

High Power NBM™

Non-Isolated Fixed-Ratio Bus Converter Module



For use in power systems where reversibility and high power density are needed to solve power distribution and management challenges.

Description

Non-Isolated Bus Converter Modules (NBMs) are 36-46V or 36-60V_{IN} power components that provide voltage transformation and current multiplication for designs that require high efficiency, high power density, small size, low weight. Due to their inherent bidirectional capability, NBMs are able to step down or step up the input voltage by the turns-ratio of the internal auto-transformer (e.g. 1:3 or 1:5). Buck or Buck-Boost regulators can then be connected to the NBM output to provide the necessary regulated voltage for specific system loads.

Utilizing Vicors resonant Sine Amplitude Converter (SAC) topology, NBMs leverage high frequency Zero-Voltage Switching (ZVS) and Zero-Current Switching (ZCS) to deliver unmatched efficiency and power density with low noise and fast transient response. In addition, the NBM's low AC impedance, beyond the bandwidth of most downstream regulators, enables bulk capacitance, normally located at the input of a regulator, to be placed at the high voltage input to the NBM. This reduces bulk capacitance requirement and offers saving of board area and system cost.

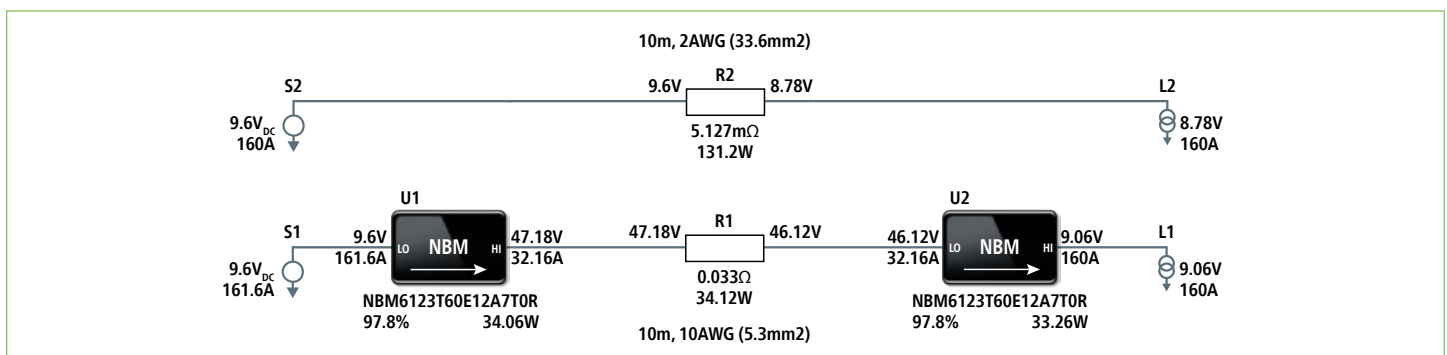
Offered in a range of packages, power levels and size options, NBMs provide unmatched performance to meet the demanding requirements of modern power system designs.

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Part Numbers

Model Number	Input (V)	Output (V)	Output Power (W)	Output Current (A)	Package	Control Interface
NBM6123T60E12A7T0R	48V (36 – 60V)	9.6V (7.2 – 12V)	2000	170	6123 ChiP	Analog
NBM3814x60E12A7yzz	48V (36 – 60V)	9.6V (7.2 – 12V)	2000	170	3814 Chassis VIA	Always on
NBM6123T46C15A6T0R	42V (36 – 46V)	13.8V (12 – 15.3V)	2400	160	6123 ChiP	Analog
NBM3814x46C15A6yzz	42V (36 – 46V)	13.8V (12 – 15.3V)	2400	160	3814 Chassis VIA	Always on

Typical Applications



Showing the benefits of bidirectional capability — Two NBMs are used (one forward, one in reverse), to reduce power loss in high power DC transmission.

Features & Benefits

- 36 – 46V or 36 – 60V input
- High peak efficiency: Up to 98.2%
- High power density: Up to 3600W/in³
- Bidirectional startup and steady state operation
- Parallel inputs and outputs for high powered arrays
- ChiP Package
 - Through-hole ChiP form-factor
- VIA Package
 - Available in chassis or PCB mount form-factor
 - Simplifies thermal design
 - Provides integrated filtering

6123 ChiP
2.402 x 0.990 x 0.284in
(61.00 x 25.14 x 7.21mm)



3814 VIA
3.76 x 1.40 x 0.37in
(95.59 x 35.54 x 9.40mm)