# Cree, Inc. Product Change Notification

*PCN-PW071: Qualification of Expanded 150mm Wafer Manufacturing Facility for All Bare Die SiC Schottky Diode Products*

**Change**

Cree has commenced the qualification of SiC Schottky diodes manufactured on 150mm wafers at its expanded semiconductor manufacturing facility located in Durham, NC. The purpose of this PCN is to provide advanced notice to our customers of the qualification schedule, so they may develop their own qualification plan in advance.

**Change Description**

Cree SiC Schottky diodes are currently manufactured on 150mm diameter wafers at Cree's fabrication facility in Research Triangle Park, North Carolina, USA. The production line is being expanded to include additional manufacturing capability at Cree's fabrication facility in Durham, North Carolina, USA. This manufacturing line expansion will increase production capacity and ensure Cree's continued ability to provide diodes to our customers within our standard delivery times.

**Part Description**

Refer to Table 1 for a full list of bare die part numbers.

**Impact of Change**

For all part numbers in Table 1 (bare die products), there is no change to fit, function, or reliability of the diode. Individual die dimensions, as specified in product datasheets, will not change. However, the appearance of the wafer fiducials will change, and the overall arrangement of die and fiducials on a wafer will change. Refer to Figures 1-3. Customers should make note of these changes for potential impact to their pick-and-place operations.

It should be noted that the additional Durham manufacturing facility is a Class 100 (ISO 5) cleanroom certified to ISO9001 and IATF16949:2016 standards and has been a fully-functional Cree-owned semiconductor manufacturing facility in operation for more than 20 years.

Due to the differences described above, part numbers that customers use for ordering sawn wafers manufactured in the expanded facility will change. 150mm wafers manufactured in the current RTP fabrication facility are ordered using the core 13-character part number plus the suffix "-FR6". For wafers manufactured in the expanded facility, customers will place orders using a new suffix, "-FD6". For example, a customer wishing to receive CPW4-1200-S005B 1200V 5A as a sawn wafer from the expanded facility will order the part number CPW4-1200-S005B-FD6.

**Reason for Change**

The reason for this change is to increase production capacity and to ensure Cree's ability to provide diodes to our customers within our standard delivery times.

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**Reason for Notification**

The purpose of this notification is to provide advanced notice to our customers who may need to perform their own qualification or verification, thereby enabling them to prepare for the change in advance and minimize disruption to their manufacturing lines.

If you have any concerns or questions, please notify your local sales representative.

**Qualification Plan**

All parts will be qualified to all tests listed in the existing 150mm qualification reports for each respective part number. All tests will be performed to parameters that meet or exceed the test parameters listed in the existing 150mm qualification report.

**Qualification Schedule**

The qualification of diodes manufactured in the Durham facility will commence in August 2018, with completion scheduled for October 2018. Shipment to customers of qualified Schottky diodes manufactured in the expanded facility will begin in January 2019.

First qualified parts will be available in October 2018. Engineering samples will be available beginning in August 2018.

**Contact**

Any questions or requests for additional information should be directed to your sales representative or by contacting Cree, Inc. directly at 919-287-7888, or via email at CreePower_sales@cree.com.

