

Cree, Inc. Product Change Notification

PCN-PW067: Modification of 45 mm SiC Module by the addition of a New Housing Package

Change

Cree is modifying the 45 mm SiC module by adding a new housing package while keeping plastic material the same.

Change Description

Cree's 45 mm SiC modules are currently manufactured with a housing package that consists of multiple inserts, 28 terminal pins and a housing (as shown in Figure 1(a)). All of these parts need to be assembled separately. By using the new housing package (as shown in Figure 1(b)), the whole manufacturing process has been simplified, as count of plastic parts has been reduced. Terminal pins are now injection molded into the small tabs of plastic housing which further increase the creepage distance between terminals to the heatsink. Tolerances has been specified now for the PCB mounting standoffs which allow the customers to mechanically affix the module to a PCB using plastic thread-forming screws.

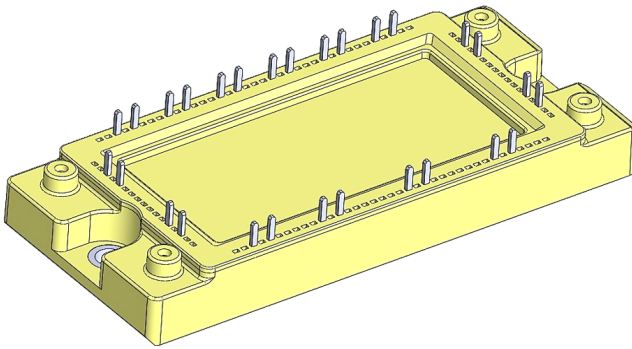


Figure 1(a)

Figure 1(a): Current Package of the 45 mm SiC Module

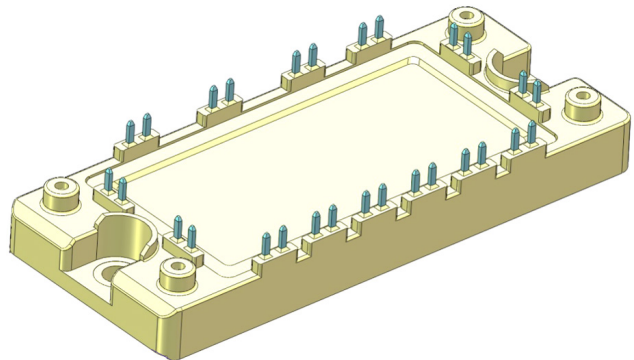


Figure 1(b)

Figure 1(b): New Package of the 45 mm SiC Module

Part Description

Part numbers of 45 mm SiC modules that will be affected by this update are listed in the Table 1.

| $R_{DS(on)}$ (m Ω) | Product | Package (mm) | Voltage Rating (V) | Junction temperature rating ($^{\circ}$ C) |
|----------------------------|--------------|--------------|--------------------|---|
| 80 | CCS020M12CM2 | 45 mm | 1200 | 150 |
| 25 | CCS050M12CM2 | 45 mm | 1200 | 150 |

Table 1: Part numbers of affected 45 mm SiC modules

Impact of Change

There will be a major change in the form and fit of 45 mm SiC module with the new housing package. This major change includes 0.7 mm decrement in the height of the terminal pins with an addition of small tabs to increase the creepage distance (as shown in Figure 3 and Figure 4). This change will have an impact on all of the 45 mm SiC modules (as shown in Table 1). There will be no change in the part number or function of the affected modules. Figure 2 reflects the physical dimensions of current 45 mm SiC module while Figure 3 indicates the physical dimensions (with tolerances) of new 45 mm SiC module based on the new housing package.

