# Product Change Notification / ASER-15HQCX332

## Date:

20-Oct-2021

## Product Category:

Analog to Digital Converters

## PCN Type:

Manufacturing Change

## Notification Subject:

CCB 4903 Final Notice: Qualification of a new lead frame design for selected MCP342xxx device family available in 10L MSOP (3x3mm) package.

## Affected CPNs:

ASER-15HQCX332_Affected_CPN_10202021.pdf
ASER-15HQCX332_Affected_CPN_10202021.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 a new lead frame design for selected MCP342xxx device family available in 10L MSOP (3x3mm) package.

**Pre and Post Change Summary:**

| | **Pre Change** | **Post Change** |
|---|---|---|

| Assembly Site | UTAC Thai Limited (UTL-1) LTD. (NSEB) | UTAC Thai Limited (UTL-1) LTD. (NSEB) |
|---|---|---|
| Wire Material | Au | Au |
| Die Attach Material | 8200T | 8200T |
| Molding Compound Material | G600 | G600 |
| Lead-Frame Material | C7025 | C7025 |
| Lead-Frame Paddle Size | 82x94 mil | 68x94 mil |
| Lead-Frame Lead Lock | 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 a new lead frame design.

**Change Implementation Status:**In Progress

**Estimated First Ship Date:**10/30/21 (date code: 2144)

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

**Time Table Summary:**

| | **October 2021** | | | | |
|---|---|---|---|---|---|
| Workweek | 41 | 42 | 43 | 44 | 45 |
| Qual Report Availability | | | x | | |
| Final PCN Issue Date | | | x | | |
| Estimated Implementation Date | | | | x | |

**Method to Identify Change:**Traceability code

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

**Revision History:**October 20, 2021: Issued final notification.

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

## Attachments:

PCN_ASER-15HQCX332 Qual Report 1 of 2.pdf
PCN_ASER-15HQCX332 Qual Report 2 of 2.pdf
PCN_ASER-15HQCX332_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.

If you wish to change your PCN profile, including opt out, please go to the PCN home page select login and sign into your myMicrochip account. Select a profile option from the left navigation bar and make the applicable selections.

# QUALIFICATION REPORT SUMMARY

## PCN #: ASER-15HQCX332

**Date:**
**Aug 05, 2019**

## Qualification of a new lead frame design for selected MCP342xxx device family available in 10L MSOP (3x3mm) package. This is a qualification by similarity.

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| | |
|---|---|
| **Purpose** | Qualification of a new lead frame design for selected MCP342xxx device family available in 10L MSOP (3x3mm) package. This is a qualification by similarity. |
| **CCB** | 2929.001 & 4903 |
| **CN** | ES295627 |
| **QUAL ID** | Q19076 Rev. A |
| **MP CODE** | TAPA44E3XA11 |
| **Part No.** | MCP33111-10-E/MS |
| **Bonding No.** | BDE-005353 Rev. 01 |

### Package

| | |
|---|---|
| **Type** | 10L MSOP |
| **Package size** | 3 x 3 mm. |

### Lead Frame

| | |
|---|---|
| **Paddle size** | 82 x 94 mils |
| **Material** | C7025 |
| **Surface** | Ag Spot plated |
| **Process** | Stamped |
| **Lead Lock** | No |
| **Part Number** | FM0009 |
| **Treatment** | None |

### Material

| | |
|---|---|
| **Epoxy** | 8200T |
| **Wire** | Au wire |
| **Mold Compound** | G600 |
| **Plating Composition** | Matte Tin |

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# PACKAGE QUALIFICATION REPORT

## Manufacturing Information

| Assembly Lot No. | Wafer Lot No. | Date Code |
|---|---|---|
| NSEB200400001.000 | TC08919468004.400 | 1917T0M |
| NSEB200400002.000 | TC08919468004.400 | 1917T0R |
| NSEB200400003.000 | TC08919468004.400 | 1917T0T |

**Result** ☒ Pass ☐ Fail ☐ ____________________

10L MSOP assembled by NSEB 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 |
|---|---|---|---|---|---|---|
| **Moisture/Reflow Sensitivity Classification Test (At MSL Level 1)** | 85°C/ 85%RH Moisture Soak 168 hrs.<br>System: TABAI ESPEC Model PR-3SPH<br>3x Convection-Reflow 265°C max<br>System: Vitronics Soltec MR1243<br>( IPC/JEDEC J-STD-020E) | IPC/JEDEC J-STD-020E | 135 | 0/135 | Pass | |
| **<u>Precondition Prior Perform Reliability Tests</u> (At MSL Level 1)** | **Electrical Test :**+25°C and 125°C<br>System: J750_HD | JESD22-A113 | 693(0) | 693 | | Good Devices |
| | Bake 150°C, 24 hrs<br>System: CHINEE | | | 693 | | |
| | 85°C/85%RH Moisture Soak 168 hrs.<br>System: TABAI ESPEC Model PR-3SPH | | | 693 | | |
| | 3x Convection-Reflow 265°C max | | | 693 | | |
| | System: Vitronics Soltec MR1243 | | | | | |
| | **Electrical Test :**+25°C and 125°C<br>System: J750_HD | | | 0/693 | Pass | |

