

# Product/process change notification

PCN N° 2022-226-A

Dear customer,

Please find attached our Infineon Technologies AG PCN:

## Introduction of an additional wafer production at Infineon Technologies (Kulim) Sdn. Bhd., Kulim, Malaysia for several CIPOS™ Mini products

Important information for your attention:

- Please respond to this PCN by indicating your decision on the approval form, sign it and return to your sales partner before **2023-05-12**
- Infineon aligns with the widely recognized JEDEC STANDARD “**JESD46**“, which stipulates: “**Lack of acknowledgement of the PCN within 30 days constitutes acceptance of the change.**”

Your prompt reply will help Infineon to assure a smooth and well-executed transition. If Infineon does not hear from your side by the due date, we will assume your full acceptance to this proposed change and its implementation.

Your attention and response to this matter is greatly appreciated.

#### Infineon Technologies AG

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# Product/process change notification

**PCN N° 2022-226-A**

► **Products affected**

Please refer to attached affected product list  
 “pcn\_2022-226-A\_[customer-no].pdf”

► **Detailed change information**

**Subject** Introduction of an additional wafer production site.

**Reason** Expansion of wafer production to assure continuity of supply and enable flexible manufacturing.

| <b>Description</b>              | <u><b>Old</b></u>  | <u><b>New</b></u>   |
|---------------------------------|--|---|
| Wafer production and probe site | <ul style="list-style-type: none"> <li>■ Infineon Technologies Austria AG, Villach, Austria</li> </ul> | <ul style="list-style-type: none"> <li>■ Infineon Technologies Austria AG, Villach, Austria</li> <li>and</li> <li>■ Infineon Technologies (Kulim) Sdn. Bhd., Kulim, Malaysia</li> </ul> |

► **Product identification**

Internal traceability assured via lot code and development code.  
 External traceability assured via Product Bar Code Label / Lot Code

► **Impact of change**

No impact on electrical performance. Quality and reliability verified by qualification. There is no change in form, fit and function.

► **Attachments**

“pcn\_2022-226-A\_[customer-no].pdf” affected product list

► **Time schedule**

- |                              |            |
|------------------------------|------------|
| ■ Final qualification report | on request |
| ■ First samples available    | on request |
| ■ Intended start of delivery | 2023-07-10 |

If you have any questions, please do not hesitate to contact your local sales office.

# Qualification Test Report



PCN No: 2022-226-A

Date: 2023-03-24

Title: Introduction of an additional wafer production at Infineon Technologies (Kulim) Sdn. Bhd., Kulim, Malaysia for several CIPOS™ Mini products

**Reason for choosing the following test vehicles:**

IGCM04G60HA 4A, Small IGBT RCD1 chip group  
 IGCM20F60GA 20A, Large IGBT RCD1 chip group  
 IM521-X6A 10A, Mid IGBT RCD1(RCDF) chip group

**Scope of qualification:**

PL59 IPM products with IGBT3 600V RC-D1 from Kulim  
 -All IGCMxxx60xx (CIPOS™ Mini)  
 -IM521-X6A (CIPOS™ Mini)

**Assessment of Q-Results:**

All reliability tests including IPI & ESD passed qualification required for Tx9 of RCD-1 IGBT3 KUL transfer