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Title: Product Marketing Manager, SiC Schottky Diodes
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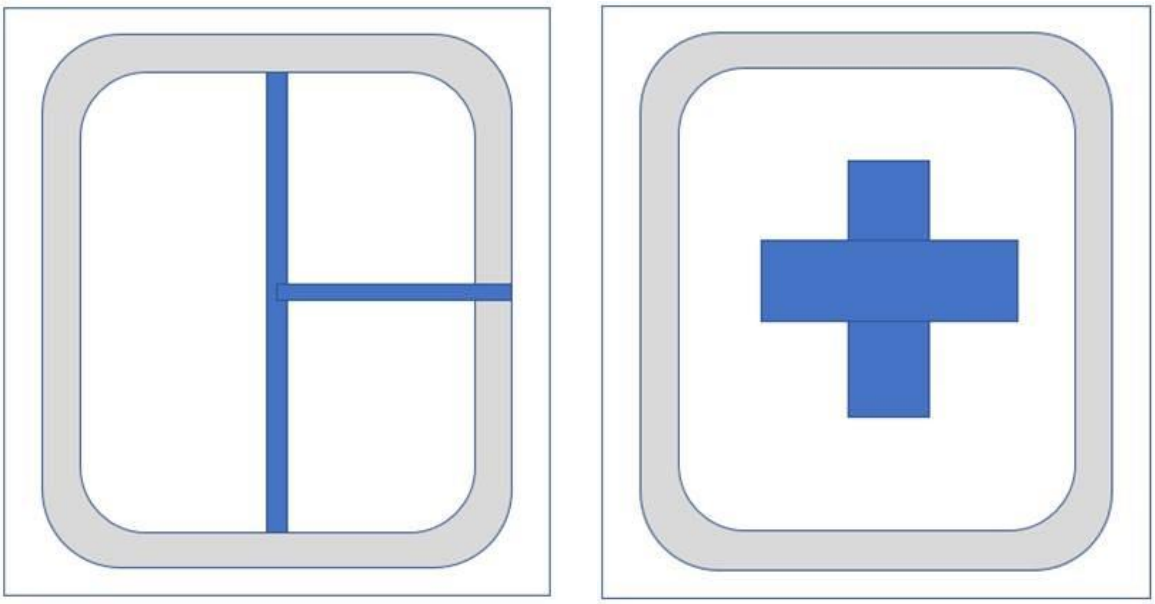
# PCN-PW071

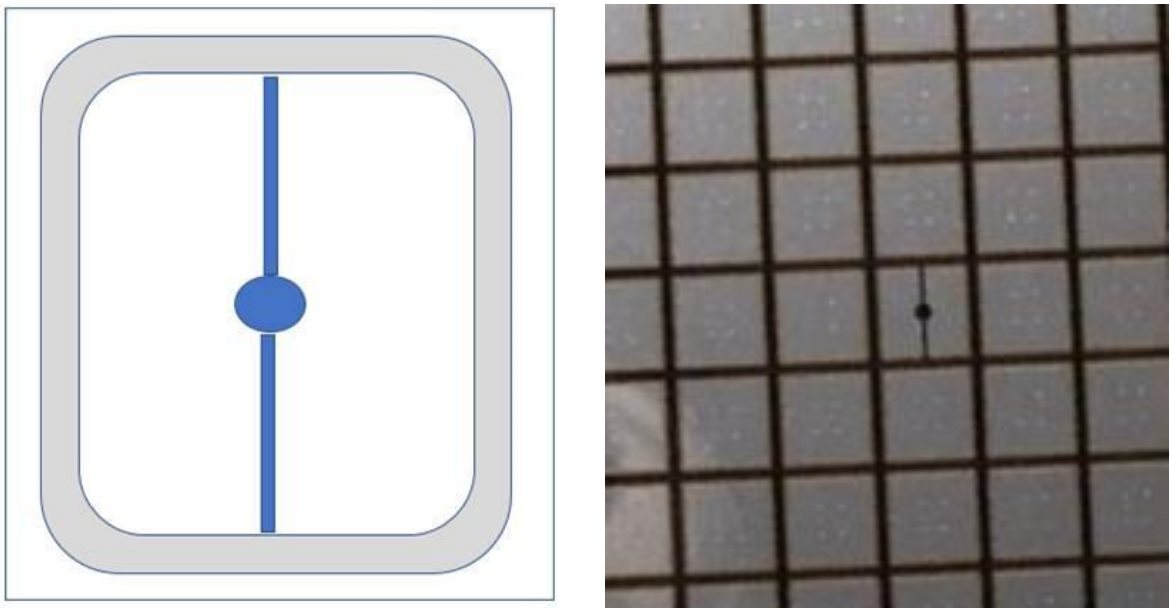
**Table 1: Cree Bare Die Schottky Diode Part Numbers Included in the Production Line Expansion**

| | | |
|---|---|---|
| CPWR-0600-S001B-FR6 | CPW3-0600-S002B-FR6 | CPW4-1200-S008B-FR6 |
| CPW2-0600-S006B-FR6 | CPW3-0600-S003B-FR6 | CPW4-1200-S010B-FR6 |
| CPW2-0600-S008B-FR6 | CPW3-0600-S004B-FR6 | CPW4-1200-S015B-FR6 |
| CPW2-0600-S010B-FR6 | CPW3-0650-S004B-FR6 | CPW4-1200-S020B-FR6 |
| CPW2-0650-S006B-FR6 | CPW3-1700-S010B-FR6 | EPW4-1200-S020B-FR6 |
| CPW2-0650-S008B-FR6 | CPW3-1700-S025B-FR6 | CPW5-0650-Z030B-FR6 |
| CPW2-0650-S010B-FR6 | CPW4-1200-S002B-FR6 | CPW5-0650-Z050B-FR6 |
| CPW2-0650-S012B-FR6 | CPW4-1200-S005B-FR6 | CPW5-1200-Z050B-FR6 |
| CPW2-0650-S016B-FR6 | | CPW5-1700-Z050B-FR6 |

