



The Power Behind Performance

POWER • TEAMWORK • CUSTOM • SUPPORT •
TIME • FLEXIBILITY • VISION • PERFORMANCE
INATION • EXPERTISE • EFFICIENCY • CONFIGUR
MPONENTS • RELIABILITY • LONGEVITY • VOLU
ROVEN • DENSITY • QUALIFIED • COMPETITIVE
SOLUTIONS • INTEGRATION • OPPORTUNITY

Factorized Bus Architecture (FPA)

Definition of Factorized Power Architecture



A power distribution approach to address demanding Point-Of-Load current and voltage requirements and further minimize distribution losses:

- Separates Regulation and Isolation Functions
- Flexibility to locate PRM remotely saves board space
- Factorized bus at ~48 V saves I^2R losses
- VTM located directly at POL saves space
 - Puts a fast “current multiplier” at the Point Of Load
 - Transforms **V** and **I** down to fractional POL voltages
 - 100% effective duty cycle

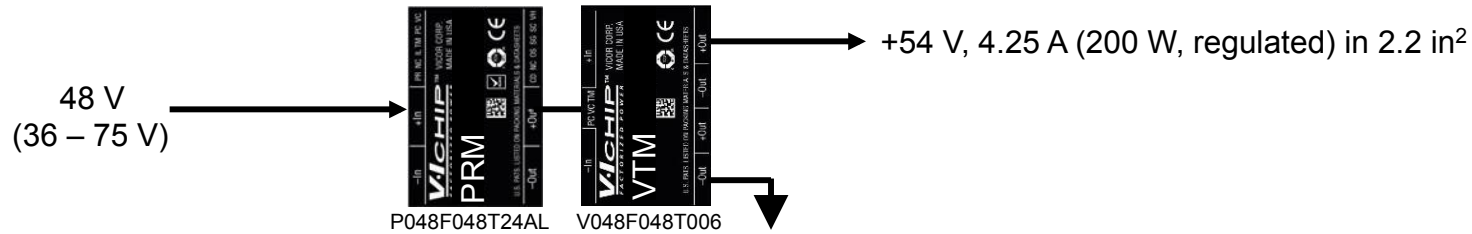
Benefits of Factorized Power Architecture

- Pre-regulators (PRM) drive Point Of Load current multipliers (VTM):
 - Efficient power distribution (48 V)
 - Best in class performance for load requirements < 1V
- Current multiplication at the Point Of Load plus:
 - Fast transient response
 - No bulk capacitors
 - High density
 - High efficiency

