Cree® Product Change Notification

PCN Number:	CREE-PCN-1306	**Date Issued:**	June 15, 2021

Title

Expansion of 150-mm Wafer Manufacturing for All Packaged C3M 1200 V 16 mΩ, 21 mΩ, 32 mΩ, 40 mΩ, 75 mΩ, 160 mΩ, and 350 mΩ SiC MOSFETs at Cree's Durham (DUR) Facility

Description of the Change

Cree's C3M 1200 V SiC MOSFETs are currently manufactured on 150-mm diameter wafers at Cree's fabrication facility in Research Triangle Park (RTP), North Carolina, USA. The production line is now being expanded to utilize Cree's capacity at its fabrication facility in Durham (DUR), North Carolina, USA. Note that all tools of both facilities are nth-of-a-kind (NOAK) tools, namely, same tool set, same process, same process controls, same chart setup, same automation, same interface, etc.

Benefit of the Change

This expansion will ensure Cree's continued ability to provide products to customers within standard delivery times. The goal is to provide quality products that meet and exceed customer expectations.

Affected Products

Table 1 lists the products affected by this courtesy notification.

Table 1. *Affected Products List.*

Cree Part Number	Description	Junction Temperature Range (T_j)
C3M0016120D	1200 V, 16 mΩ	-40°C - 175°C
C3M0016120K	1200 V, 16 mΩ	-40°C - 175°C
C3M0021120D	1200 V, 21 mΩ	-40°C - 175°C
C3M0021120K	1200 V, 21 mΩ	-40°C - 175°C
C3M0032120D	1200 V, 32 mΩ	-40°C - 175°C
C3M0032120K	1200 V, 32 mΩ	-40°C - 175°C
C3M0040120D	1200 V, 40 mΩ	-40°C - 175°C
C3M0040120K	1200 V, 40 mΩ	-40°C - 175°C
C3M0075120K-A	1200 V, 75 mΩ	-40°C - 175°C
C3M0075120K	1200 V, 75 mΩ	-55°C - 150°C
C3M0075120D-A	1200 V, 75 mΩ	-40°C - 175°C
C3M0075120D	1200 V, 75 mΩ	-55°C - 150°C
C3M0075120J	1200 V, 75 mΩ	-55°C - 150°C
C3M0160120D	1200 V, 160 mΩ	-55°C - 150°C

C3M0160120J	1200 V, 160 mΩ	-55°C - 150°C
C3M0350120D	1200 V, 350 mΩ	-55°C - 150°C
C3M0350120J	1200 V, 350 mΩ	-55°C - 150°C

Qualification Status and Plan

All parts will be qualified to the tests listed in the qualification plan for each respective part number. The tests for C3M0032120D, C3M0032120K, C3M0075120D, C3M0075120J, and C3M0075120K have been performed to meet or exceed the test parameters listed in the existing qualification reports. The qualification testing results for the remaining parts shown in Table 2 will be discussed and summarized in the upcoming qualification reports. Therefore, the updated version of this CREE-PCN-1292 document will be issued when a new qualification report(s) is completed each time.

Key Dates

Table 2 provides the projected dates for key PCN milestones, based on the information available on the date this PCN is issued. Any update to theses dates can be provided by the Cree contact listed in Table 3.

***Table 2**. Key PCN Estimated Dates.*

Cree Part Number	(Projected) Completion Date for the Qualification Report	(Projected) First Ship Date
C3M0016120D	6/30/21	TBD
C3M0016120K	6/30/21	TBD
C3M0021120D	TBD	TBD
C3M0021120K	TBD	TBD
C3M0032120D	6/11/21	6/11/21
C3M0032120K	6/11/21	6/11/21
C3M0040120D	7/10/21	TBD
C3M0040120K	7/10/21	TBD
C3M0075120D	6/11/21	6/11/21
C3M0075120K	6/11/21	6/11/21
C3M0075120D-A	6/11/21	6/11/21
C3M0075120K-A	6/11/21	6/11/21
C3M0075120J	6/11/21	6/11/21
C3M0160120D	TBD	TBD
C3M0160120J	TBD	TBD
C3M0350120D	TBD	TBD
C3M0350120J	TBD	TBD

Anticipated Impact

There is no change to form, fit, function, or reliability of the products listed in Table 1. The additional DUR facility is a Class-100 (ISO 5) cleanroom certified to meet the ISO 9001: 2015 and IATF 16949:2016 standards. It has been a fully-functional Cree-owned semiconductor manufacturing facility in operation for more than 20 years.

This change impacts the wafer production line only, and no changes are made to the backend assembly processes. As such, the device package is not impacted. Products manufactured at the DUR facility will have identical specifications and part numbers to those manufactured today. Customers may continue to place orders using the same part numbers.

Cree will not mix source wafer types within the individual builds of packaged discrete devices. Each packaged device date code will only be sourced from either the existing manufacturing line or the expanded manufacturing line. Note that device shipments to distributors or customers may contain a mix of date codes and therefore, these shipments can contain a mix of date codes sourced from the different production lines. Traceability to manufacturing line will be maintained by Cree.

Contact Information

If you have any questions regarding this Courtesy PCN, please refer to the contact information listed in Table 3.

Table 3. *PCN Contact.*

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

Revision History

Date	Revision	Revision Summary
June 15, 2021	1.0	Initial release