| Stress test   | Abbreviation   | Test conditions   | Readout                          | IGCM04G60HA (Lot1)               | IGCM20F60GA (Lot2)               | IM521-X6A (Lot3)                 |
|---|----------------|---|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
|   |                |   |                                  | fails / stressed                 | fails / stressed                 | fails / stressed                 |
| <b>Initial IPI</b>  | <b>IPI</b>     | Physical inspection   | T0                               | Pass                             | Pass                             | Pass                             |
| <b>Temperature Cycling</b><br>JESD22-A104   | <b>TC</b>      | with preconditioning<br>Ta = -40°C ~ 125°C  | 200 x<br>500 x<br>1000 x         | 0 / 22<br>0 / 22<br>0 / 22       | 0 / 22<br>0 / 22<br>0 / 22       | 0 / 22<br>0 / 22<br>0 / 22       |
|   | <b>IPI</b>     | Physical inspection   | after 1000x                      | Pass                             | Pass                             | Pass                             |
| <b>Unbiased Temperature/Humidity</b><br>JESD22-A118   | <b>UHASt</b>   | with preconditioning<br>Ta = 130°C, RH = 85%  | 96 h                             | 0 / 22                           | 0 / 22                           | 0 / 22                           |
|   | <b>IPI</b>     | Physical inspection   | after 96h                        | Pass                             | Pass                             | Pass                             |
| <b>High Temperature Storage</b><br>JESD22-A103  | <b>HTS</b>     | Ta = 125 °C   | 168 h<br>500 h<br>1000 h         | 0 / 22<br>0 / 22<br>0 / 22       | 0 / 22<br>0 / 22<br>0 / 22       | 0 / 22<br>0 / 22<br>0 / 22       |
|   | <b>IPI</b>     | Physical inspection   | after 1000h                      | Pass                             | Pass                             | Pass                             |
| <b>High Voltage</b><br><b>High Humidity, High Temperature</b><br><b>Reverse Bias</b><br><b>- Low Side</b><br>JESD22-A101  | <b>THB_LS</b>  | Ta = 85°C<br>RH = 85%<br>VCE = 80 V   | 168 h<br>500 h<br>1000 h         | 0 / 11<br>0 / 11<br>0 / 11       | 0 / 11<br>0 / 11<br>0 / 11       | 0 / 11<br>0 / 11<br>0 / 11       |
| <b>High Voltage</b><br><b>High Humidity, High Temperature</b><br><b>Reverse Bias</b><br><b>- High Side</b><br>JESD22-A101 | <b>THB_HS</b>  | Ta = 85°C<br>RH = 85%<br>VCE = 80 V   | 168 h<br>500 h<br>1000 h         | 0 / 11<br>0 / 11<br>0 / 11       | 0 / 11<br>0 / 11<br>0 / 11       | 0 / 11<br>0 / 11<br>0 / 11       |
| <b>High Temperature Reverse Bias</b><br><b>- Low Side</b><br>JESD22-A108  | <b>HTRB_LS</b> | Tjmax <=150°C<br>VCE = 480 V  | 168 h<br>500 h<br>1000 h         | 0 / 11<br>0 / 11<br>0 / 11       | 0 / 11<br>0 / 11<br>0 / 11       | 0 / 11<br>0 / 11<br>0 / 11       |
| <b>High Temperature Reverse Bias</b><br><b>- High Side</b><br>JESD22-A108   | <b>HTRB_HS</b> | Tjmax <=150°C<br>VCE = 480 V  | 168 h<br>500 h<br>1000 h         | 0 / 11<br>0 / 11<br>0 / 11       | 0 / 11<br>0 / 11<br>0 / 11       | 0 / 11<br>0 / 11<br>0 / 11       |
| <b>Intermittent Operational Life</b><br>MIL-STD-750 Method 1037   | <b>IOL</b>     | with preconditioning<br>Delta Tj = 100 °C   | 5000 x<br>10000 x                | 0 / 12<br>0 / 12                 | 0 / 12<br>0 / 12                 | 0 / 12<br>0 / 12                 |
| <b>ESD Characterization - HBM</b><br>ANSI/ESDA/JEDEC JS-001-2017  | <b>ESD HBM</b> | Pulse interval =<br>1sec(Domain),<br>10sec(Matrix), 0.3sec(I/O)<br>Discharge option = Yes<br>Polarity = +/- | 2000V<br>2250V<br>2500V<br>3000V | 0 / 9<br>0 / 9<br>0 / 9<br>0 / 9 | 0 / 9<br>0 / 9<br>0 / 9<br>0 / 9 | 0 / 9<br>0 / 9<br>0 / 9<br>0 / 9 |
| <b>ESD Characterization - CDM</b><br>ANSI/ESDA/JEDEC JS-002-2018  | <b>ESD CDM</b> | 3x pulses   | 500V<br>750V<br>1000V            | 0 / 3<br>0 / 3<br>0 / 3          | 0 / 3<br>0 / 3<br>0 / 3          | 0 / 3<br>0 / 3<br>0 / 3          |

## PCN 2022-226-A

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Affected products sold to FUTURE ELECTRONICS LTD. (4049887)

| Sales name  | SP number   | OPN              | Package       | Customer part number |
|-------------|-------------|------------------|---------------|----------------------|
| IGCM04F60GA | SP001246994 | IGCM04F60GAXKMA1 | PG-MDIP-24-12 | IGCM04F60GAXKMA1     |
| IGCM06F60GA | SP001247004 | IGCM06F60GAXKMA1 | PG-MDIP-24-12 | IGCM06F60GAXKMA1     |
| IGCM10F60GA | SP001247016 | IGCM10F60GAXKMA1 | PG-MDIP-24-12 | IGCM10F60GAXKMA1     |
| IGCM15F60GA | SP001247022 | IGCM15F60GAXKMA1 | PG-MDIP-24-12 | IGCM15F60GAXKMA1     |