

PRODUCT / PROCESS CHANGE NOTIFICATION

Generic Copy

PCN#2311001

• DATE: 16th November, 2023

PCN Subject: Change Assembly Site for Package DFN Series

• **PCN Change Category:**

- ☒ **Material**

 ☒ **Process**




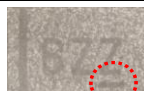



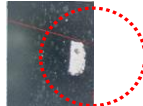
 ☐ **Datasheet/Specification**
☐ **Reliability**
☒ **Others (New assembly site)**

• **Description of Change Purpose or Reason:**









This PCN is being issued to announce the qualification of PANJIT Semiconductor (Xuzhou) Co., Ltd (located in Jiangsu Province, China) as an assembly and test site for DFN series selected products. The products that will be manufactured from this new assembly/test site are form, fit, and function compatible with the current qualified manufacturing sites. The qualification incorporates new bill of material (BOM) sets including the utilization of High-Density Leadframe with copper material, the change of wire type and wire diameter. For more detail, please check below change information.

We recommend that you acknowledge receipt of this notification within 30 days of this PCN date. If you require samples for further evaluation, please feel free to contact your local sales representative and make a request. We are always pleased to serve you at any time.

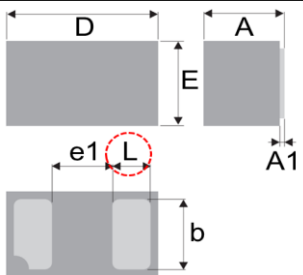
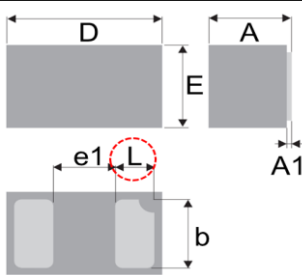
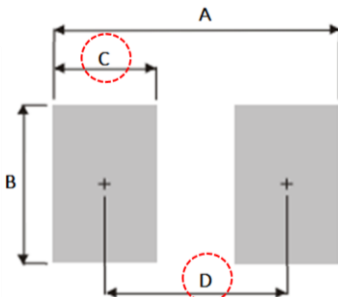
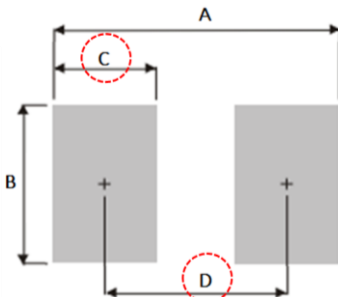
● **Change Information:**

| Comparison | | | Table 1 | |
|-------------------------------|------------------------|--|---|--|
| Assembly Site | | | From (Current) | Change to (New) |
| | | | PANJIT International Inc. | PANJIT Semiconductor (Xuzhou) Co., Ltd. |
| Production Site Location | | | Kaohsiung, Taiwan | Xuzhou, China |
| Package | | | DFN 2L | DFN1006-2L |
| Packing | | | 8 kpcs / reel | 10 kpcs / reel |
| Material | Lead Frame | Material | Copper | Copper (NiPdAu plated) |
| | Die Attach (Epoxy) | Material | Ablestik 84-1LMISR4 | 5002BG-6 |
| | Wire | Material / Diameter (mil) | Au / 0.8 | PdAuCu / 0.8 |
| | Epoxy Molding Compound | Type Name | ELER-8-100HFS CEL-9240HF | EME-G770HCD |
| | Carrier Tape | Material | Polycarbonate (PC) | Polycarbonate (PC) |
| | Ending tape | Material | Polyester | Paper |
| | | Color | Black | Yellow |
| Blue Anti-Static Plastic Reel | |  |  | |
| Method | Process | De-Flash | None | Chemical De-flash |
| | | Lead Plating | Sn | None |
| Form | Marking format | |  |  Add bar “-” for new assembly site |
| | Bottom View | |  Lead color: Silver |  Lead color: Gold |
| | Side View | |  |  |

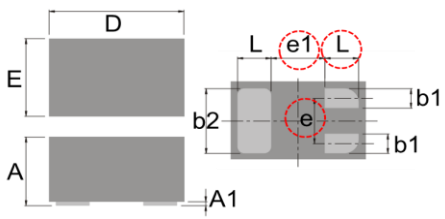
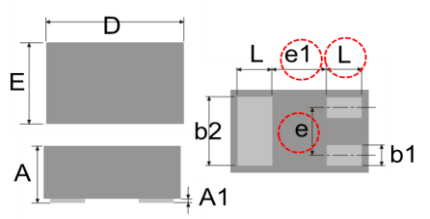
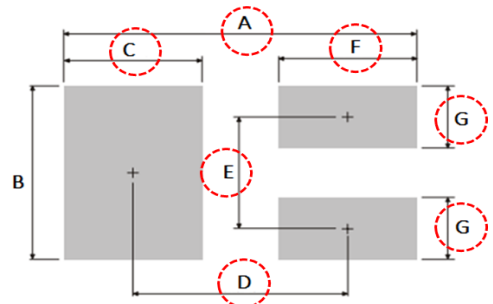
• **Change Information:**

