

PI37xx Series

Cool-Power® ZVS Buck-Boost Switching Regulators

High Performance Buck-Boost Regulators

For Communications and Industrial, 12, 24 and 48 V_{IN} Bus, 24 V_{IN} Line Stabilization and Automotive Accessories

Description

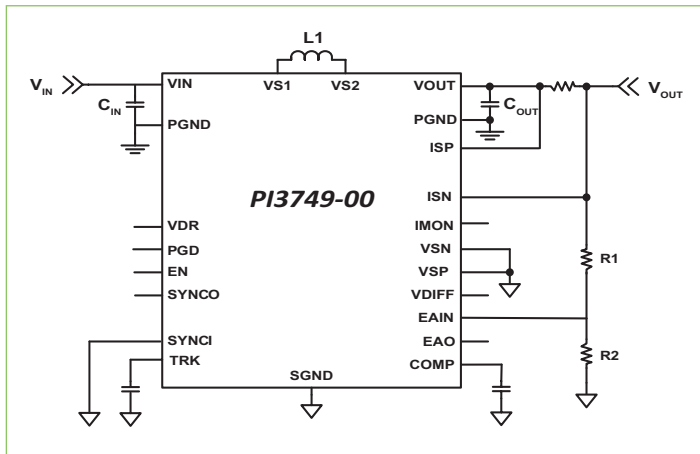
The PI37xx is a series of high-efficiency, wide-input range DC-DC ZVS Buck-Boost regulators integrating controller, power switches and support components, all within a high density System-in-Package (SiP). The integration of a high-performance Zero-Voltage Switching (ZVS) topology, within the PI37xx increases point-of-load performance providing best-in-class power efficiency. The PI37xx requires only an external inductor and minimal capacitors to form a complete DC-DC switching mode buck-boost regulator.

The ZVS architecture enables high-frequency operation while minimizing switching losses and maximizing efficiency. The high-switching frequency operation reduces the size of the external filtering components, improves power density and enables very-fast dynamic response to line and load transients. The PI37xx regulator sustains high-switching frequency up to the rated input voltage without sacrificing efficiency and supports large-conversion ratios.

Features

- Over 98% efficiency at >800 kHz FSW
- Fast transient response
- Parallel capable
- External frequency synchronization / interleaving
- High-Side current sense amplifier
- General-purpose amplifier
- Input over / under voltage lockout (OVLO/UVLO)
- Output overvoltage protection (OVP)
- Over temperature protection (OTP)
- Fast and slow current limits
- -40°C to 120°C operating range (TJ)

