

PCN Number: 1604-3
Chgnot.doc rev. __ 4/16

Product/Process Change Notification (PCN)

Customer: Digi-Key

Date: 24 August 2016

Customer Part # affected:

| | | | | |
|---|------------|------------|------------|------------|
| A1120EUA-T | A1220EUA-T | A1221EUA-T | A3290KUA-T | A3295KUA-T |
| A1120LUA-T | A1220LUA-T | A1221LUA-T | A3291KUA-T | |
| <i>Including all finishing suffix variations of the sales root listed</i> | | | | |

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Duration of Change:

Permanent

Temporary (explain)

Summary description of change: Part Change:

Process Change:

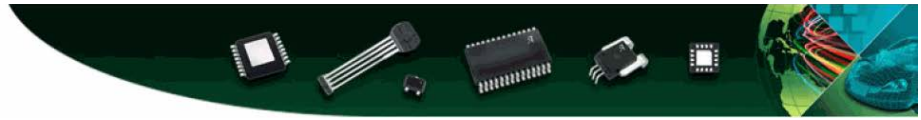
Other:

1. Package:

Allegro is discontinuing its legacy UA 3-pin single inline package (SIP) as we invest in our next generation UA SIP featuring advancements in assembly technology, a matrix high density (HD) leadframe, and state of the art mold compound. Please take note of the minor dimensional and material changes.

2. Wafer Fabrication Dual Sourcing:

Allegro has qualified and added a second source wafer foundry located in Taiwan for the subject devices. Allegro's partnership with a leading global semiconductor foundry coupled with our existing sister company PSL, will provide continued security of supply for our customers as well as support Allegro forecasted growth.



What is the part or process changing from?

1. Package:

Allegro's legacy UA package. Please reference DWG-0949.

Mold Compound: MG35F

Package lead length: 15.75 +/- 0.51 mm

Lead Finish: Trim after tin plate

Dam bar from package: 2.16 mm

Mold gate top of the package: None

No Draft Angle from Top Mold to back of package

2. Wafer fab:

Allegro currently manufactures wafers for *(See attached affected parts List)* at Polar Semiconductor Inc. (PSI), Bloomington, MN, USA using DABIC 6 technology.

3. Top Branding:

See attached picture for existing Allegro legacy UA package branding.

What is the part or process changing to?

1. Package:

Allegro's Matrix HD UA package. Please reference DWG-9067.

Mold Compound: G700-LS, Rohs compliant low stress, green mold compound

Package lead length: 14.99 +/- 0.25 mm

Lead Finish: Trim before Tin plate resulting in plating of the dambar with no exposed Cu

Dam bar from package: 1.02 mm

Mold gate top of the package: The redesigned with mold "pull-backs" in the gate and tie bar areas prevent mold flashing and burrs from protruding beyond the gate and tie bars.

The 10° Draft Angle from Top Mold to back of package improves ejection from the mold.

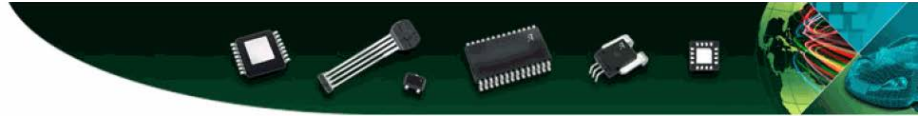
2. Wafer fab:

Allegro has added a second source wafer fabrication facility, United Microelectronics Corporation (UMC), located in Hsinshu, Taiwan. As a leading global semiconductor foundry, UMC utilizes the same Allegro DABIC6 technology to manufacture the subject parts. Both wafer fabrication facilities are in full compliance with the electrical and dimensional parameters on the existing Allegro published datasheet.

3. Top Branding:

Please see attached picture of top brand of Matrix HD UA package.

Other minor changes in the flow and BOM internal to the package will be provided in the PPAP.



There is no impact to function for these part changes.

Note: Validation of equivalence within a specific application is at the discretion of the Customer.



Is a PPAP update required?

Yes

No

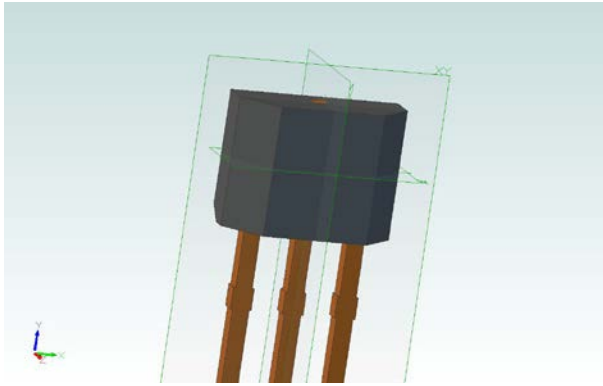
Reliability testing required?

