



For your next design, you chose to [pack more power in less space](#) by implementing a power module leveraging TI's new proprietary integrated-magnetic packaging (MagPack™). The need can arise to manually rework a MagPack power module while testing and debugging your application, or to send a unit back to TI for further analysis. This application brief provides compact guidance for a proper and well-defined rework process of the MagPack power module and minimizing the probability of causing unwanted damage to the reworked units.

Before starting any rework procedure for a MagPack power module, it is critical to bake out the device or PCB according to specification outlined in J-STD-033. This removes any absorbed moisture and mitigate the risk of moisture-induced PCB and device delamination during rework.

The rework process must be conducted such that the temperature of the MagPack power module and the surrounding PCB area are controlled. Care must be taken that parts do not exceed the peak temperature as listed on the MSL label. For best results, we recommend the use of an infrared reflow oven. The rework processes outlined below are examples. It can be necessary to optimize the specific heating profiles for different board thicknesses and equipment used.

Component removal process example:

- Configure heater to 60% Top / 40% Bottom settings
- Preheat PCB to 60°C
- Ramp 1°C/s to 175°C
- Ramp 0.53°C/s to 215°C
- Ramp 0.31°C/s to 240°C
- Enable vacuum, lower nozzle
- Reflow stage at 240°C, 90sec
- Remove MagPack power module from PCB
- Cool down stage to 120°C in 60s
- Turn off vacuum and remove device from nozzle
- Avoid handling damage of the removed unit
- Do not reuse or repair the removed unit

Component replacement process example:

- Apply solder paste to board using a micro-stencil
- Align MagPack power module over board land pads
- Place device on board. Care must be taken to prevent overtravel during placement which can damage the package or vacuum tip
- Configure heater to 60% Top / 40% Bottom settings
- Pre-heat PCB to 60°C
- Ramp 1°C/s to 175°C
- Ramp 0.53°C/s to 215°C
- Ramp 0.31°C/s to 240°C
- Reflow stage at 240°C, 90sec
- Cool down stage to 120°C in 60s

Obviously, during the whole procedure, elementary precautions like working in an ESD-safe environment must be taken. Furthermore, if the reworked unit is shipped back to TI for further analysis, make sure to follow the [TI guidelines](#) for ESD-compliant packing and shipping.

Trademarks

MagPack™ is a trademark of Texas Instruments.

All trademarks are the property of their respective owners.

IMPORTANT NOTICE AND DISCLAIMER

TI PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES "AS IS" AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with TI products. You are solely responsible for (1) selecting the appropriate TI products for your application, (2) designing, validating and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, regulatory or other requirements.

These resources are subject to change without notice. TI grants you permission to use these resources only for development of an application that uses the TI products described in the resource. Other reproduction and display of these resources is prohibited. No license is granted to any other TI intellectual property right or to any third party intellectual property right. TI disclaims responsibility for, and you fully indemnify TI and its representatives against any claims, damages, costs, losses, and liabilities arising out of your use of these resources.

TI's products are provided subject to [TI's Terms of Sale](#), [TI's General Quality Guidelines](#), or other applicable terms available either on [ti.com](#) or provided in conjunction with such TI products. TI's provision of these resources does not expand or otherwise alter TI's applicable warranties or warranty disclaimers for TI products. Unless TI explicitly designates a product as custom or customer-specified, TI products are standard, catalog, general purpose devices.

TI objects to and rejects any additional or different terms you may propose.

Copyright © 2026, Texas Instruments Incorporated

Last updated 10/2025