# PACKAGE QUALIFICATION REPORT

| Test Number (Reference) | Test Condition | Standard/ Method | Qty. (Acc.) | Def/SS. | Result | Remarks |
|---|---|---|---|---|---|---|
| **Temp Cycle** | **Stress Condition:**<br>-65°C to +150°C, 500 Cycles<br>System : TABAI ESPEC TSA-70H | JESD22-A104 | | 231 | | Parts had been pre-conditioned at 260°C |
| | **Electrical Test:** + 125°C | | 231(0) | 0/231 | Pass | 77 units / lot |
| | System: J750_HD | | | | | |
| | **Bond Strength:** | | | | | |
| | Wire Pull (> 2.5 grams) | | 15 (0) | 0/15 | Pass | |
| | Bond Shear (>15.00 grams) | | 15 (0) | 0/15 | Pass | |

# PACKAGE QUALIFICATION REPORT

| Test Number (Reference) | Test Condition | Standard/ Method | Qty. (Acc.) | Def/SS. | Result | Remarks |
|---|---|---|---|---|---|---|
| **Solderability**<br>**Temp 245°C** | **Steam Aging:** Temp 93°C,8Hrs<br>System: SAS-3000<br>Solder Dipping:Solder Temp.245°C<br>Solder material:Pb Free Sn 95.5Ag3.9 Cu0.6<br>System: ERSA RA 2200D<br>Visual Inspection: External Visual Inspection | J-STD-002 | 22 (0) | 22<br>22<br>0/22 | Pass | |
| **Physical Dimensions** | Physical Dimension,<br>10 units from 1 lot | JESD22-B100/B108 | 30(0) Units | 0/30 | Pass | |
| **Bond Strength Data Assembly** | Wire Pull (> 2.5 grams) | M2011 | 30 (0) Wires | 0/30 | Pass | |
| | Bond Shear (>15.00 grams) | JESD22-B116 | 30 (0) bonds | 0/30 | Pass | |

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# QUALIFICATION REPORT SUMMARY

## PCN #: ASER-15HQCX332

**Date:**
**June 14, 2016**

## Qualification of a new lead frame design for selected MCP342xxx device family available in 10L MSOP (3x3mm) package. This is a qualification by similarity.

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# PACKAGE QUALIFICATION REPORT

| | |
|---|---|
| **Purpose** | Qualification of a new lead frame design for selected MCP342xxx device family available in 10L MSOP (3x3mm) package. This is a qualification by similarity. |
| **CCB** | 2503 & 4903 |
| **CN** | BC161017 |
| **QUAL ID** | Q16048 Rev. A |
| **MP CODE** | VABA1YE3XA00 |
| **Part No.** | HV9805MG-G |
| **Bonding No.** | A-053196 Rev. B |
| **<u>Package</u>** | |
| **Type** | 10L MSOP |
| **Package size** | 3x3 mm |
| **<u>Lead Frame</u>** | |
| **Paddle size** | 68 x 94 mils |
| **Material** | C7025 |
| **Surface** | Spot Ag Plated |
| **Process** | Stamped |
| **Lead Lock** | Yes |
| **Part Number** | FM0008 |
| **Treatment** | None |
| **<u>Die attach material</u>** | |
| **Epoxy** | 2200D |
| **Wire** | Au wire |
| **Mold Compound** | G600 |
| **Plating Composition** | Matte Tin |

**Manufacturing Information**

| Assembly Lot No. | Wafer Lot No. | Date Code |
|---|---|---|
| NSEB164100001.000 | TSMC915451595.000 | 1601H4R |
| NSEB164100002.000 | TSMC915451595.000 | 1601H4V |
| NSEB164100003.000 | TSMC915451595.000 | 1601H55 |

**Result** ☒ Pass ☐ Fail ☐ ____________________

10L MSOP (3x3mm) assembled by UTL (NSEB) 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-020D standard.

