# PRODUCT / PROCESS CHANGE NOTIFICATION
# PCN-000764
# Date: December 1, 2021



Semtech Corporation, 200 Flynn Road, Camarillo CA 93012

## Change Details

| Part Number(s) Affected: | Customer Part Number(s) Affected: ☒ N/A |
|---|---|
| SX1301IMLTRT<br>SX1301IMLTRC<br>SX1308IMLTRT | |

**Description, Purpose and Effect of Change:**

For business continuity purposes, Semtech will start using qualified second-sources for assembly of the above-mentioned parts.

The assembly of these parts is currently performed at Carsem (Malaysia). Second-source assembly has been qualified at Greatek (Taiwan).

| | | | |
|---|---|---|---|
| Change Classification | ☒ Major ☐ Minor | Impact to Form, Fit, Function | ☐ Yes ☒ No |
| Impact to Data Sheet | ☐ Yes ☒ No | New Revision or Date | ☒ N/A |

**Impact to Performance, Characteristics or Reliability:**

No impact to performance, characteristics or reliability is expected as a result of this change.

| | | | |
|---|---|---|---|
| Implementation Date | March 1, 2022 | Work Week | 2209 |
| Last Time Ship (LTS)<br>Of unchanged product | N/A | Affecting Lot No. / Serial No. (SN) | N/A |
| Sample Availability | December 1, 2021 | Qualification Report Availability | December 1, 2021 |

**Supporting Documents for Change Validation/Attachments:**

- From-To analysis
- Reliability qualification report available upon request.

## Issuing Authority

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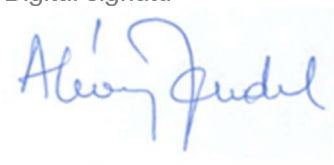
| | | |
|---|---|---|
| **Semtech Business Unit:** | Wireless and Sensing Product Group | |
| **Semtech Contact Info:** | Anne Lévy-Mandel<br>Sr Quality Assurance Manager,<br>Wireless & Sensing Products<br><br>Semtech Neuchâtel SA<br>Gouttes d'Or 40<br>CH-2000 Neuchâtel<br><br>Alevymandel@semtech.com<br><br>Office: + 41 32 729 40 61<br>Fax: + 41 32 729 40 01 | Digital signatu<br>  <br>re |
| **FOR FURTHER INFORMATION & WORLDWIDE SALES COVERAGE:** http://www.semtech.com/contact/index.html#support | | |

SEMTECH

www.semtech.com


# PCN No. 000764
# Qualification of Greatek Taiwan for SX1301/ SX1308 products

# Introduction

- SX1301IMLTRT, SX1301IMLTRC and SX1308IMLTRT are been qualified in Greatek, Taiwan as a site for assembly. Current Assembly is performed in Carsem, Malaysia.

- The change affect applicable to products:

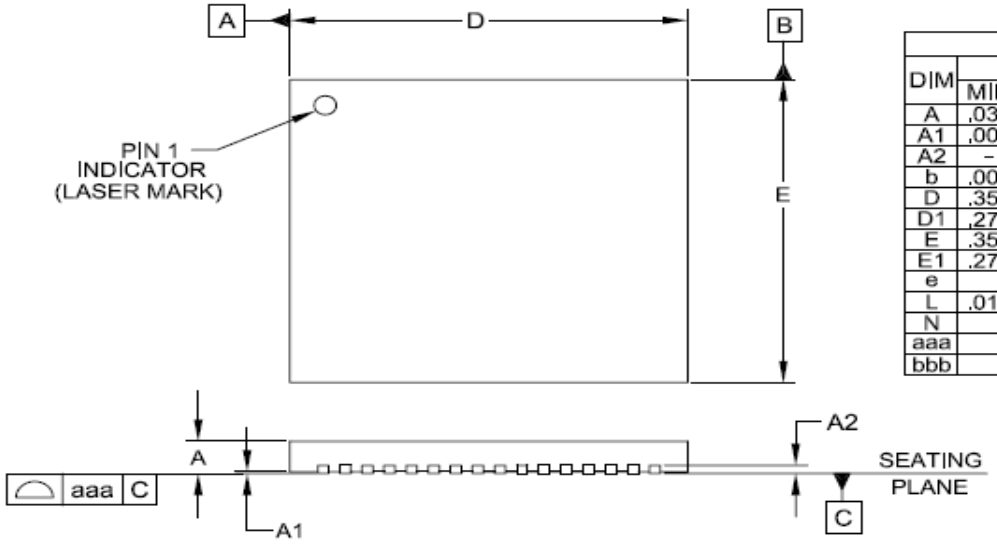
  SX1301IMLTRT, SX1301IMLTRC and SX1308IMLTRT.

