS-231W

**Conductive** \_\_\_\_\_ No

**Mold Compound:** \_\_\_\_\_ G600

**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.<br><br>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. |
| Backward Solderability                               | JESD22B-102E; Perform 8 hours steam aging for Matte tin finish and 1 hour steam aging for NiPdAu finish prior to testing.<br><br>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                   | 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   |  |   |  |             |             |                     |                | Required for any reduction in wire bond thickness.  |
| Physical Dimensions                                  | Measure per JESD22 B100 and B108   | 10  | 0  | 3           | 30          | 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 85C.  | 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-020D 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.   |

| 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 85C.   | 77          | 5  | 3           | 246         | 0               | 10             | 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)  |
| Unbiased HAST | +130°C/85% RH for 96 hrs. Electrical test pre and post stress at +25°C.  | 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. Electrical test pre and post stress at +25°C and hot temp 85C. | 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). |