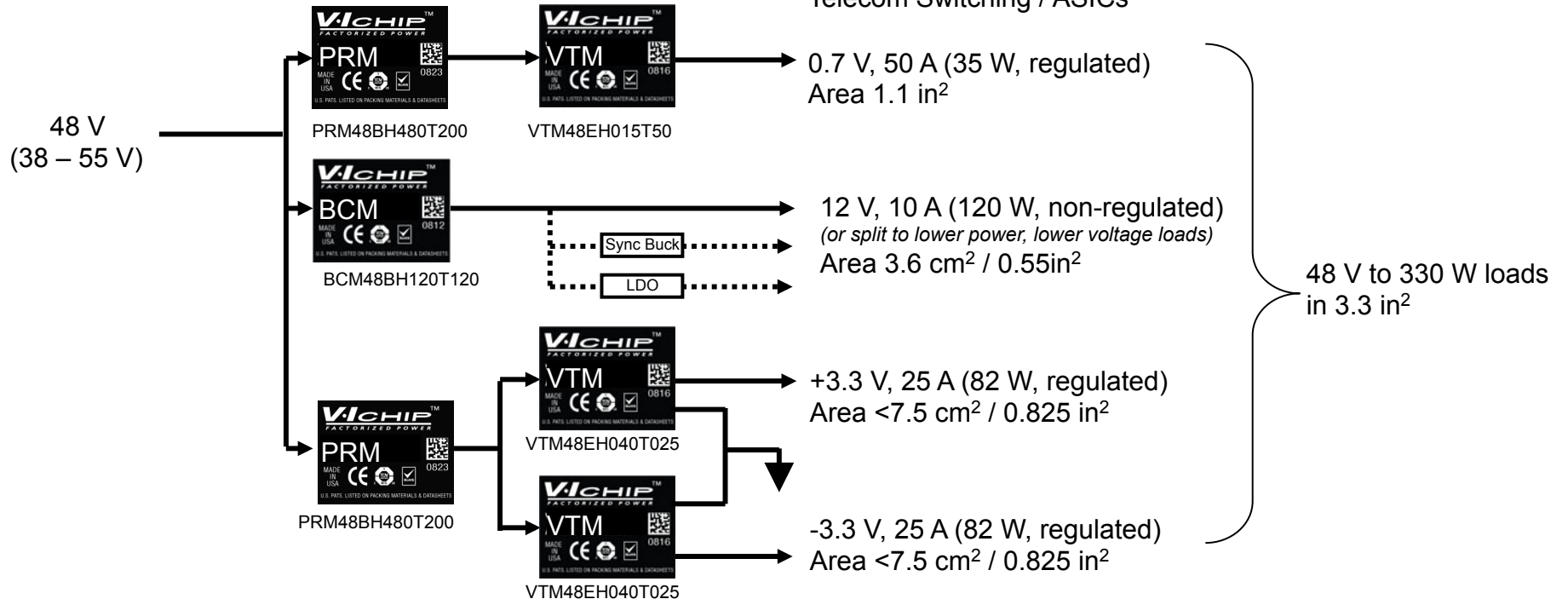


Example Applications

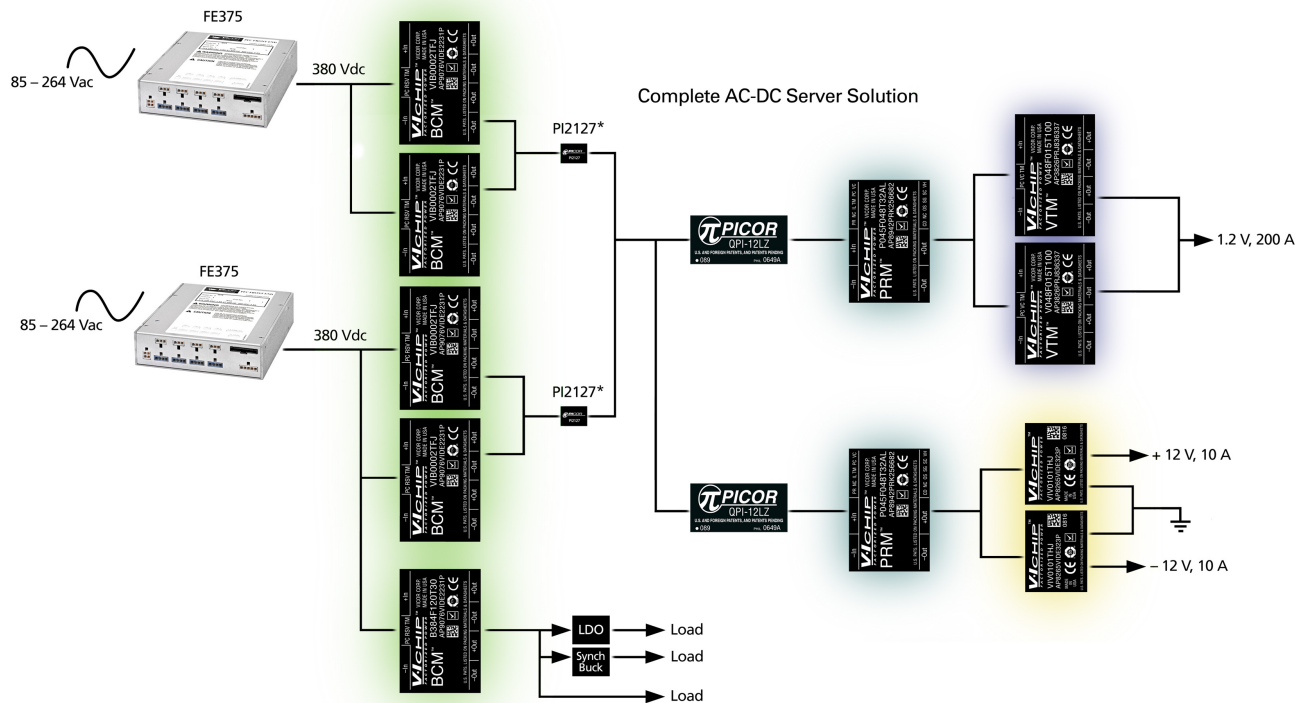
Power Over Ethernet (PoE)



