

Wolfspeed® Product/Process Change Notification

PCN Number: CREE-PCN-1377

PCN Issue Date: January 20, 2022

PCN Type: Courtesy

PCN Title

Transitioning Wafer ID to a New Wafer Scribe Format Based on SEMI Specification M12-0706 for Bare Die Products

Description of the Change

Due to growth and expansion, Wolfspeed needs to change the wafer ID format of its bare die products. Its legacy 9-character wafer ID, AANNNN-NN, cannot meet future demand. Therefore, Wolfspeed has determined to adopt the SEMI M12-0706 standard, the specification for serial alphanumeric marking, as its new wafer scribe format. As it is shown in Figure 1, the SEMI standard format, **XXXXXXXXVVCS**, consists of the following elements:

- **XXXXXXXX**: An 8-character identification string (7 alphanumeric + 1 numeric) that is generated through encoding transaction data at the time when a wafer is created.
- **VV**: A vendor code in which “CI” (Wolfspeed Incorporated) is Wolfspeed’s vendor code.
- **CS**: A SEMI checksum that enables a program to determine if an ID, when read, is correct. Note that C = [A – H] and S = [0 – 7].



Figure 1. (a) Current Scribe Format and (b) Current Scribe Format (M-12).

The wafer ID change will be applied to the products manufactured from 150-mm and 200-mm SiC wafers. Figures 2 illustrates the M12 position on a 150-mm wafer in which its orientation of scribe is 180° from the legacy 9-character position. Figure 3 shows the comparison of real-wafer images.

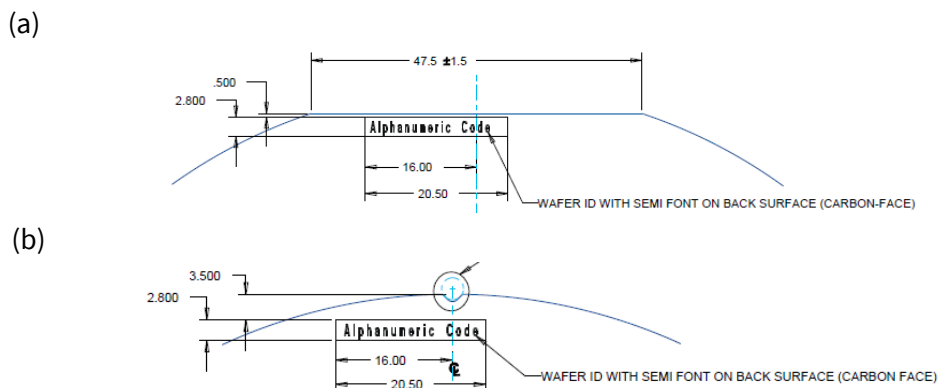


Figure 2. M12 Position Shown on (a) 150-mm Flatted Wafer and (b) 150-mm Notched Wafer.

<p>© 2021 Wolfspeed, Inc. All rights reserved. Wolfspeed® and the Wolfstreak logo are registered trademarks and the Wolfspeed logo is a trademark of Wolfspeed, Inc.</p>	<p>Title: Transitioning Wafer ID to a New Wafer Scribe Format Based on SEMI Specification M12-0706 for Bare Die Products</p>	
	<p>Document #: CREE-PCN-1377</p>	
	<p>Issue Date: January 20, 2022</p>	<p>Page: 1 of 4</p>

