# Product Change Notification / CENO-28OKTD637

## Date:

09-Jul-2024

## Product Category:

Clock and Timing - Clock and Data Distribution

## PCN Type:

Manufacturing Change

## Notification Subject:

CCB 6719 Final Notice: Qualification of MTAI as a new assembly site for selected SY100EP111, SY100EP195V, SY100EP196, SY89295U and SY89296 device families available in 32L TQFP (7x7x1.0mm) package.

## Affected CPNs:

CENO-28OKTD637_Affected_CPN_07092024.pdf
CENO-28OKTD637_Affected_CPN_07092024.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 MTAI as a new assembly site for selected SY100EP111, SY100EP195V, SY100EP196, SY89295U and SY89296 device families available in 32L TQFP (7x7x1.0mm) package.

**Pre and Post Change Summary:**

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

| Assembly Site | | Amkor Technology Philippine (P1/P2), INC. (ANAP) | Microchip Technology Thailand (HQ) (MTAI) |
|---|---|---|---|
| Moisture Sensitivity Level (MSL) | | MSL 2 | MSL 1 |
| Shipping Media | Tray Color | Black | Dark Blue |
| | Tray Baking | Bakeable | Non-bakeable |
| Wire Material | | Au | Au |
| Die Attach Material | | 3230 | QMI519 |
| Molding Compound Material | | G700L | G700HA |
| Lead-Frame Material | | C194 | C7025 |
| Lead-Frame Paddle Size | | 138 x 138 mils | 197 x 197 mils |
| Lead-Frame Design | | See Pre and Post Change for comparison | |
| DAP Surface Prep | | NiPdAu | Ag selective |

**Impacts to Data Sheet:**None

**Change Impact**None

**Reason for Change:**To improve manufacturability by qualifying MTAI as a new assembly site.

**Change Implementation Status:**In Progress

**Estimated First Ship Date:**August 19,2024 (date code: 2434)

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

**Time Table Summary:**

| | **February 2024** | | | | | **>** | **July 2024** | | | | | **August 2024** | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Workweek | 05 | 06 | 07 | 08 | 09 | | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
| Initial PCN Issue Date | x | | | | | | | | | | | | | | |
| Qual Report Availability | | | | | | | x | | | | | | | | |
| Final PCN Issue Date | | | | | | | x | | | | | | | | |
| Estimated | | | | | | | | | | | | | | x | |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Implementation Date | | | | | | | | | | | | | | | |

**Method to Identify Change:**Traceability code

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

**Revision History:**February 2, 2024: Issued initial notification.
July 04, 2024: Issued final notification. Updated Notification subject and description of change to reflect the SY100EP195V device family from SY100EP15V. Attached the Qualification Report. Provided estimated first ship date to be on August 19, 2024.
July 09, 2024: Re-issued final notification to attach qualification report.

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

## Attachments:

PCN_CENO-28OKTD637_Qual_Report.pdf
PCN_CENO-02VUYS211_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.

Affected Catalog Part Numbers (CPN)

SY100EP195VTG
SY100EP196VTG
SY100EP195VTG-TR
SY100EP196VTG-TR
SY100EP111UTG-TR
SY100EP111UTG-TX
SY100EP111UTG
SY89296UTG
SY89296UTG-TR
SY89295UTG-TR
SY89295UTG

