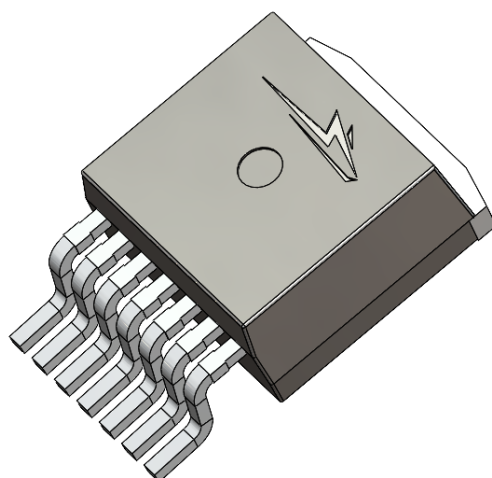


Application Note- PRD-08453

Wolfspeed® TO-263-7XL (J2) Package



Overview

Wolfspeed has recently released a new version of the TO-263-7XL (J2) discrete package for MOSFETs and Schottky Diodes that provides improved assembly and performance to customers who are currently using standard TO-263-7L products in their applications. The addition of this package to the Wolfspeed® 1200V portfolio continues to increase the competitiveness of the product family by providing the most technically advanced package offerings on the market.

The new TO-263-7XL J2 discrete package uses the latest packaging technology to provide enhanced thermal performance by around 10% compared to the TO-263-7 XL (J1) package. This will allow the customer to drive the device harder and design a more efficient overall system, providing cost, space, and performance benefits. The internal design of the package offers a high level of package reliability, ensuring long lasting high performance in the field.

The most critical improvement in the TO-263-7XL J2 package is the added benefit of an industry standard footprint that allows for multiple TO-263-7L package types to be used and/or tested. This provides the customer the opportunity to upgrade their current design from a TO-263-7L (J) or TO-263-7XL (J1) to the TO-263-7XL (J2) with ease and gives the customer the improved performance, without any additional design work needed. The industry standard footprint also enables numerous multi-sourcing opportunities for the customer where necessary, which ensures a full inventory of parts when it comes time for manufacturing.