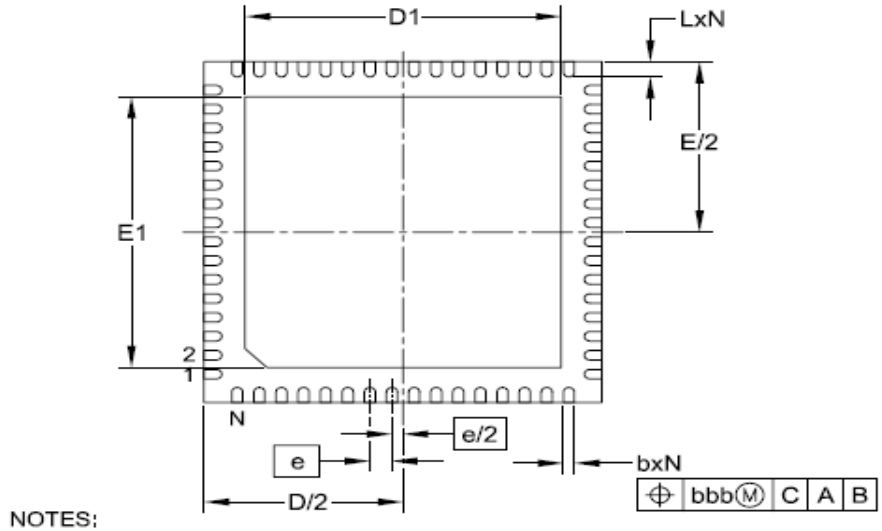
- Qualification Vehicles selected are SX1301IMLTRT

- Schedule for Implementation

  Passing REL qualification MSL 3 under Rel job# 7219.

# SEMTECH Package Outline on SX1301IMLTRT/ SX1308IMLTRT Carsem (Old) and Greatek (New)




| DIM | INCHES | | | MILLIMETERS | | |
|---|---|---|---|---|---|---|
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | ,031 | - | ,039 | 0,80 | - | 1,00 |
| A1 | ,000 | - | ,002 | 0,00 | - | 0,05 |
| A2 | - | (,008) | - | - | (0.20) | - |
| b | ,007 | ,010 | ,012 | 0.18 | 0,25 | 0,30 |
| D | ,350 | ,354 | ,358 | 8,90 | 9,00 | 9,10 |
| D1 | ,276 | ,281 | ,285 | 7,00 | 7.15 | 7.25 |
| E | ,350 | ,354 | ,358 | 8,90 | 9,00 | 9,10 |
| E1 | ,276 | ,281 | ,285 | 7.00 | 7.15 | 7.25 |
| e | ,020 BSC | | | 0,50 BSC | | |
| L | ,012 | ,016 | ,020 | 0.30 | 0,40 | 0.50 |
| N | 64 | | | 64 | | |
| aaa | .003 | | | 0.08 | | |
| bbb | .004 | | | 0.10 | | |

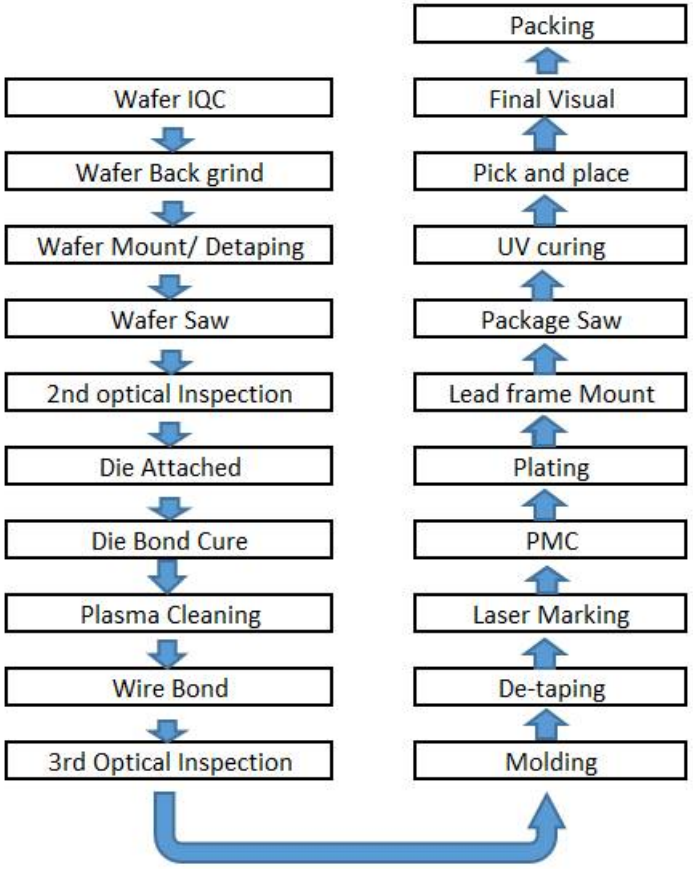
NOTES:
1. CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES).
2. COPLANARITY APPLIES TO THE EXPOSED PAD AS WELL AS THE TERMINALS.