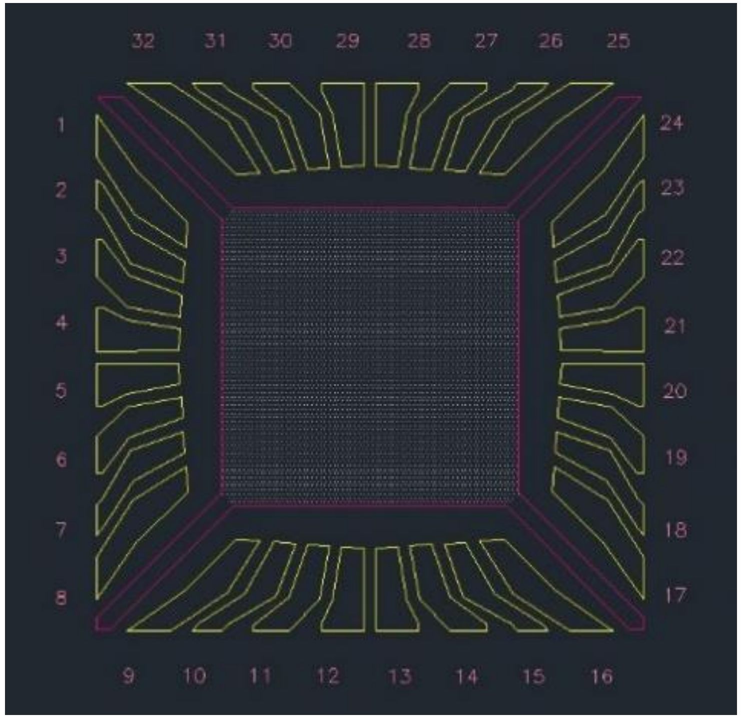
# CCB 6719
# Pre and Post Change Summary
# PCN #: CENO-28OKTD637

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

SMART | CONNECTED | SECURE

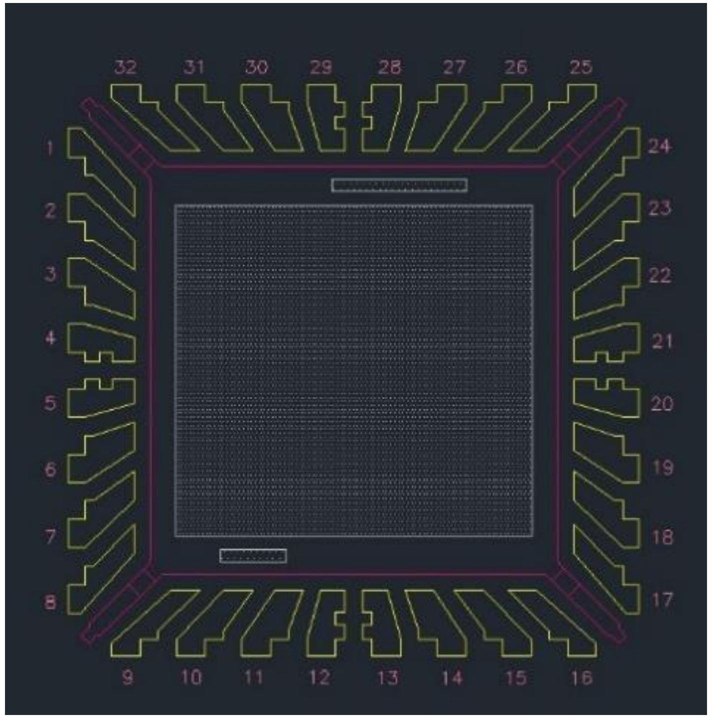
# LEAD FRAME COMPARISON

## ANAP



| | |
|---|---|
| Lead Frame Material | C194 |
| Paddle size | 138 x 138 mils |
| DAP Surface Prep | NiPdAu |