| Comparison | | | Table 2 | |
|-------------------------------|------------------------|--|---|--|
| Assembly Site | | | From (Current) | Change to (New) |
| | | | PANJIT International Inc. | PANJIT Semiconductor (Xuzhou) Co., Ltd. |
| Production Site Location | | | Kaohsiung, Taiwan | Xuzhou, China |
| Package | | | DFN 3L | DFN1006-3L |
| Packing | | | 8 kpcs / reel | 10 kpcs / reel |
| Material | Lead Frame | Material | Copper | Copper (NiPdAu plated) |
| | Die Attach (Epoxy) | Material | Ablestik 84-1LMISR4 | 5002BG-6 |
| | Wire | Material / Diameter (mil) | Au / 1.0 | PdAuCu / 0.8 |
| | Epoxy Molding Compound | Type Name | ELER-8-100HFS CEL-9240HF | EME-G770HCD |
| | Carrier Tape | Material | Polycarbonate (PC) | Polycarbonate (PC) |
| | Ending tape | Material | Polyester | Paper |
| | | Color | Black | Yellow |
| Blue Anti-Static Plastic Reel | |  |  | |
| Method | Process | De-Flash | None | Chemical De-flash |
| | | Lead Plating | Sn | None |
| Form | Marking format | |  |  Add bar “-” for new assembly site |
| | Bottom View | |  Lead color: Silver |  Lead color: Gold |
| | Side View | |  |  |

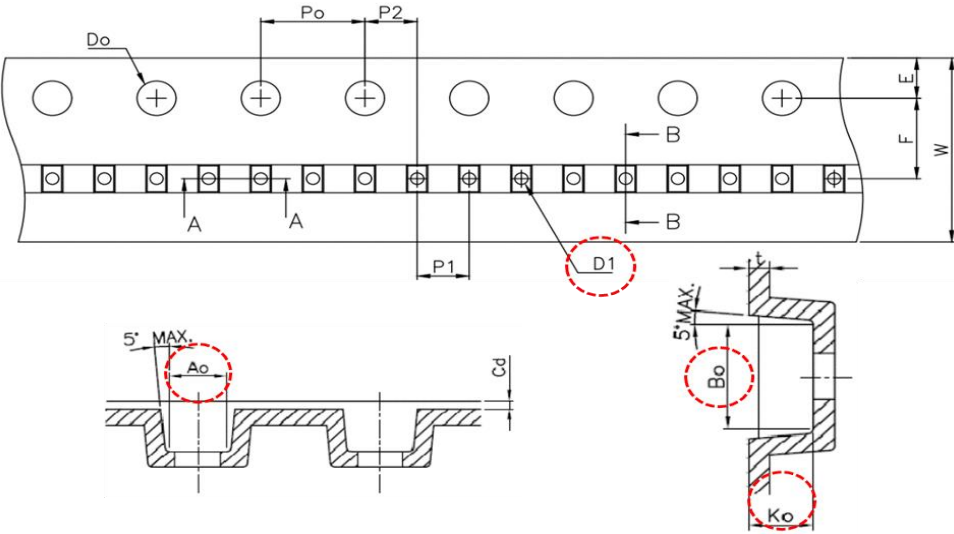
• **Change Information:**

| Comparison | From (Current) | | Change to (New) | |
|-----------------------------------|---|------|---|------|
| Package | DFN 2L | | DFN1006-2L | |
| Package Outline Drawing Dimension |  | |  | |
| Symbol (mm) | Min | Max | Min | Max |
| L | 0.22 | 0.32 | 0.20 | 0.30 |
| Pad Layout |  | |  | |
| Symbol (mm) | Dimension | | Dimension | |
| C | 0.42 | | 0.40 | |
| D | 0.68 | | 0.70 | |

• **Change Information:**

| Comparison Package | From (Current) DFN 3L | | Change to (New) DFN1006-3L | | |
|-----------------------------------|---|-----------|--|-----------|------|
| Package Outline Drawing Dimension |  | |  | | |
| | Symbol (mm) | Min | Max | Min | Max |
| | L | 0.22 | 0.32 | 0.20 | 0.30 |
| | e | 0.36 ref | | 0.35 ref | |
| e1 | 0.36 ref | | 0.40 ref | | |
| Pad Layout |  | | | | |
| | Symbol (mm) | Dimension | | Dimension | |
| | A | 1.10 | | 1.15 | |
| | C | 0.42 | | 0.45 | |
| D | 0.68 | | 0.70 | | |
| E | 0.38 | | 0.45 | | |
| F | 0.42 | | 0.45 | | |
| G | 0.22 | | 0.25 | | |

