

Cree® Product Change Notification

PCN Number:	CREE-PCN-1275	Date Issued:	March 3, 2021
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Title

Change from 100-mm to 150-mm Wafers for the Manufacturing of 1700 V SiC MOSFET Discrete Devices

Description of the Change

Cree’s second-generation 1700 V MOSFETS, also known as “C2M™”, are currently manufactured on 100-mm diameter SiC wafers at Cree’s fabrication facility in RTP, North Carolina, USA. A change of wafer diameter from 100 mm to 150 mm is planned to increase the production capacity of Cree to ensure that its continued ability provides MOSFETs to its customers within the standard delivery times. Note that MOSFET devices based on 150-mm wafers are manufactured at the same facility that is currently qualified for 100-mm wafers.

Along with the change to 150-mm wafers, Cree’s production line is being expanded to include an additional manufacturing capability. The back-metal stack for MOSFETs will be changed from silver (Ag) to gold (Au). There is no change to die or gate pad dimension as a result of this transition.

Benefit of the Change

The qualification of 150-mm wafers in MOSFET devices manufacturing is necessary for Cree to increase its production capacity to meet market demand and customer expectation. The change to gold (Au) back-metal stack will improve the ability of MOSFET devices to withstand harsh environments.

Affected Products

Table 1 lists the products affected by the change. Any new parts introduced after the publication of this PCN will be based on 150-mm SiC wafers. Table 2 summarizes the difference in part marking between 100-mm and 150-mm wafers.

Table 1. Affected Products.

Cree Part Number	Description	Previous Data Sheet Rev.	New Datasheet Rev.
C2M1000170D	1700 V, 1000 mΩ, TO-247-3L	Rev. E, 10-2015	Rev. 7, 2-2021

Table 2. Part Marking (100 mm vs 150 mm).

	4" (100 mm) Wafer	6" (150 mm) Wafer
Package Marking	Cree C2M1000170D XDWWYY	Cree C2M1000170D XDWWYY
Lot code	X = Unique Character D = Build Number as 1-9 WW = Work Week YY = Year	X = Unique Character D = Build Number as A - I WW = Work Week YY = Year

Qualification Status and Plan

Upon completion of its qualification, Cree will deliver a qualification report and any requested samples. All processes will be qualified through the internal Process Change Review Board (PCRB). Please note that Cree will no longer accept any orders for 100-mm version of this device.

Key Dates

Table 3 provides the estimated dates for key PCN milestones, based on the information available on the date this PCN is issued. Any update to these dates can be provided by the Cree contact listed in Table 4.

Table 3. Key PCN Estimated Dates.

Qualification Report Availability	February 2021
Sample Availability	January 2021
Proposed First Ship Date	April 2021

Anticipated Impact

Along with the release of this PCN, an update to the existing product datasheets and SPICE models will be provided. The new datasheets provide customers with a comprehensive list of dynamic and static behavior of the devices and utilize the latest advance in characterization test equipment. There is no change to any Min/Max specifications; however, the datasheets contain all new graphs with the updated typical values.

The base ordering part numbers will not change. Customers can continue to place orders using the same part number. Qualification activities were performed to determine the impact to the products listed in Table 1.

Contact Information

If you have any questions regarding this PCN, please refer to the contact information listed in Table 4.

Table 4. Contact Information.

Cree Contact:	CREE Customer Service
Cree Contact E-Mail:	Csorder_admin@cree.com
Address:	4600 Silicon Drive Durham, NC 27703 United State of America
Cree Contact:	CREE Customer Service

Revision History

Date	Revision	Description
March 3, 2021	1.0	Initial release; updated from Advance CREE-PCN-1244; updated 150-mm part number by removing -A suffix in Table 2