

Wolfspeed® Product/Process Change Notification

PCN Number:	CREE-PCN-1339	PCN Issue Date:	December 2, 2021
PCN Type:	Major		

PCN Title

Power Modules Transition to 150-mm Wafer Manufacturing at Wolfspeed's Durham (DUR) Facility

Description of the Change

Wolfspeed's MOSFET and CPW Schottky diodes have been historically manufactured on 100-mm-diameter wafers at Wolfspeed's fabrication facilities in Research Triangle Park (RTP), North Carolina, USA. To increase the throughput and provide MOSFET and Schottky diodes to Wolfspeed's customers within the standard delivery times, the change of wafer diameter from 100 mm to 150 mm has been recently implemented. In addition, the back-metal stack for MOSFETs used in the parts identified in Table 1 will change from silver (Ag) to gold (Au). Nevertheless, there is no change to die or gate pad dimensions or the module design because of this transition. Due to demand increase, the production line is also being expanded to utilize Wolfspeed's capacity at its fabrication facility in Durham (DUR), North Carolina, USA. All tools and processes of both facilities are qualified through the internal Process Change Review Board (PCRB).

Note that the current 5th generation (CPW5) Schottky diodes will be replaced with the 6th generation (CPW6) Schottky diodes as part of the 150-mm transition. The CPW6 diodes that were designed as a drop-in replacement part for the CPW5 diodes are now being qualified. Therefore, end-user systems will not be impacted by use of the CPW6 diodes in the part numbers listed in Table 1.

Benefit of the Change

The qualification of 150-mm wafers and expansion is necessary for Wolfspeed to increase its production capacity to meet market demand and customer expectation.

Anticipated Impact

There is no expected change to reliability of the bare die devices because of this change. It should be noted that the 150-mm wafer substrates are manufactured at the expanded manufacturing facilities and by the same manufacturer as the currently qualified 100-mm substrates.

Affected Products

Table 1 lists the products affected by this Major PCN. Depending on product generation, either Gen-2 MOSFET and/or CPW5-1200-Z050A Schottky diodes are being replaced in these power modules. In other words, future deliveries of these products will include modules with the die qualified from Wolfspeed's 150-mm production line.

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Table 1. Affected Products.

Wolfspeed Part Number	Wolfspeed Part Number
*CAS110M12BM2	*CCS050M12CM2
*CAS300M12BM2	*WAS110M12BM2
*CAS480M12HM3	*WAS300M12BM2
CAB760M12HM3	**CAB008M12GM3
**CAB006M12GM3	**CAB008A12GM3
CAB006A12GM3	*CAS300M17BM2

*/**/** Denotes timing shown in Table 2.

Qualification Status and Plan

All processes at Wolfspeed's facilities are qualified through the internal Process Change Review Board (PCRB). The tests for the affected products included in Table 1 have been performed to meet or exceed the test parameters listed in the existing qualification reports. The 150-mm bare die devices have completed their qualification, and the modules have passed or in the process of completion.

Key Implementation Date

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 these dates can be provided by the Wolfspeed contact listed in Table 3.

Table 2. Key PCN Estimated Dates.

Task	Date
Qualification Report Availability	November 2021
Sample Availability	November 2021
Proposed First Ship Date	November 2021 *November 2021 (DUR MOSFET), February 2022 (CPW6) ** January 2022; ***February 2022

Customer Acknowledgement

Customer is requested to acknowledge this notification within 30 days of its issue date. Lack of response within 30 days of PCN release will constitute the change acceptance.

Name: _____ Title: _____

Phone: _____ Email: _____

Customer Comment: _____

Customer Signature: _____ Date: _____

Contact Information

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

Table 3. PCN Contact.

Wolfspeed Contact:	Ty McNutt
Wolfspeed Contact E-Mail:	ty.mcnutt@wolfspeed.com
Address:	535 W Research Center Blvd. Fayetteville, AR 72701 U.S.A.

Revision History

Date	Revision	Description
November 30, 2021	0	Initial release