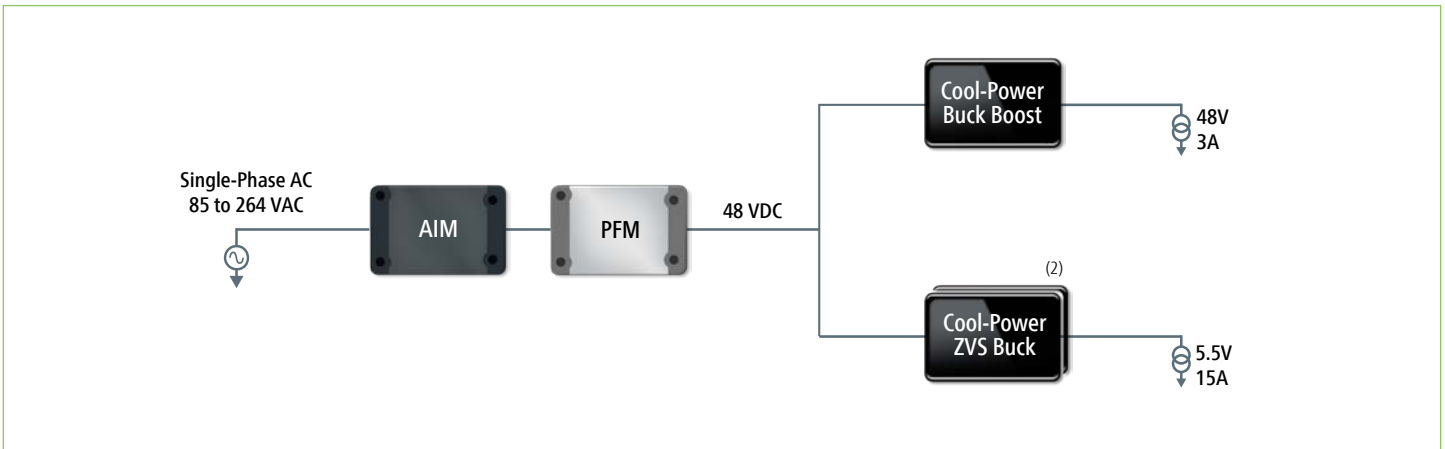
PI37xx Typical Application



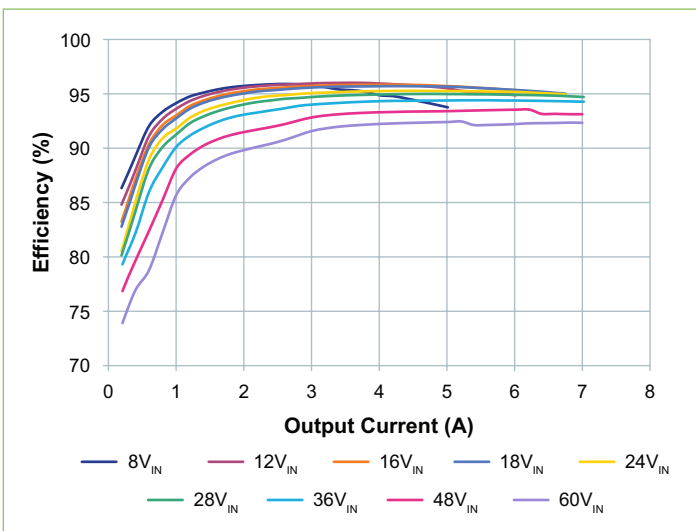
Part Numbering

Cool-Power	Input (V)	Output (V)	Power (W)	Package
High Performance Buck-Boost				
PI3749-00-LGIZ	16 – 34	12 – 34	200	LGA SIP: 10 x 14 x 2.5mm
PI3741-00-LGIZ	21 – 60	21 – 36	140	
PI3741-01-LGIZ	21 – 60	36 – 54	150	
PI3740-00-LGIZ	8 – 60	10 – 50	140	

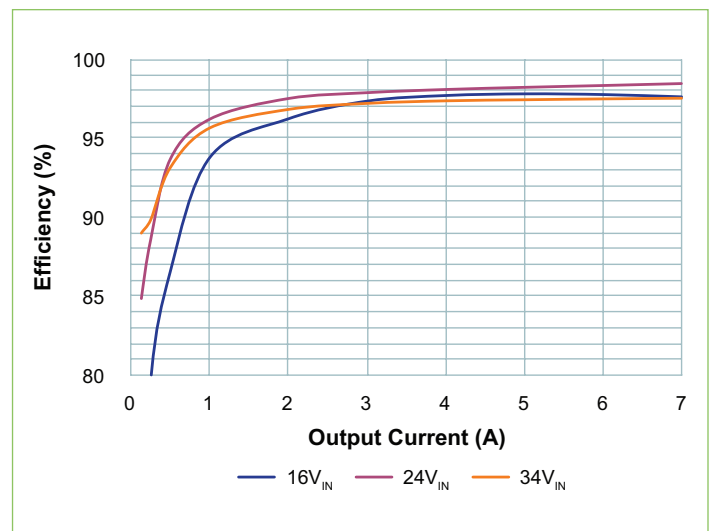
Example Powerchain



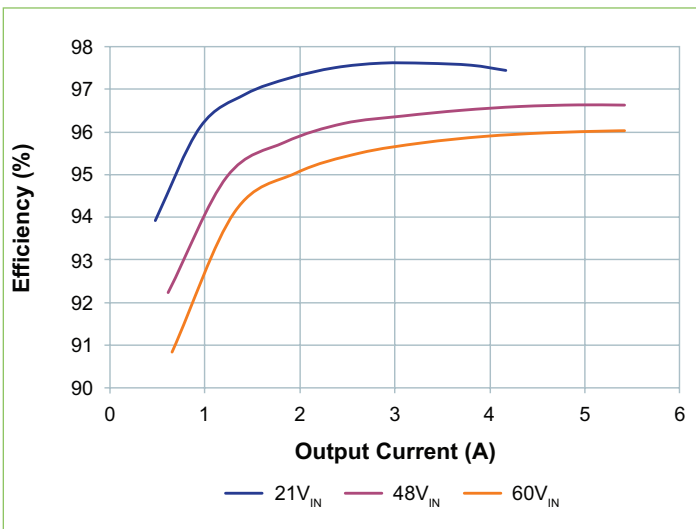
Efficiency PI3740, 12V_{OUT}



Efficiency PI3749, 24V_{OUT}



Efficiency PI3741-00, 24V_{OUT}



Efficiency PI3741-01, 48V_{OUT}