## MTAI

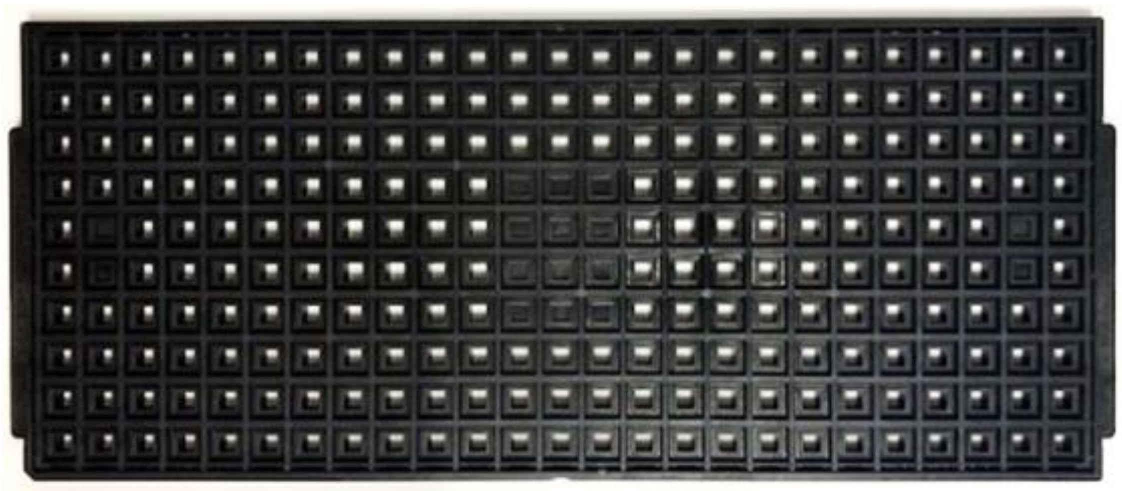


| | |
|---|---|
| Lead Frame Material | C7025 |
| Paddle size | 197 x 197 mils |
| DAP Surface Prep | Ag selective |

*Note: Not to scale*

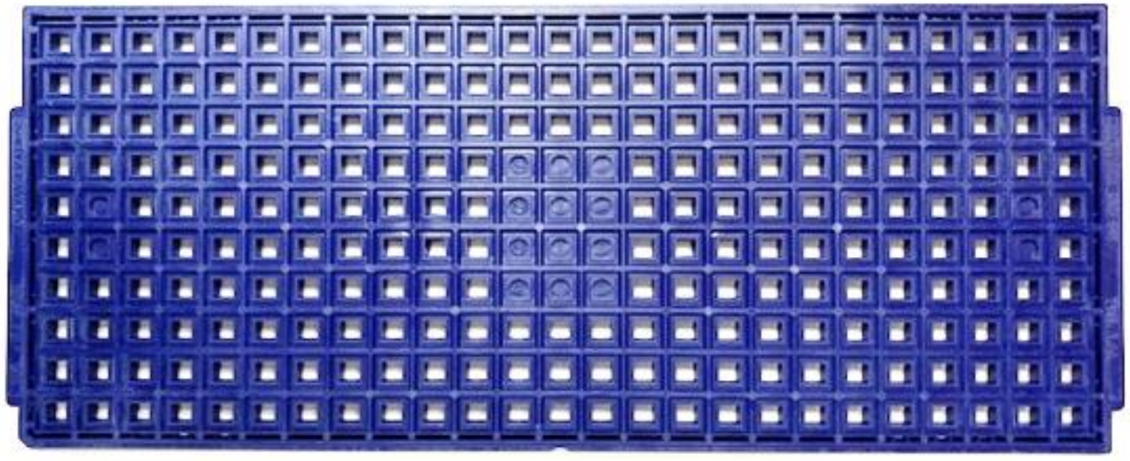
# TRAY COMPARISON

## ANAP



| | |
|---|---|
| Color | Black |
| Baking | Bakeable |

## MTAI



| | |
|---|---|
| Color | Dark Blue |
| Baking | Non-bakeable |

# QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

## PCN#: CENO-28OKTD637

Date:
June 25, 2024

# Qualification of MTAI as a new assembly site for selected SY100EP111, SY100EP195V, SY100EP196, SY89295U and SY89296 device families available in 32L TQFP (7x7x1.0mm) package.