Telecom Switching / ASICs



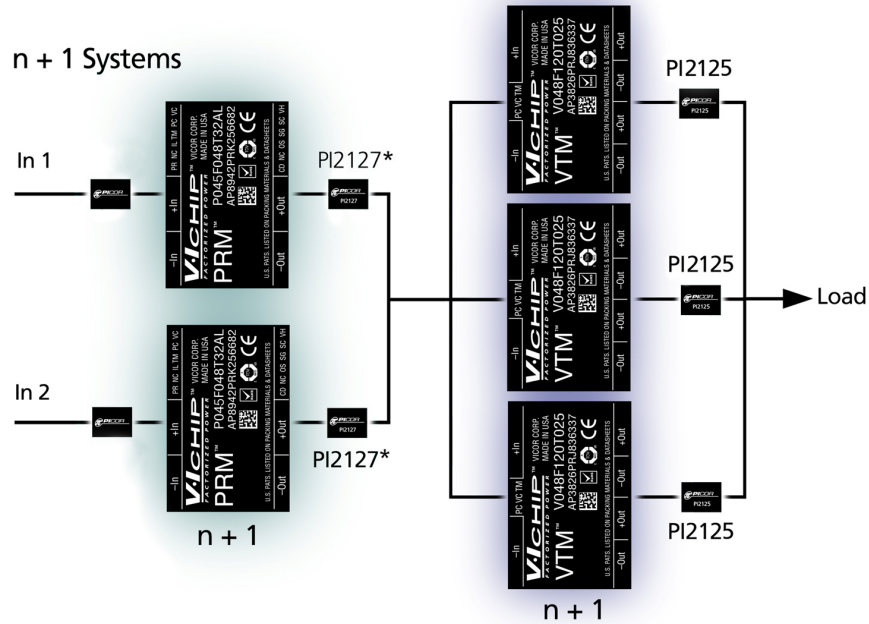
AC-DC Server Solution



- High current drive
- Various output voltage levels available
- Ultra fast transient response
- Includes EMI filtering and ORing functions

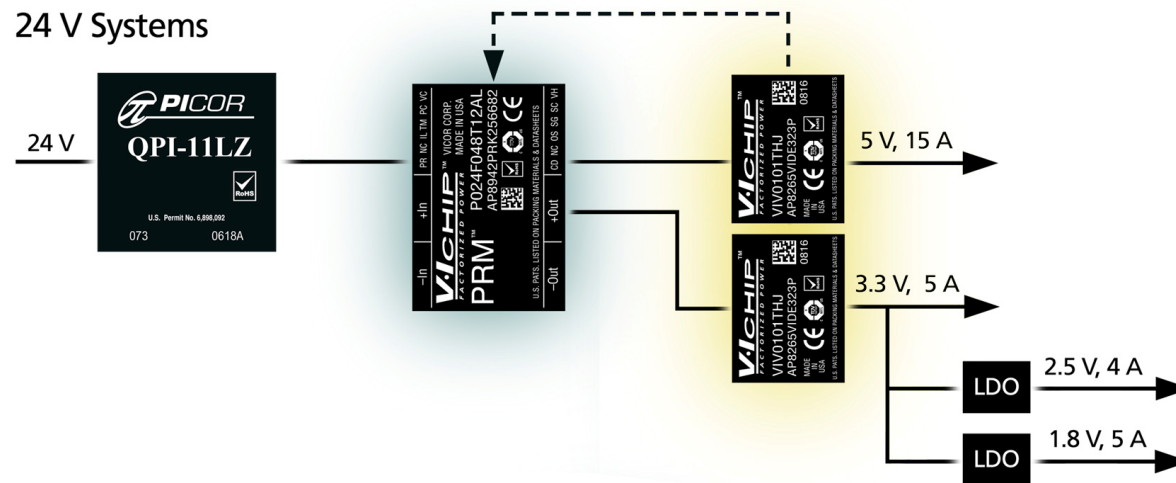
- Complete AC-DC server solution
- Powerchain includes Picor products with full suite of V•I Chips
- Low distribution losses
- Flexible layout options

N + 1 Systems



- Redundant / fault tolerant system design capability
- Backup PRM with ORing
- Backup VTM with ORing
- No single point of failure will compromise system operation