# PACKAGE QUALIFICATION REPORT

| Test Number (Reference) | Test Condition | Standard/ Method | Qty. (Acc.) | Def/SS | Result | Remarks |
|---|---|---|---|---|---|---|
| **Moisture/Reflow Sensitivity Classification Test (At MSL Level 1)** | 85°C/ 85%RH Moisture Soak 168 hrs.<br>System: TABAI ESPEC Model PR-3SPH<br>3x Convection-Reflow 265°C max<br>System: Vitronics Soltec MR1243<br>( IPC/JEDEC J-STD-020D) | IPC/JEDEC J-STD-020D | 135 | 0/135 | Pass | |
| **Precondition Prior Perform Reliability Tests (At MSL Level 1)** | **Electrical Test :**+25°C<br>System: TMT_HV_NT | JESD22-A113 | 693(0) | 693 | | Good Devices |
| | Bake 150°C, 24 hrs<br>System: CHINEE | | | 693 | | |
| | 85°C/85%RH Moisture Soak 168 hrs.<br>System: TABAI ESPEC Model PR-3SPH | | | 693 | | |
| | 3x Convection-Reflow 265°C max | | | 693 | | |
| | System: Vitronics Soltec MR1243 | | | | | |
| | **Electrical Test :**+25°C<br>System: TMT_HV_NT | | | 0/693 | Pass | |

# PACKAGE QUALIFICATION REPORT

| Test Number (Reference) | Test Condition | Standard/ Method | Qty. (Acc.) | Def/SS. | Result | Remarks |
|---|---|---|---|---|---|---|
| **Temp Cycle** | **Stress Condition:**<br>-65°C to +150°C, 500 Cycles<br>System : TABAI ESPEC TSA-70H | JESD22-A104 | | 231 | | Parts had been pre-conditioned at 260°C |
| | **Electrical Test:** + 25°C<br>System: TMT_HV_NT | | 231(0) | 0/231 | Pass | 77 units / lot |
| | **Bond Strength:**<br>Wire Pull (> 4.0 grams) | | 15 (0) | 0/15 | Pass | |
| | Bond Shear (>20.00 grams) | | 15 (0) | 0/15 | Pass | |
| **UNBIASED-HAST** | **Stress Condition:**<br>+130°C/85%RH, 96 hrs.<br>System: HAST 6000X | JESD22-A118 | | 231 | | Parts had been pre-conditioned at 260°C |
| | **Electrical Test:** +25°C<br>System: TMT_HV_NT | | 231(0) | 0/231 | Pass | 77 units / lot |
| **HAST** | **Stress Condition:**<br>+130°C/85%RH, 96 hrs. **Bias Volt:** 5.0 Volts<br>System: HAST 6000X | JESD22-A110 | | 231 | | Parts had been pre-conditioned at 260°C |
| | **Electrical Test:**+25°C<br>System: TMT_HV_NT | | 231(0) | 0/231 | Pass | 77 units / lot |
| **High Temperature Storage Life** | **Stress Condition:**<br>Bake 175°C, 504 hrs<br>System: SHEL LAB | JESD22-A103 | | 45 | | 45 units |
| | **Electrical Test** :+25°C<br>System: TMT_HV_NT | | 45(0) | 0/45 | Pass | |

# PACKAGE QUALIFICATION REPORT

| Test Number (Reference) | Test Condition | Standard/ Method | Qty. (Acc.) | Def/SS. | Result | Remarks |
|---|---|---|---|---|---|---|
| **Solderability**<br>**Temp 215°C** | **Steam Aging:** Temp 93°C,8Hrs<br>System: SAS-3000<br>Solder Dipping: Solder Temp.215°C<br>Solder material: SnPb Sn63,Pb37<br>System: ERSA RA 2200D<br>Visual Inspection: External Visual Inspection | JESD22B-102E | 22 (0) | 22<br>22<br>0/22 | Pass | |
| **Solderability**<br>**Temp 245°C** | **Steam Aging:** Temp 93°C,8Hrs<br>System: SAS-3000<br>Solder Dipping:Solder Temp.245°C<br>Solder material:Pb Free Sn 95.5Ag3.9 Cu0.6<br>System: ERSA RA 2200D<br>Visual Inspection: External Visual Inspection | JESD22B-102E | 22 (0) | 22<br>22<br>0/22 | Pass | |
| **Physical Dimensions** | Physical Dimension,<br>30 units from 1 lot | JESD22-B100/B108 | 30(0) Units | 0/30 | Pass | |
| **Bond Strength Data Assembly** | Wire Pull (> 4.0 grams) | M2011 | 30 (0) Wires | 0/30 | Pass | |
| | Bond Shear (>20.00 grams) | JESD22-B116 | 30 (0) bonds | 0/30 | Pass | |

