

For use as a stand-alone high power buck-boost regulator or with a VTM™ for isolated factorized-power designs

## Description

PRM Modules enable power architects to maximize the density and performance of their high-power designs. The integration of a high-performance Zero-Voltage Switching (ZVS) topology with custom magnetics results in a fully integrated buck-boost regulator with over 97% efficiency. With wide input voltage ranges optimized for 24 and 48V inputs, these regulators provide a regulated 48V output which can be trimmed across a wide output range. Full-sized packages (32.5 x 22 x 6.73mm) can convert up to 600W of power, also available in half-sized packages (22 x 16.5 x 6.73mm) up to 250W. Higher-power conversion can be achieved by arraying modules together.

Use of a ZVS topology enables high-frequency operation that maximizes efficiency by minimizing the significant switching losses associated with conventional buck regulators using hard-switching topologies. High switching frequency also reduces the size of the external filter components, providing power density while enabling fast dynamic response to line and load transients.

MILCOTS version are also available. See our website for more information: [www.vicorpower.com](http://www.vicorpower.com)

## Features & Benefits

- Simple to use
  - Point-of-load, ZVS Buck-Boost regulation
  - Factorized Power Architecture
  - Minimal external components
- High density
  - Up to 2,040W/in<sup>3</sup>, with 600W/in 1.1in<sup>2</sup> package
  - Wide V<sub>IN</sub> optimized for 48V<sub>OUT</sub>
    - 45V<sub>IN</sub>, 38 – 55V<sub>IN</sub> range
    - 48V<sub>IN</sub>, 36 – 75V<sub>IN</sub> range
- High efficiency
  - Full Chip: Up to 600W at 97.6%
  - Half Chip: Up to 250W at 96.7%
- Flexible
  - Regulation: Remote sense, local loop, adaptive loop
  - Parallel capable



## Family of PRM Products

Model Number <sup>[1]</sup>	Input Voltage		Output Voltage Range (V)	Output Power Max (W)	Output Current Max (A)	Package
	Nom (V)	Range (V)				
PRM48AH480T200A00	48	36 – 75	20 – 55	200	4.17	22 x 16.5 x 6.73mm - Half
PRM48AF480T400A00	48	36 – 75	20 – 55	400	8.33	32.5 x 22 x 6.73mm - Full
PRM48BH480T200B00	48	38 – 55	5 – 55	200	4.17	22 x 16.5 x 6.73mm - Half
PRM48DH480T250B03	48	38 – 60	5 – 55	200	4.17	22 x 16.5 x 6.73mm - Half
PRM48BH480T250A00	48	38 – 55	20 – 55	250	5.21	22 x 16.5 x 6.73mm - Half
PRM48JH480T250A00	48	45 – 55	20 – 55	250	5.21	22 x 16.5 x 6.73mm - Half
PRM48JH480T250A02	48	45 – 55	20 – 55	250	5.21	22 x 16.5 x 6.73mm - Half
PRM48BF480T400B00	48	38 – 55	5 – 55	400	8.33	32.5 x 22 x 6.73mm - Full
PRM48BF480T500A00	48	38 – 55	20 – 55	500	10.42	32.5 x 22 x 6.73mm - Full
PRM48JF480T500A00	48	45 – 55	20 – 55	500	10.42	32.5 x 22 x 6.73mm - Full
PRM48BF480T600A00	48	38 – 55	5 – 55	600	12.5	32.5 x 22 x 6.73mm - Full

<sup>[1]</sup> Full-chip models also available in through hole. All models available in M-grade.

# Application Examples

