## Bidirectional Bus Converters Deliver 750 W For Data Center, Automotive Apps

Vicor's 2317 NBM is a bidirectional nonisolated fixed-ratio converter for hybrid 48-V/12-V power systems in data center and automotive applications. The 2317 NBM is capable of providing up to 750 W continuously at 48 V from 12 V, or at 12 V from 48 V, with over 98% peak efficiency. With up to 1 kW of peak power capability (for up to 2 ms) in a 23-mm x 17-mm x 7-mm surface-mount package, the NBM (NBM2317S54D1464T0R) provides a complete solution with no external circuitry needed (see the figure).

By switching at 2 MHz, the NBM provides low output impedance and fast transient response to dynamic loads. The NBM incorporates hot-swap and inrush current limiting, increasing power system density and saving board space, time and money.

In data centers that are still relying on legacy 12-V distribution, the NBM supports state-of-the-art 48-V input GPUs using Power-on-Package ("PoP") Modular Current Multipliers ("MCMs") driven from a 48-V node sourcing a small fraction (1/48) of the GPU current. Current multiplication overcomes the power delivery boundaries imposed by traditional 12-V systems that limit higher bandwidth and connectivity. In data centers that have been upgraded to a 48-V infrastructure, the NBM can be used to support legacy 12-V loads.

In mild hybrid and autonomous vehicles using 48-V, the NBM supports legacy 12-V subsystems from efficient power distribution at 48 V with or without dual batteries. For more information, see the 2317 NBM and Power-on-Package current multiplier product pages.



*Figure. The 2317 NBM is a bidirectional converter capable of providing up to 750 W continuously at 48 V from 12 V, or at 12 V from 48 V, with over 98% peak efficiency in a 23-mm x 17-mm x 7-mm surface-mount package.*