# CCB 4903

# Pre and Post Change Summary

# PCN #: ASER-15HQCX332

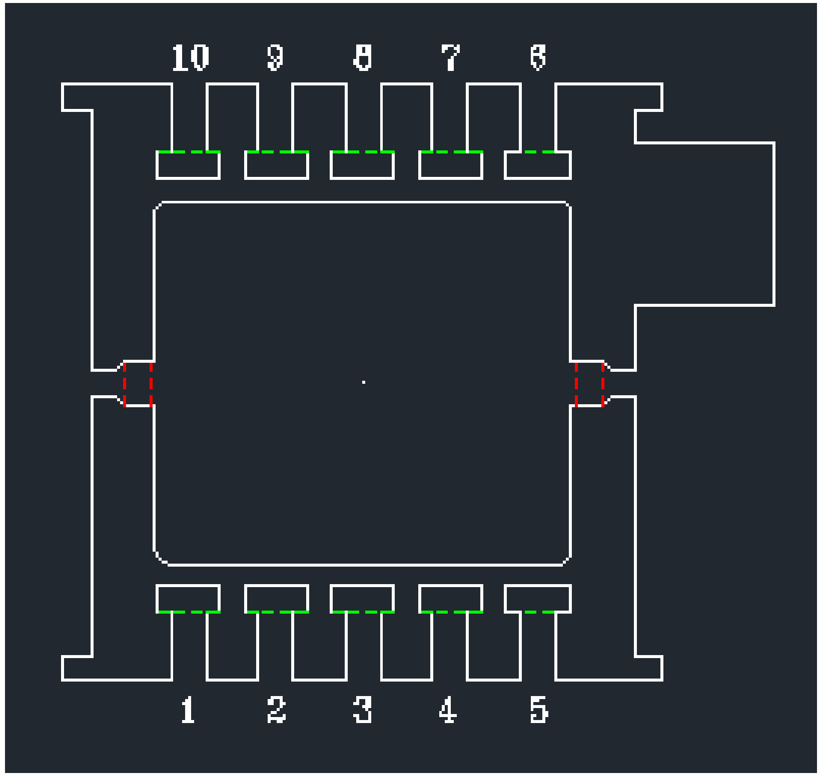
A Leading Provider of Smart, Connected and Secure Embedded Control Solutions

**Qualification of a new lead frame design for selected MCP342xxx device family available in 10L MSOP (3x3mm) package.**

SMART | CONNECTED | SECURE

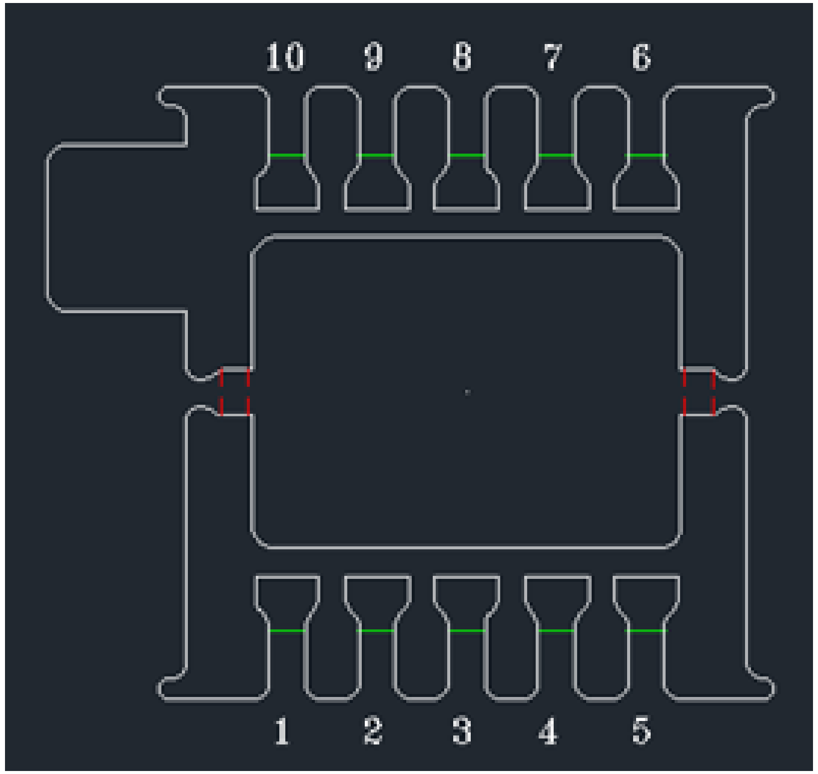
# Lead Frame Comparison

**NSEB**



| | |
|---|---|
| **Lead-Frame Material** | C7025 |
| **Lead-Frame Paddle Size** | 82x94 mil |
| **Lead-Frame Lead Lock** | No |

**NSEB**



| | |
|---|---|
| **Lead-Frame Material** | C7025 |
| **Lead-Frame Paddle Size** | 68x94 mil |
| **Lead-Frame Lead Lock** | Yes |