**No Change in Package Outline for SX1301 / SX1308.**

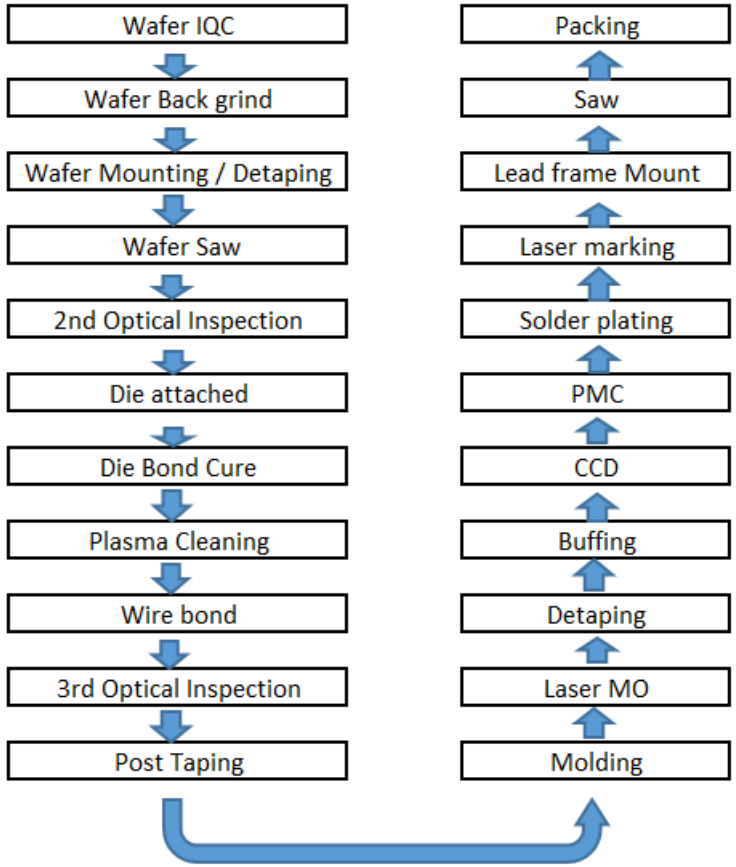
# Assembly Process Flow Comparison for Carsem (Old) vs. Greatek (New)

**Assembly Process Flow:**

## CARSEM (Old)




## GREATEK (New)




- No major Change in manufacturing Flow

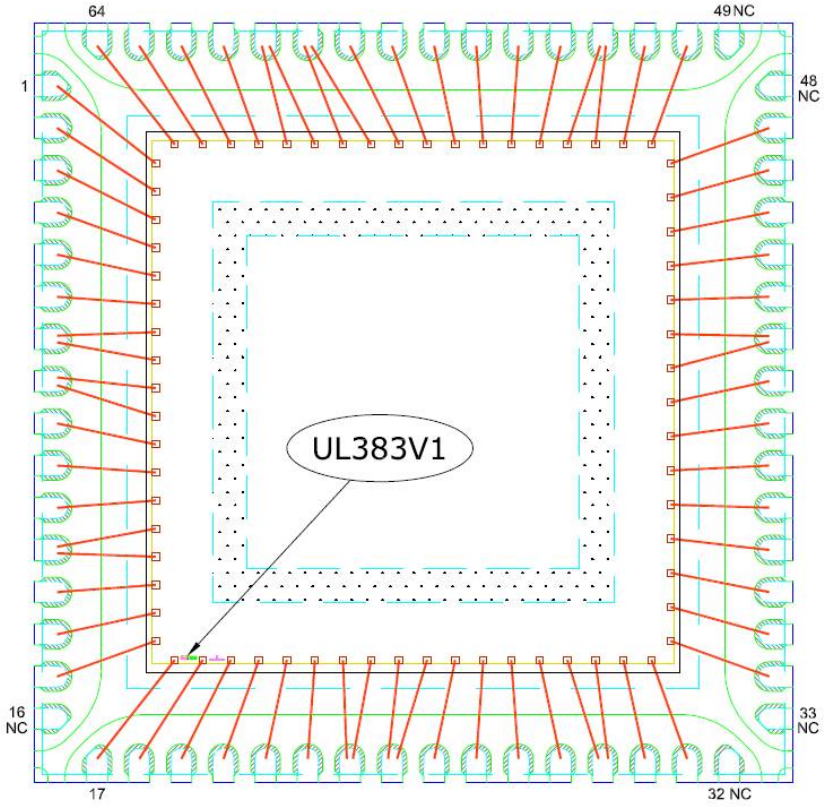
# BOM (Carsem vs Greatek)