**Figure 1: Visual Description of Wafer Fiducial Marking Change**



Technical drawing of fiducials printed in the current Research Triangle Park production line



Technical drawing of fiducial (left) and on-wafer photograph of fiducial (right) from the new expanded production line

**Figure 2: Wafer Photograph Showing Location of Fiducials on Wafer Manufactured on the New Expanded Production Line**

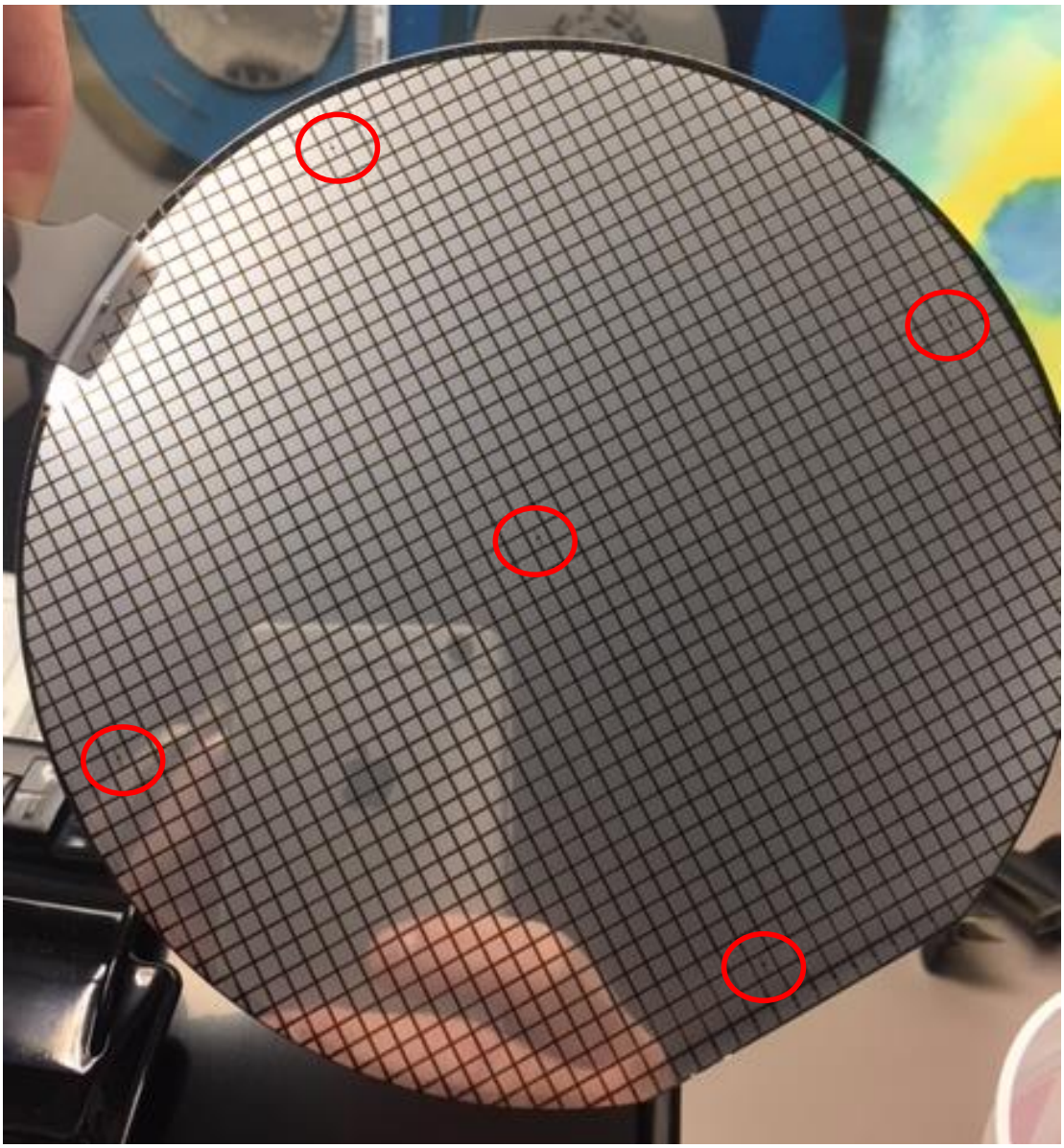
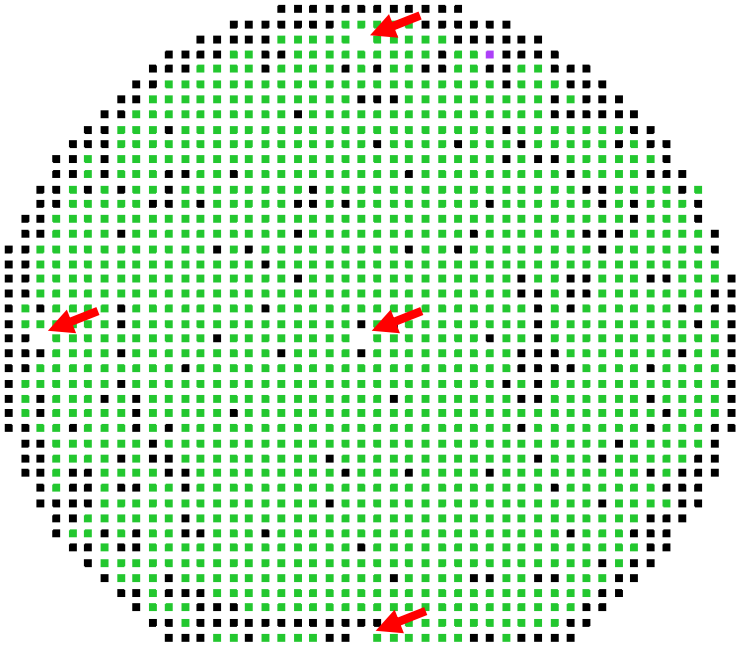
