

Cree, Inc. Product Change Notification

PCN-PW066: Modification of TO-247-4 MOSFET Package by the addition of Seating Plane Tab on the Gate Lead

Change

Cree is modifying the TO-247-4 MOSFET Package by adding a seating plane tab on the gate lead. This change will have a minor impact on the physical dimensions of TO-247-4 MOSFET Package.

Change Description

Cree SiC MOSFETs in TO-247-4 Package are currently manufactured without seating plane tab on the gate lead (as shown in Figure 2). The modification of adding seating plane tab on the gate lead of TO-247-4 MOSFET Package will help users during the PCB's wave soldering process and the TO-247-4 MOSFET Package will remain mechanically stable.

Part Description

Part numbers of discrete MOSFETs in a TO-247-4 Package that will be affected by this update are listed in the Table 1. These packaged devices are based on Cree's 3rd Generation (C3M™) SiC MOSFET Technology.

R _{DS(on)} (mΩ)	Product	Package	Voltage Rating	Junction temperature rating (°C)
30	C3M0030090K	TO-247-4	900	150
65	C3M0065100K	TO-247-4	1000	150
120	C3M0120100K	TO-247-4	1000	150
75	C3M0075120K	TO-247-4	1200	150

Table 1: Part Numbers of affected discrete MOSFETs in a TO-247-4 Package

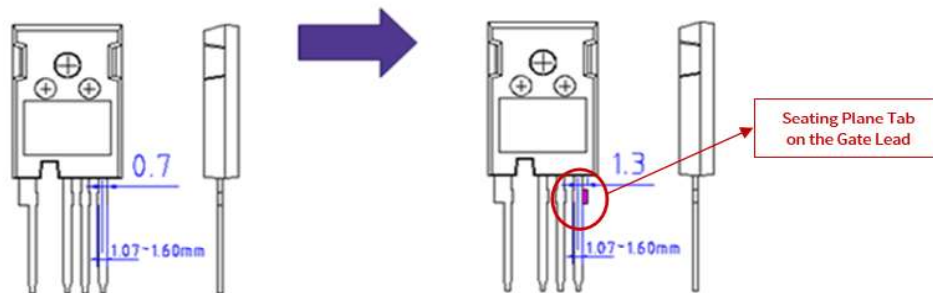
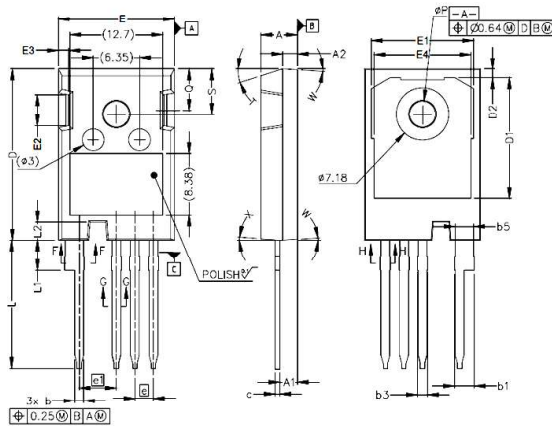


Figure 1: Addition of Seating Plane Tab on the Gate Lead of TO-247-4 MOSFET Package

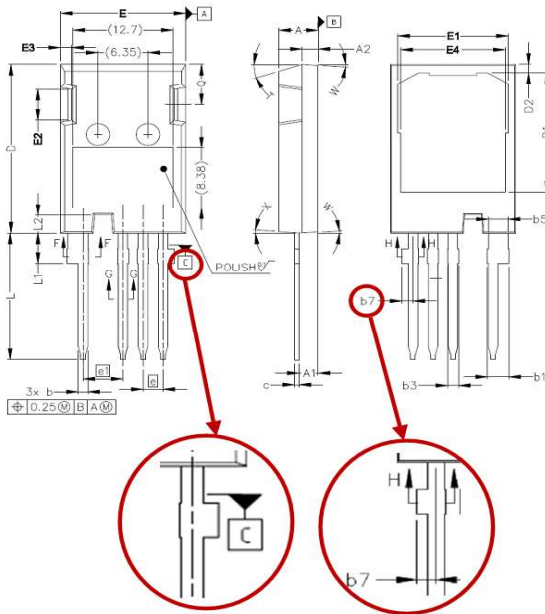
Impact of Change

There will be a minor change in the form and fit of TO-247-4 MOSFET Package. This change will have impact on all of the Cree's 3rd generation (C3M™) SiC MOSFETs in TO-247-4 package (as shown in Table 1). There will be no change in the part number, function or reliability of the affected MOSFETs. Figure 3 shows the updated physical dimensions of TO-247-4 MOSFET Package.



