

Stackable POL Power Module Enhances Power Density For Data Centers

[Microchip Technology's](#) MCPF1525 power module is a highly integrated device with a 16-V Vin buck converter that can deliver 25 A per module, stackable up to 200 A. The MCPF1525 enables higher power delivery within the same rack space and features programmable PMBus and I²C controls. This device is designed to power the latest generation of PCIe switches and high-performance compute MPU applications needed for AI deployments.

The power module is packaged in an innovative vertical construction that maximizes board space efficiency and can offer up to a 40% board area reduction when compared to other solutions. The module measures approximately 6.8 mm x 7.65 mm x 3.82 mm, making it well suited for space-constrained AI servers (see the figure).

For increased reliability, the MCPF1525 includes multiple diagnostic functions reported over PMBus, including overtemperature, overcurrent and overvoltage protection to minimize undetected faults. With a thermally enhanced package, the device is engineered to work within an operating junction temperature range of -40°C to +125°C. An on-board embedded EEPROM allows users to program the default power-up configuration.

"By leveraging Microchip's comprehensive solutions including PCIe Switchtec technology, FPGAs, MPUs and Flashtec NVMe controllers, the MCPF1525 power module can help customers achieve the system efficiency, reliability and scalability required for high-performance data center and industrial computing applications," said Rudy Jaramillo, vice president of Microchip's analog power and interface division. "Seamless integration across Microchip's portfolio simplifies development and lowers risk, helping designers accelerate time-to-market."

The MCPF1525 features a customized integrated inductor for low conducted and radiated noise, enhancing signal integrity, data accuracy and reliability of high-speed computing. This helps reduce repeated data transmissions that waste valuable system power and time.

The MCPF1525 power module is available for \$12.00 each in 1,000-unit quantities. For more information, see the [product page](#). To learn more about the company's other power modules, see the [integrated power modules page](#). You can [purchase](#) directly from Microchip or contact a Microchip [sales representative or authorized worldwide distributor](#).

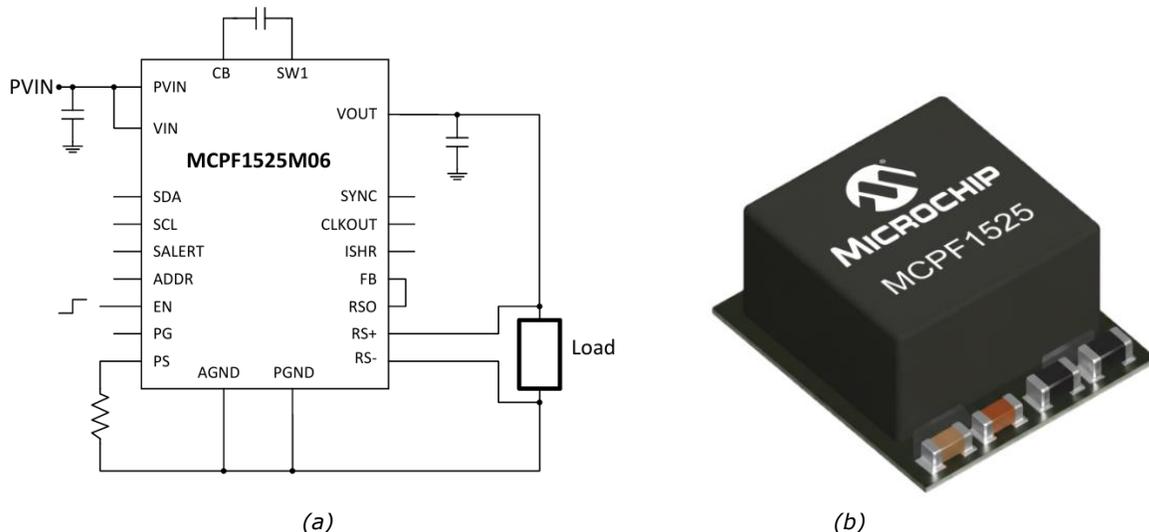


Figure. Measuring approximately 6.8 mm x 7.65 mm x 3.82 mm, the MCPF1525M06 is a 16-V, 25-A stackable switching buck regulator module. The low-profile package of this fully integrated POL regulator is optimized for automated assembly. It supports programmable operation via I²C and PMBus protocols. An application circuit (a) and the module (b) are shown here.