Yes

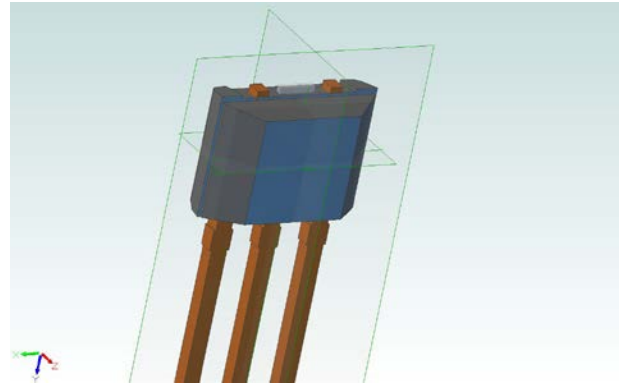
No (explain)



Legacy UA vs Matrix HD UA - Visual Differences



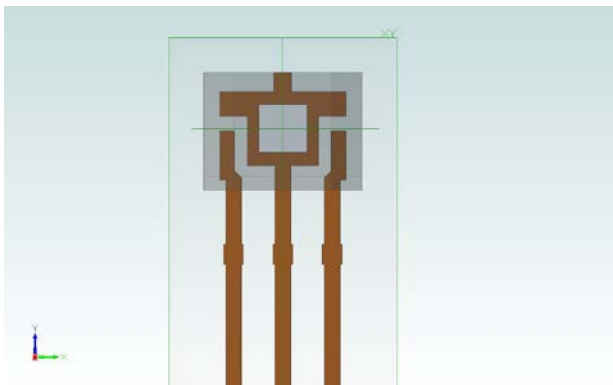
Legacy UA



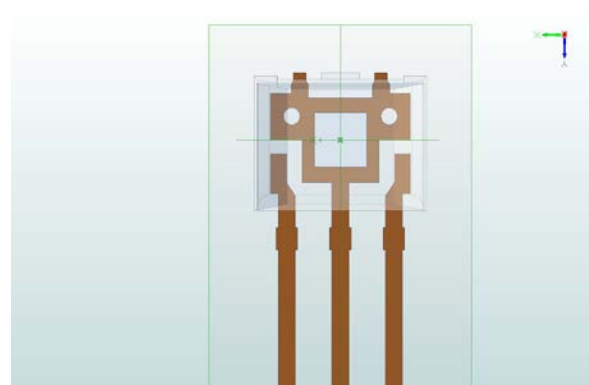
Matrix HD UA

- Top of package on the Matrix HD UA has tie and dam bar protrusions

Legacy UA vs Matrix HD UA – Leadframe Differences



Legacy UA leadframe

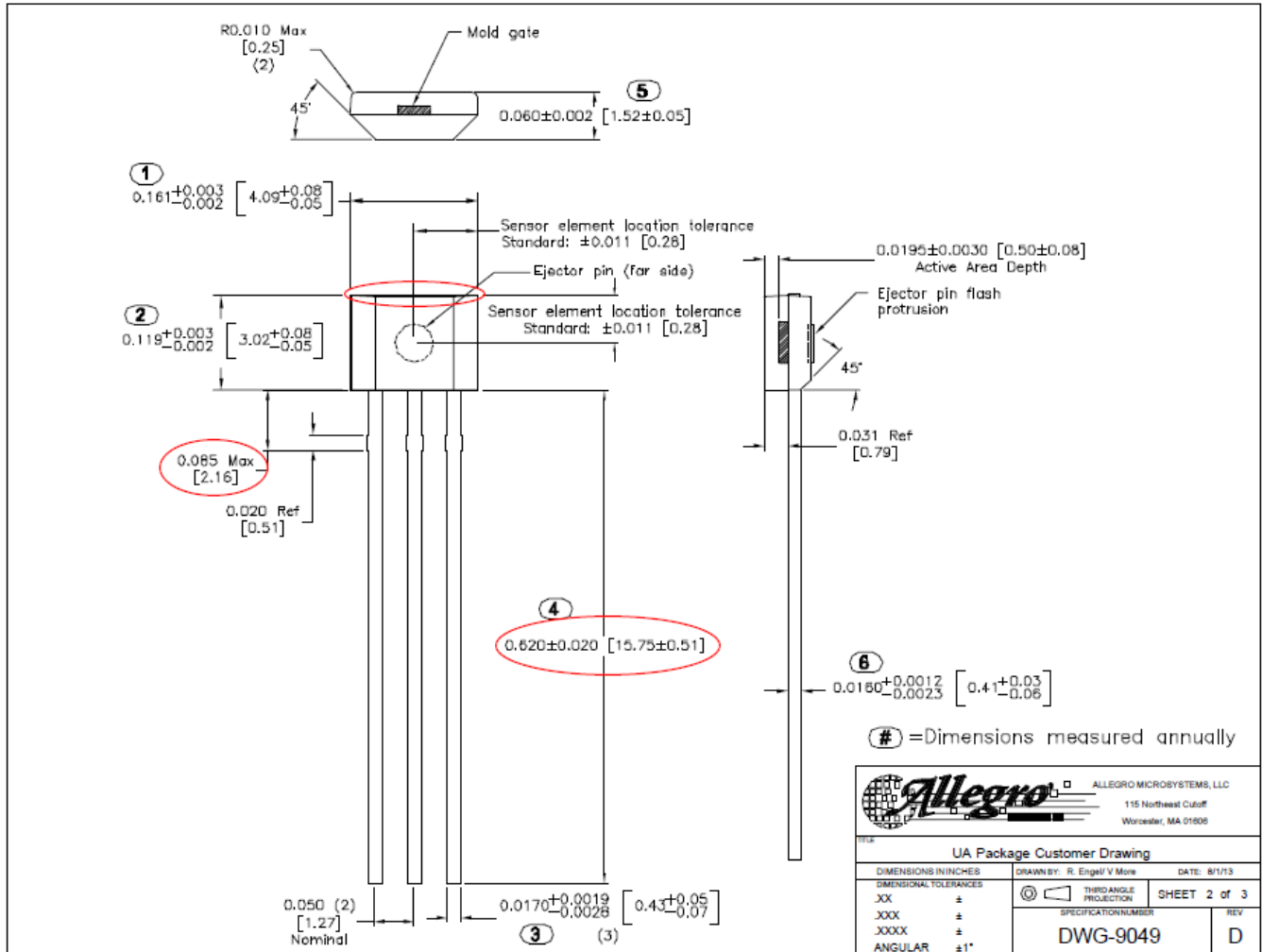


Matrix HD UA leadframe



Legacy UA vs Matrix HD UA – Dimensional Comparison

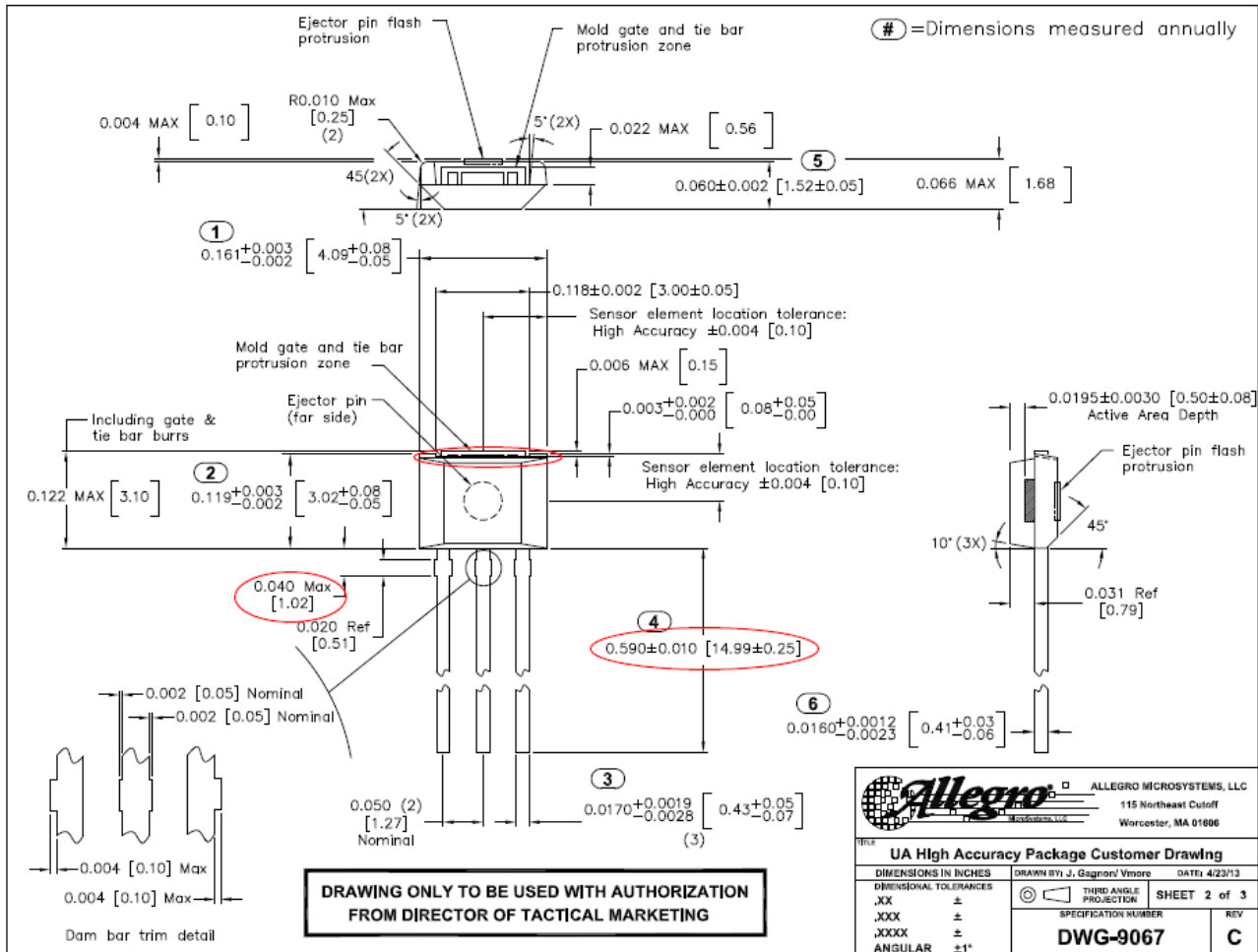
Legacy UA





Legacy UA vs Matrix HD UA – Dimensional Comparison Continued

Matrix HD UA



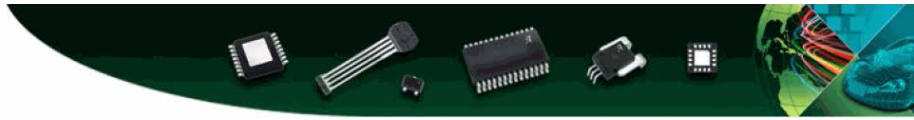
| Package | Width (mm) | Height (including tie & gate bar protrusions) (mm) | Lead Length (mm) | Leadframe Mold Offset (mm) |
|--------------|---------------------|--|------------------|----------------------------|
| Legacy UA | 4.09 (+0.08, -0.05) | 3.02 (+0.08, -0.05) | 15.75 +/-0.51 | +/-0.101 |
| Matrix HD UA | 4.09 (+0.08, -0.05) | 3.02 (+0.08, -0.05) | 14.99 +/-0.25 | +/-0.051 |



Top Branding Comparison