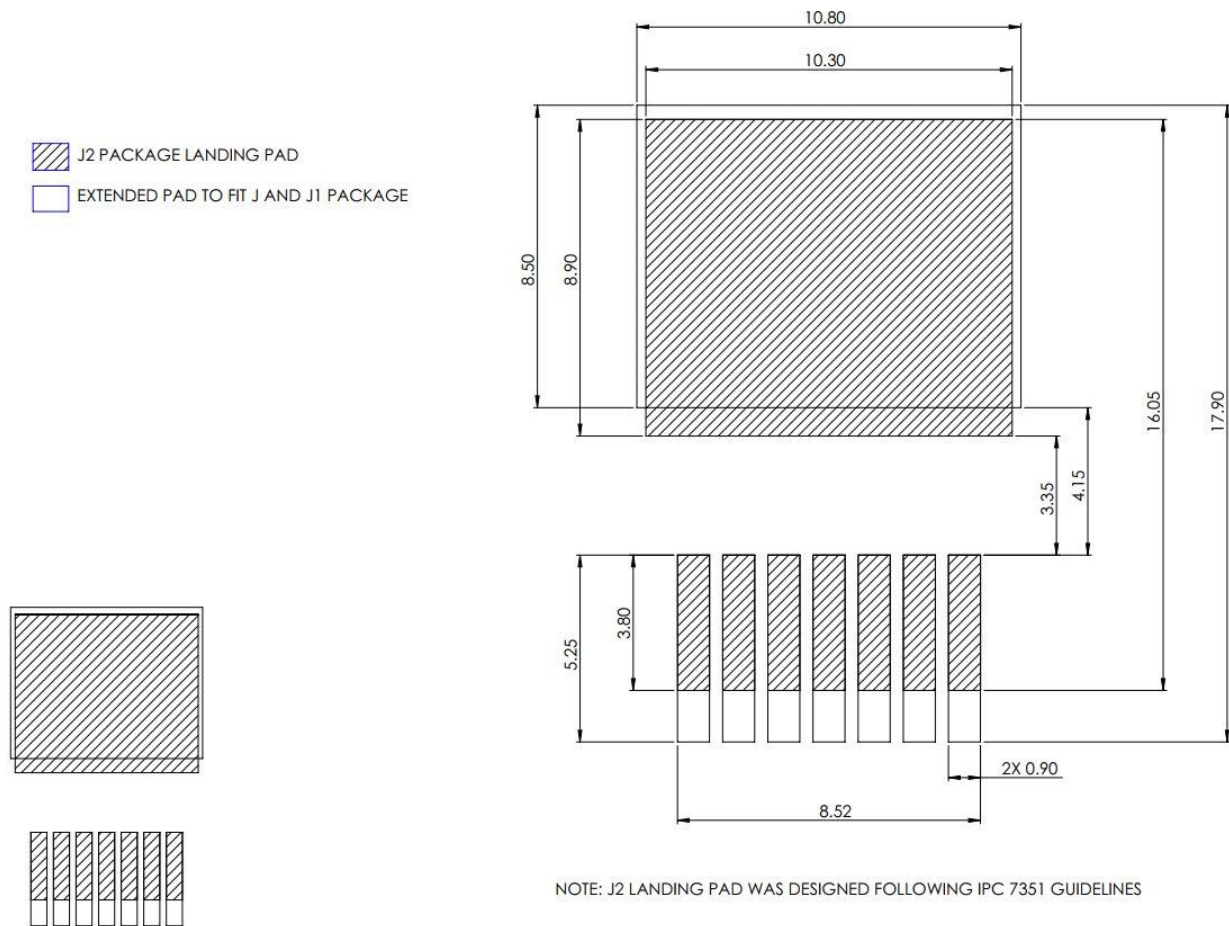


Figure 1: Recommended TO-263-7XL (J2) Landing Pads

Figure 1 above shows the two recommended options for landing pads of the TO-263-7 XL J2 package. If this package type is in the initial design, the “J2 package Landing Pad” can be used since it is already optimized for multi-sourcing opportunities but there will be no need to back track and fit a TO-263-7 (J) or TO-263-7XL (J1) package since the J2 package provides improved performance. If customers want the ability to switch between the different versions of the TO-263-7 package, they can use the extended pad option also shown above, which allows for the different types to be swapped in and out without any board design changes. A comparison of package sizes, lead lengths, and creepage distances can be found in the images below:

J2 Lead Length	4.94 mm
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J2 Creepage Dist.	4.7mm
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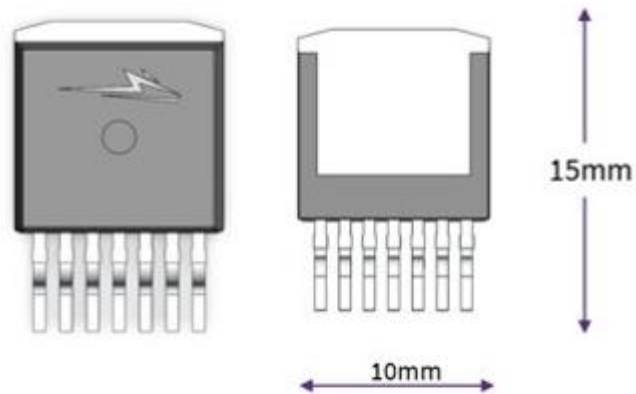


Figure 2: TO-263-7XL (J2) Package Dimensions

J1 Lead Length	6.11 mm
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J1 Creepage Dist.	4.65mm
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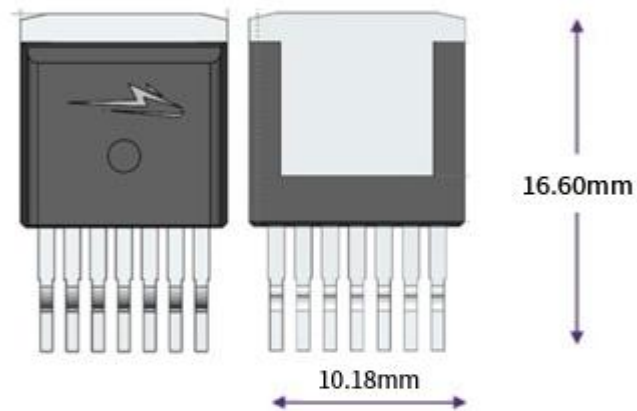


Figure 3: TO-263-7XL (J1) Package Dimensions

J Lead Length	6.16 mm
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J Creepage Dist.	6.65mm
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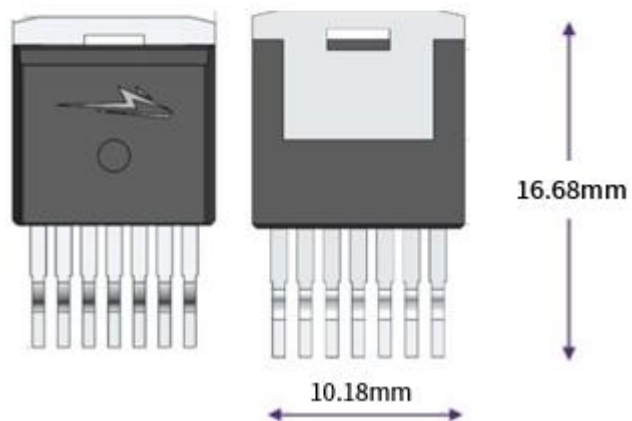


Figure 4: TO-263-7 (J) Package Dimensions

The release of the TO-263-7XL (J2) package continues to help Wolfspeed provide the most advanced discrete packaging solutions on the market that increases the ease of use and enables better performance in numerous aspects at multiple levels of the system.

1. Revision history

Date	Version	Description
February 2024	1	Initial App Note Release