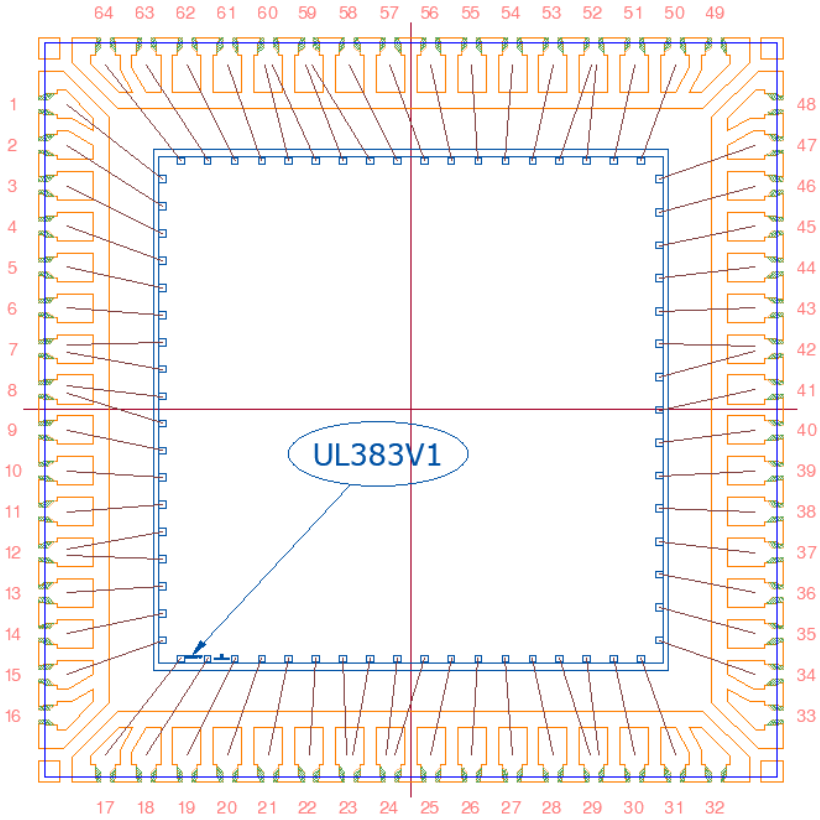
| Carsem (Old) | | | | Greatek (New) | | | |
|---|---|---|---|---|---|---|---|
| Epoxy | Leadframe | Wire Type | Mold compound | Epoxy | Leadframe | Wire Type | Mold compound |
| QMI519 Conductive epoxy | AgCu LDF | 0.8 mils Au wire | G770HC | EN-4900 Conductive epoxy | AgCu LDF | 0.8 mils Au wire | G700HAL |

- BOM for both supplier (Greatek/Carsem) is MSL3 qualified.

- Carsem is using QMI519 epoxy and Greatek is using epoxy material EN-4900. Both are conductive epoxy which is high volume mass production and proven for MSL 3.
- Lead frame base material and finishing is identical for both supplier. These are supplier standard BOM with proven MSL3 performance.
- Both Carsem and Greatek supplier are using similar Au wire material for 0.8 mil.
- Mold compound used for Carsem is G770HC while Greatek is using G700HA series. Both compound material were from Sumitomo. This is supplier standard BOM with proven MSL3 performance. Both BOM running >5years high volume production. Greatek has shipped >100Mu with G700HAL on QFN/DFN products.
- There are some BOM differences between both supplier Carsem and Greatek except lead frame and wire material. However, this BOM material in Greatek has proven to achieving MSL 3.

# Bonding Layout (Carsem vs Greatek)




**No Change in Bonding Layout.**