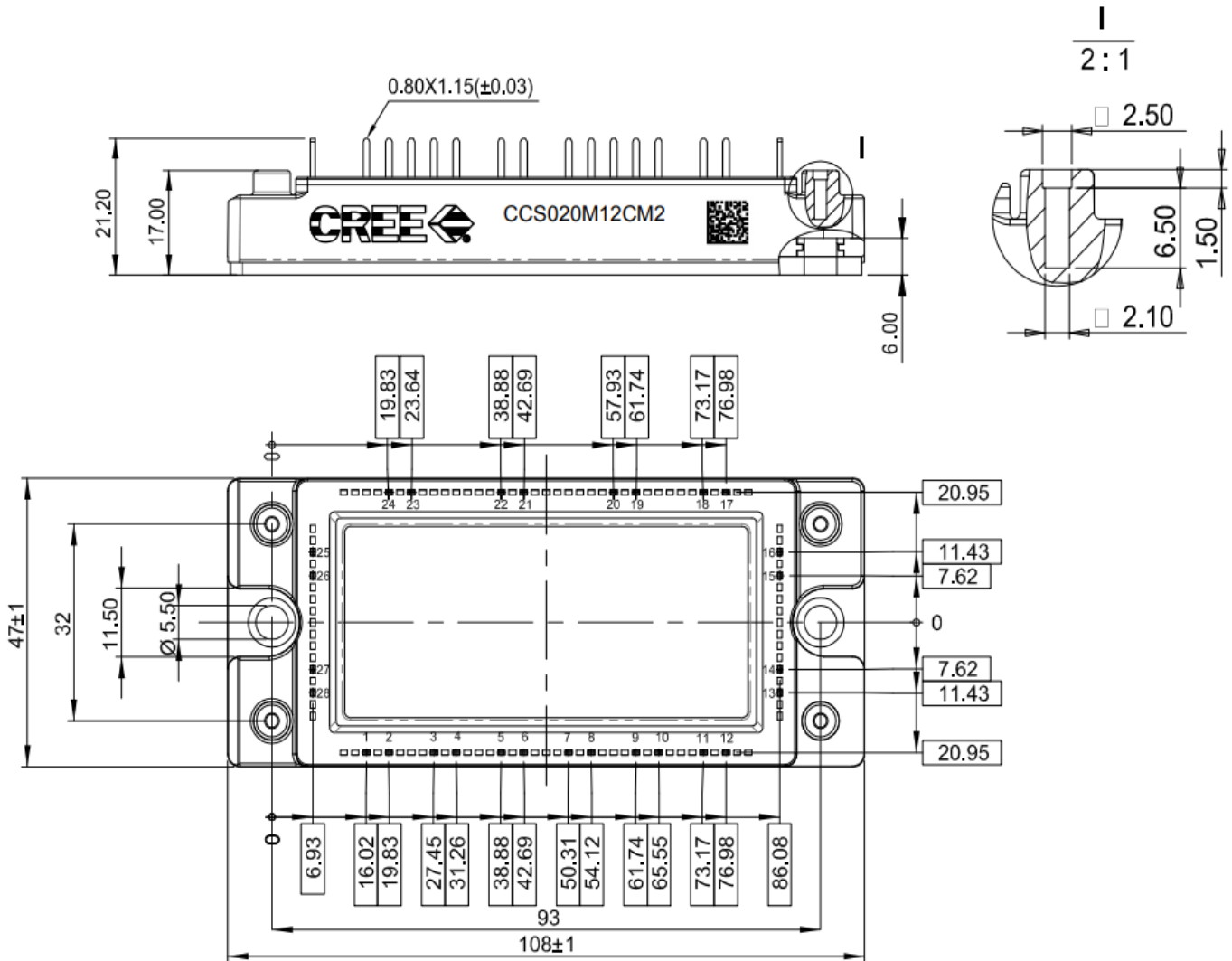


Figure 2: Physical dimensions of the current 45 mm SiC Module

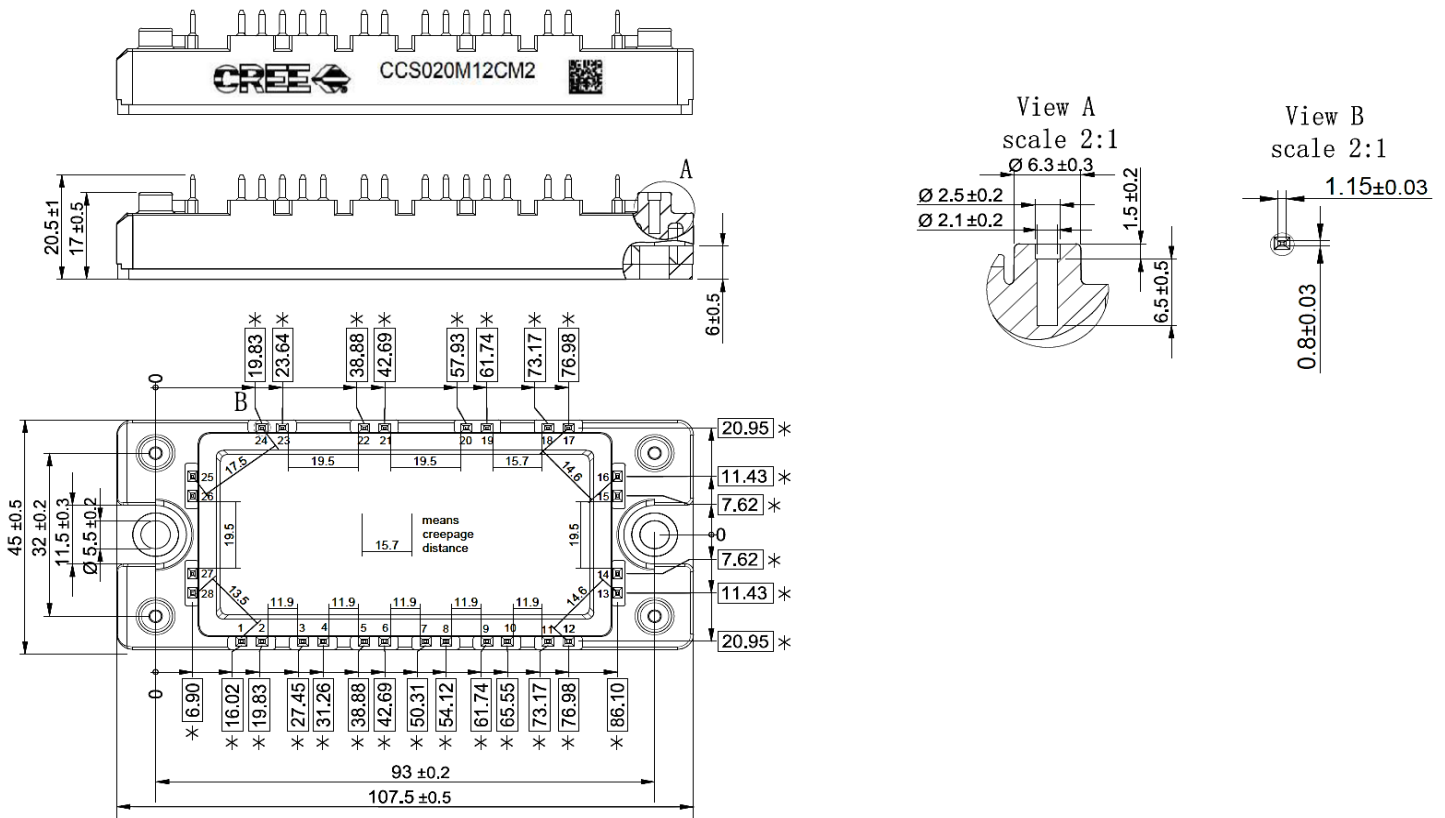


Figure 3: Physical dimensions of the new 45 mm SiC module

Reason for Change

The main purpose of adding a new housing package is to have terminal pins injection molded into the small tabs of plastic housing to increase the creepage distance. Adding to that, the new housing package would be a one fully assembled part which will further improve the productivity and the manufacturability of the new 45 mm SiC Module. Figure 4 indicates the comparison of current and new 45mm SiC module packages in terms of the terminal pins height and the addition of small tabs.

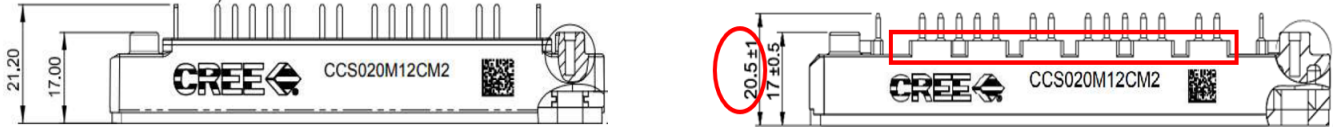


Figure 4: Comparison of the current (Left) and the new (Right) 45 mm SiC module packages

Effective Implementation Date:

In August, 2018, Cree will begin the transition of the new housing package for the 45 mm SiC modules.

Please respond to this PCN by indicating your approval on the included approval form at the end of this PCN, sign it and return to your local sales representative. If you have any concerns or questions, please notify your local sales representative. In accordance with JEDEC Standard JESD46D, lack of acknowledgment of the PCN within 30 days constitutes acceptance of the change.

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

PCN Originator:

Name: Ayerbe, E.

Title: Product Marketing Manager, Cree Power Devices

Issued: August, 2018

PCN-PW067

Disclaimer:

If we do not receive any response by the date in the PCN above we consider this as the acceptance of the PCN.

PCN-PW067 CUSTOMER APPROVAL FORM Modification of 45 mm SiC Module by the addition of a New Housing Package

Please check the appropriate boxes below:

We agree with this proposed change and its schedule

We need samples:

Sender:

Company:

Address/Location:

Name:

Email:

Primary Telephone:

Signature:

Fax:

Date:

Please return to your Sales Representative

Company: Cree

Address/Location:

Name:

Email:

Primary Telephone:

Fax:

Disclaimer:

If we do not receive any response within 30 days of receiving this PCN, we consider this as the acceptance of the PCN.