SYM	MILLIMETERS		SYM	MILLIMETERS	
	MIN	MAX		MIN	MAX
A	4.83	5.21	E1	13.10	14.15
A1	2.29	2.54	E2	3.68	5.10
A2	1.91	2.16	E3	1.00	1.90
b'	1.07	1.28	E4	12.38	13.43
b	1.07	1.33	e	2.54 BSC	
b1	2.39	2.94	e1	5.08 BSC	
b2	2.39	2.84	N	4	
b3	1.07	1.60	L	17.31	17.82
b4	1.07	1.50	L1	3.97	4.37
b5	2.39	2.69	L2	2.35	2.65
b6	2.39	2.64	øP	3.51	3.65
c'	0.55	0.65	Q	5.49	6.00
c	0.55	0.68	S	6.04	6.30
D	23.30	23.60	T	17.5° REF.	
D1	16.25	17.65	W	3.5° REF.	
D2	0.95	1.25	X	4° REF.	
E	15.75	16.13			

Figure 2: Physical Dimensions of current TO-247-4 MOSFET Package



SYM	MILLIMETERS	
	MIN	MAX
A	4.83	5.21
A1	2.29	2.54
A2	1.91	2.16
b'	1.07	1.28
b	1.07	1.33
b1	2.39	2.94
b2	2.39	2.84
b3	1.07	1.60
b4	1.07	1.50
b5	2.39	2.69
b6	2.39	2.64
b7	1.30	1.70
c'	0.55	0.65
c	0.55	0.68
D	23.30	23.60
D1	16.25	17.65
D2	0.95	1.25
E	15.75	16.13
E1	13.10	14.15
E2	3.68	5.10
E3	1.00	1.90
E4	12.38	13.43
e	2.54 BSC	
e1	5.08 BSC	
N	4	
L	17.31	17.82
L1	3.97	4.37
L2	2.35	2.65
Q	5.49	6.00
T	17.5° REF.	
W	3.5° REF.	
X	4° REF.	

Figure 3: Physical Dimensions of updated TO-247-4 MOSFET Package

Reason for Change

The reason for this change is to avoid mechanical instability of TO-247-4 MOSFET Package during PCB wave soldering process as shown in Figure 4. By adding the seating plane tab on the gate lead, TO-247-4 MOSFET Package will have more mechanical stability during PCB wave soldering process which further help users to get better manufacturability of their product.

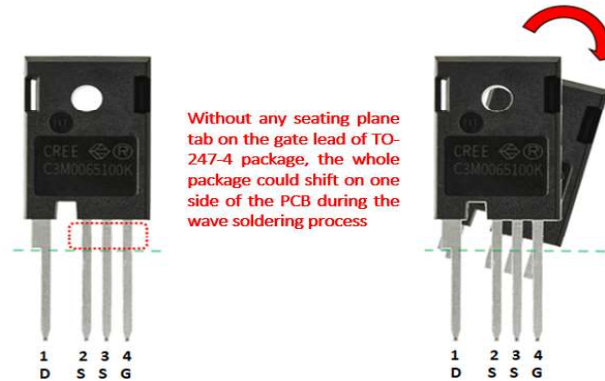


Figure 4: Illustration of problem with current TO-247-4 MOSFET Package with no seating plane tab on the gate lead

Effective Implementation Date:

Beginning of June 1st, 2018, Cree will begin the transition of TO-247-4 MOSFET Package

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 by April 25th, 2018. 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: March, 2018

PCN-PW066

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-PW066 CUSTOMER APPROVAL FORM

Modification of TO-247-4 MOSFET Package by the addition of Seating Plane Tab on the Gate Lead

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 by the date in the PCN above we consider this as the acceptance of the PCN.