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# PACKAGE QUALIFICATION REPORT

| | |
|---|---|
| **Purpose** | Qualification of MTAI as a new assembly site for selected SY100EP111, SY100EP195V, SY100EP196, SY89295U and SY89296 device families available in 32L TQFP (7x7x1.0mm) package. |
| **CN** | E000209537 |
| **QUAL ID** | R2400176 Rev. A. |
| **MP CODE** | 2D8107T5XP12 |
| **Part No.** | SY89295UTG |
| **Bonding No.** | BD-001944 Rev. 01 |
| **CCB No.**: | 6719 |
| **Package** | |
| **Type** | 32L TQFP |
| **Package size** | 7 x 7 x 1.0 mm |
| **Lead Frame** | |
| **Paddle size** | 197 x 197 mils |
| **Material** | C7025 |
| **Surface** | Ag selective |
| **Process** | Stamped |
| **Lead Lock** | No |
| **Part Number** | 10103206 |
| **Treatment** | Roughening |
| **Material** | |
| **Epoxy** | QMI-519 |
| **Wire** | Au wire |
| **Mold Compound** | G700HA |
| **Plating Composition** | Matte Sn |

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# PACKAGE QUALIFICATION REPORT

## Manufacturing Information

| Assembly Lot No. | Wafer Lot No. | Date Code |
|---|---|---|
| MTAI243601887.000 | TMPE219328826.130 | 2349B7U |
| MTAI243701126.000 | TMPE219328826.130 | 2350DR6 |
| MTAI243701127.000 | TMPE219328826.130 | 2350DRA |

**Result** ☒ Pass ☐ Fail ☐ ____________________

32L TQFP (7x7 mm) assembled by MTAI 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 |
|---|---|---|---|---|---|---|
| **Precondition Prior Perform Reliability Tests (At MSL Level 1)** | **Electrical Test:** +25°C and 85°C<br>System: HP83K | JESD22-A113 | 693(0) | 0/693 | | Good Devices |
| | Bake 150°C, 24 hrs.<br>System: CHINEE | JIP/ IPC/JEDEC J-STD-020E | | 693 | | |
| | 85°C/85%RH Moisture Soak 168 hrs.<br>System: TABAI ESPEC Model PR-3SPH | | | 693 | | |
| | 3x Convection-Reflow 265°C max<br>System: Vitronics Soltec MR1243 | | | 693 | | |
| | **Electrical Test:** +25°C and 85°C<br>System: HP83K | | 693(0) | 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: HP83K | JESD22-A104 | | 0/231 | | Parts had been pre-conditioned at 260°C |
| | **Electrical Test:** + 85°C<br>System: HP83K | | 231(0) | 0/231 | Pass | 77 units / lot |
| | **Bond Strength:**<br>Wire Pull (>4.00 grams) | | 15(0) | 0/15 | Pass | |
| **UNBIASED-HAST** | **Stress Condition:**<br>+130°C/85%RH, 96 hrs.<br>System: HAST 6000X | JESD22-A118 | | 0/231 | | Parts had been pre-conditioned at 260°C |
| | **Electrical Test:** +25°C<br>System: HP83K | | 231(0) | 0/231 | Pass | 77 units / lot |
| **HAST** | **Stress Condition:**<br>+130°C/85%RH, 96 hrs.<br>**Bias Volt:** Vcc = 1.2 Volts<br>System: HAST 6000X | JESD22-A110 | | 0/231 | | Parts had been pre-conditioned at 260°C |
| | **Electrical Test:** +25°C and 85°C<br>System: HP83K | | 231(0) | 0/231 | Pass | 77 units / lot |

# PACKAGE QUALIFICATION REPORT

| Test Number (Reference) | Test Condition | Standard/ Method | Qty. (Acc.) | Def/SS. | Result | Remarks |
|---|---|---|---|---|---|---|
| **High Temperature Storage Life** | **Stress Condition:**<br>Bake 175°C, 504 hrs.<br>System: TPS Bake Oven | JESD22-A103 | | 0/45 | | 45 units |
| | **Electrical Test:** +25°C and 85°C<br>System: HP83K | | 45(0) | 0/45 | Pass | |
| **Bond Strength Data Assembly** | Wire Pull (>4.00 grams) | Mil. Std. 883-2011 | 30(0) Wires | 0/30 | Pass | |
| | Bond Shear (>18.00 grams) | CDF-AEC-Q100-001 | 30(0) bonds | 0/30 | Pass | |