| Legacy UA | Matrix HD UA |
|------------|--------------|
| 01E | 101 |

- **Legacy UA Top Branding:**
Last two digits of part number + Temperature range designator
- **Matrix HD UA Top Branding:**
Last three digits of the part number



Expected completion date for internal qualification: November 2016

Expected PPAP availability date: Dec. 2016 / Jan. 2017
(Three weeks upon request)

Estimated date of first shipment: March 2017

Expected sample availability date: Available

| | | | |
|---------------------------|-----|-------------------------------------|--|
| Customer Approval: | Yes | <input type="checkbox"/> | Date Required: _____ or earlier |
| | No | <input checked="" type="checkbox"/> | Notification Only |

In the event the customer cannot approve the change Allegro will support Non-Cancellable Non-Returnable Last Time Buy (LTB) orders for the existing solution. LTB purchase orders must have requested delivery no later than 12 months from date below with a quantity that cannot exceed one year of demand unless there is a separate agreement with Allegro.

Final Date to place LTB orders: August 2017

Please note: It is our intention to inform our customer of changes as early as possible. Under Allegro’s procedure for product/process change notification, Allegro strives, based on its technical judgment, to provide notification of significant changes that may affect form, fit or function. However, as Allegro cannot ensure evaluation of product/process changes for each and every application; the customer retains responsibility to validate the impact of a change on its application suitability. If samples are needed for validation of a change, requests may be made via the contact information provided herein. Please contact your Account Manager or local Sales contact for any questions. We would kindly request your consideration so we can meet our target date for implementation. Unless both parties agree to extend the implementation date, this change will be implemented as scheduled.

Customer comments/Conditions of Acceptance:

Approved by: _____ Date: _____ Title: _____

cc: Allegro Sales/Marketing/Quality