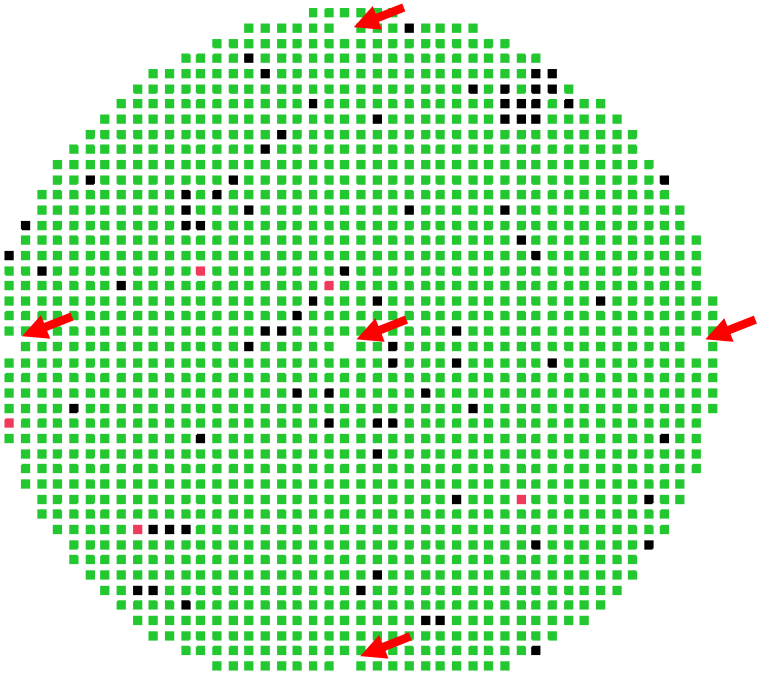


**Figure 3: Differences in layout between the two manufacturing lines**



Wafer probe map showing location of fiducials on wafer manufactured on the existing Research Triangle Park production line. Note that the fiducial on the right is not shown, as it is outside of the probe map area.



Wafer probe map showing location of fiducials on wafer manufactured on the new expanded production line. Note that the locations of the fiducials have shifted up and to the left.