• **Change Information:**

| Carrier Tape | From (Current) | | Change to (New) | |
|---------------|---|--------|---|------------|
| Assembly Site | PANJIT International Inc. | | PANJIT Semiconductor (Xuzhou) Co., Ltd. | |
| Package | DFN 2L | DFN 3L | DFN1006-2L | DFN1006-3L |
| Dimension |  | | | |
| Symbol (mm) | Dimension | | Dimension | |
| Ao | 0.72 ± 0.05 | | 0.69 ± 0.05 | |
| Bo | 1.12 ± 0.05 | | 1.19 ± 0.05 | |
| Ko | 0.62 ± 0.05 | | 0.63 ± 0.05 | |
| D1 | 0.50 ± 0.05 | | 0.40 ± 0.10 | |

- **Verification /Qualification Data:**

The electrical characterization and high reliability testing have been completed on representative part numbers to ensure there is no change to device functionality or electrical specifications in the datasheet. There will be no change to the Form, Fit, or Function of products affected.

- **Affected Product Type:**

Table 1: Change assembly site from PANJIT International Inc. to PANJIT Semiconductor (Xuzhou) Co., Ltd.

| Wire Material | Wire Diameter (mil) | Function: Small Signal Switching Diodes | | |
|---------------|---------------------|---|--|--|
| Au | 0.8 | 1SS387FN2 | | |

Table 2: Change assembly site from PANJIT International Inc. to PANJIT Semiconductor (Xuzhou) Co., Ltd.

| Wire Material | Wire Diameter (mil) | Function: Bipolar Junction Transistors | | |
|---------------|---------------------|--|-------------|-------------|
| Au | 1.0 | BC847BFN3 | MMBT3904FN3 | MMBT3906FN3 |

- **Effective Date : 16th February, 2024**

➤ **The reliability test results are summarized below:**

Product reliability test result: PASS

| No. | DESCRIPTION | TEST CONDITION | DURATION | FAILURE RATE | |
|-----|--|---|--------------|--------------|-------------|
| 1 | Temperature Cycling (TCT) | Ta = -55°C ~ +150°C (2 cycles / Hour) | 1000 CYCLES | 0/77 PCS | 3 LOTS PASS |
| 2 | High Temperature Storage Test (HTSL) | Ta = 150°C | 1000 HOURS | 0/77 PCS | 3 LOTS PASS |
| 3 | Resistance to Solder Heat (RSH) | Temperature of solder pot = 260 ±5°C Time for dipping in solder = 10 +2/-0 Sec | 1 CYCLE | 0/30 PCS | 3 LOTS PASS |
| 4 | Solder ability (SD) | Temperature of solder pot = 245 ±5°C Time for dipping in solder = 5 ±0.5 Sec | 1 CYCLE | 0/10 PCS | 3 LOTS PASS |
| 5 | Intermittent Forward Operation Life (IFOL) | △Tj≥100°C Power On: 120 sec Power Off: 120 sec | 15000 CYCLES | 0/77 PCS | 3 LOTS PASS |
| 6 | High Temperature Reverse Bias (HTRB) | Ta = 140°C , VR = 80%VB, DC supply | 1000 HOURS | 0/77 PCS | 3 LOTS PASS |
| 7 | Autoclave (AC) | Ta = 121°C, P = 29.7psia ,100%RH | 96 HOURS | 0/77 PCS | 3 LOTS PASS |
| 8 | Temperature Humidity Storage (THS) | Ta = 85°C , RH = 85% | 1000 HOURS | 0/77 PCS | 3 LOTS PASS |

• **ELECTRICAL CHARACTERISTICS SUMMARY:**

There is no change to the product electrical specifications.

• **SAMPLES NEED :**

Contact your local PANJIT sales representative.

• **TECHNICAL CONTACT :**

E-mail: jwchen@panjit.com.tw

• **FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:**

Contact your local PANJIT sales representative.

• **ADDITIONAL RELIABILITY :**

Contact your local PANJIT sales representative.

• **CHANGED PART IDENTIFICATION :**

The tracking of 1st delivery after change can be identified by production lot number. Please contact your local sales for tracking lot number.

Please refer to below Lot number rule:

Lot number: **3924XXXXX**.

1st digit "3" denotes Year 2023.

2nd digit "9" denotes September.

3rd and 4th digits denote Day.

From 5th digits (XXXXX) denotes production serial number.

Customer Acknowledgement Form

(To be filled out by the customer and returned to HQBU of PANJIT)

The indicated Customer Notification letter was received and acknowledged by the undersigned authority.

Company Name : _____

Customer Name : _____(Signature) Date : _____

PCN Number : PCN# 2311001

Approval for the Product/Process change: ☐Yes ☐No

Comments/Additional requests:

Thanks for your attention on this matter. Please return the acknowledgment form to your local PANJIT sales representative.

Please note that no objection within 30 days upon receiving will be deemed as being accepted and agreed with this Process Change Notification.