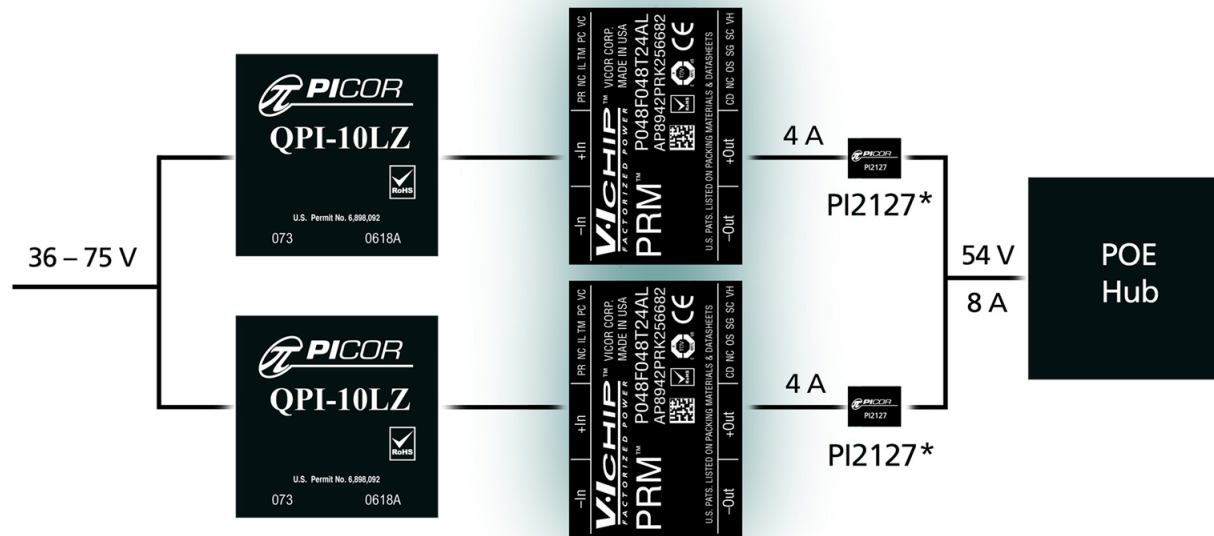
24 Vin Systems



- 24 V Input voltage
- EMI Filter (QPI-11LZ)
- Standard PRM-to-VTM adaptive loop feedback
- Multiple output voltages
- Flexible layout

Power Over Ethernet (POE) Systems

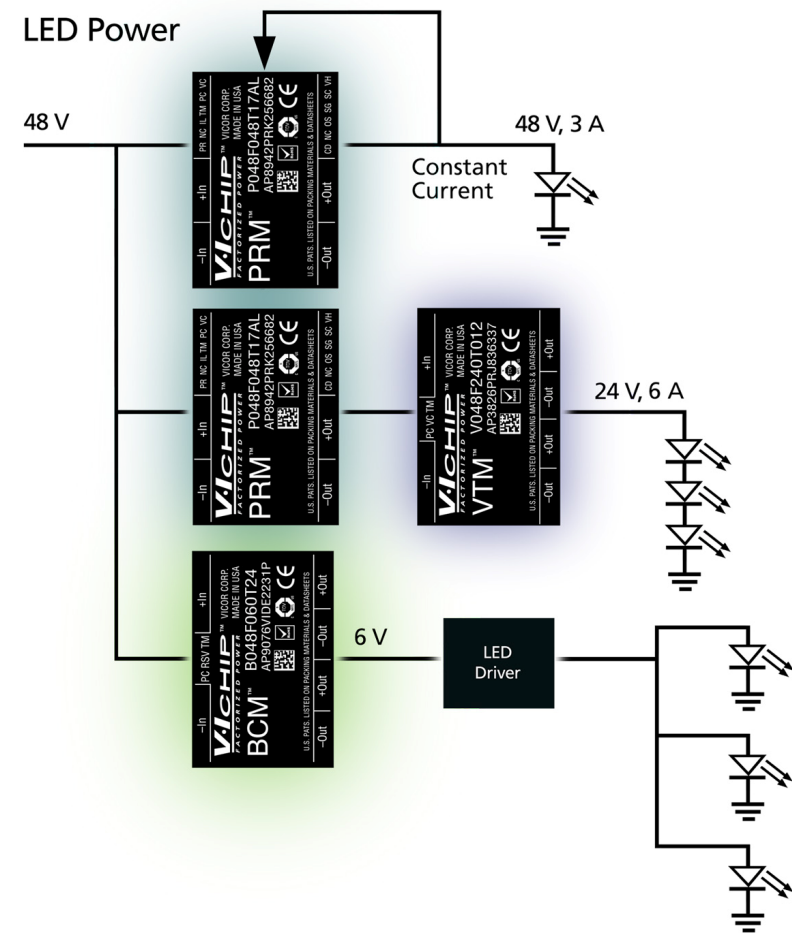
Power Over Ethernet (POE) Systems



- Wide range input
- EMI Filter
- Paralleled PRMs with ORing
- Redundant / backup PRM
- Trimmed PRM voltage (54 V) into POE Hub

LED Power

- Multiple options to drive LEDs
- PRM in constant current mode
- PRM-to-VTM driving a series array
- BCM-to-LED driver in a parallel array
- High efficiency
- Wide adjustment / intensity range



Intel VR12 Processors

- Intel VR12-compliant solution using V•I Chip technology
- Highest efficiency (48 V to 1 V, **90%**)
- Highest power density ($>12 \text{ A/cm}^2$, 48 V to 1 V)
- Lowest profile solution (0.67 cm)
- No bulk capacitance

...from 48 V direct to load