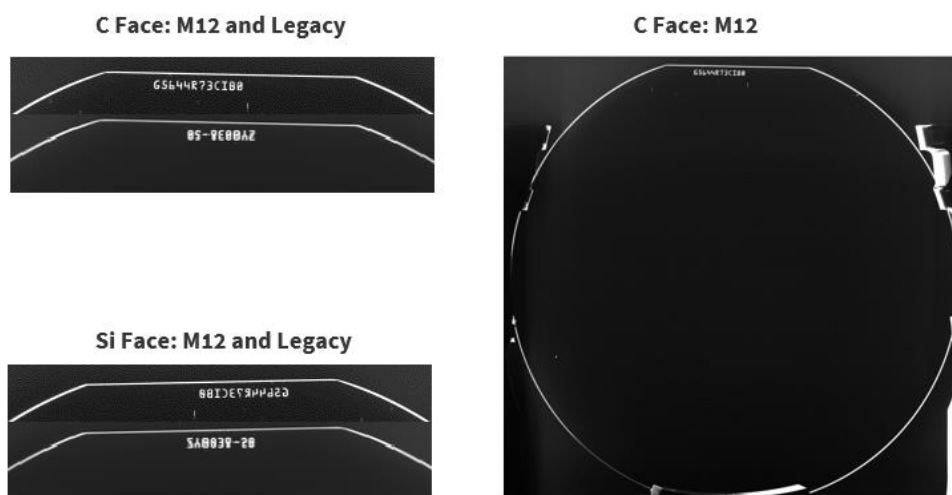


Figure 3. Scribe Images of a 150-mm Wafer.

Benefit of the Change

Because the M12 format is a widely accepted industry standard, the transition to this new wafer ID format at Wolfspeed will lead to a swift industry standard adoption. In addition, the SEMI-compliant optical character readers (OCR) have built-in functions to read the M12 format with the checksum, which will prevent OCR from misreading and reduce the instance of processing errors involving flipped wafers. Moreover, M12 wafer ID creation is based on “wafer slice of the day” at a site, providing ample IDs for future growth.

Affected Products

Table 1 lists the bare die products affected by the proposed wafer ID format change on the date this PCN is issued.

Table 1. Estimated Key PCN Dates.

MOSFET Die		Schottky Die	
CPM2-1200-0025A	CPM3-1200-0021A	CPW2-0600-S006B	CPW3-0650-S004B
CPM2-1200-0040A	CPM3-1200-0032A	CPW2-0600-S008B	CPW4-1200-S002B
CPM2-1200-0080A	CPM3-1200-0075A	CPW2-0600-S010B	CPW4-1200-S005B
CPM2-1200-0160A	CPM3-1700-0020E	CPW2-0650-S006B	CPW4-1200-S008B
CPM2-1700-0045A		CPW2-0650-S008B	CPW4-1200-S010B
CPM3-0650-0015A		CPW2-0650-S010B	CPW4-1200-S015B
CPM3-0900-0010A		CPW2-0650-S012B	CPW4-1200-S020B
CPM3-0900-0030A		CPW2-0650-S016B	CPWR-0600-S001B
CPM3-0900-0065A		CPW3-0600-S002B	EPW4-1200-S010A
CPM3-1200-0013A		CPW3-0600-S003B	EPW4-1200-S020A
CPM3-1200-0016A		CPW3-0600-S004B	

Qualification Plan and Status

As this change is a standard wafer ID format process, no additional qualification is required or will be performed to complete the proposed change.

Anticipated Impact

There is no change in fit, form, function, or reliability of the power devices. Product part numbers will not change. All existing traceability will be maintained by Wolfspeed.

Key Implementation Date

Table 2 provides the estimated dates for key PCN milestones based on the information available on the date this PCN is issued. Any updates to these dates can be provided by your Wolfspeed contact. Customers are requested to clarify any special sample requirements and/or raise any concern about this change within 30 days of the PCN issue date; otherwise, this change is deemed acceptable to the customers.

Table 2. *Estimated Key PCN Dates.*

Task	Date
Samples (limited quantity)	April 2022
Last Day of Unchanged Products	June 2022
First Day of Products with New Scribe Format	July 2022

Contact Information

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

Table 3. *PCN Contact.*

Wolfspeed Contact	Mingyuan Zhao
Wolfspeed Contact E-Mail	mingyuan.zhao@Wolfspeed.com
Wolfspeed Contact Phone	
Address	4600 Silicon Drive Durham, NC 27703 U.S.A.

Revision History

Date	Revision	Description
January 20, 2022	0	Initial release