Piccolo™ MCU High Voltage Digital Power Supply Developer's Kits

Cost-efficiently speed design time with kits featuring bridged and bridgeless power factor correction AC/DC, resonant LLC and phase shifted full bridge DC/DC topologies implemented with one low cost MCU

The new Piccolo™-based High Voltage Digital Power Developer's Kits from Texas Instruments bring real-time communications and control capabilities to high efficiency, high power design topologies for cost sensitive designs. Coupled with an industry leading software package, the kits represent an out-of-the-box development environment capable of supporting components and voltage levels designers encounter when working with these topologies.

Each kit includes a dedicated software package pre-loaded for the specific topology supported by the kit, offering a jump-start to the evaluation environment. Also included are graphical tools allowing experimentation without loading a development environment, further reducing start up time.

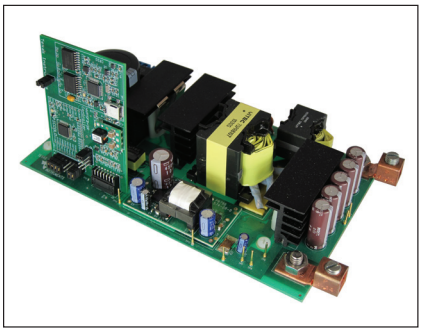
All four kits are supported in the controlSUITE™ software system developed for C2000™ MCUs to signifigantly reduce development time allowing designers to focus on product differentiators rather than basics. controlSUITE software includes unique,optimized libraries for the C2000 devices including building blocks and drivers for digital power supply designs. These kits also include an isolated JTAG via integrated USB interface integrated, eliminating the requirement of an external emulator, reducing development costs.

The Piccolo F28027* controlCARD included with each kit is ideally suited for digital power supply designs.
Running at up to 60 MHz, the Piccolo F28035 MCU features dual internal oscillators, up to 128KB of flash memory, a 12-bit 4.6MSPS ADC, high resolution ePWM outputs, and the control law accelerator (CLA). The CLA is an integrated independant, floating-point coprocessor designed to run control algorithms without any CPU involvment.

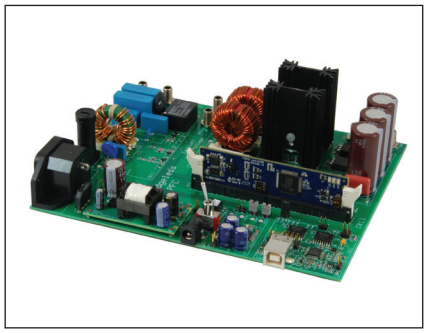
For more information on C2000 devices and tools please visit **www.ti.com/c2000**

Key Features

- High voltage kits featuring 85-240VAC inputs for AC/DC toplogies and 400VDC inputs for DC/DC topologies
- Bridged and bridgeless power factor correction AC/DC architectures
- Phase shifted full bridge with peak current mode control
- Resonant LLC with syncronous rectification
- Piccolo F28027* controlCARD based EVM
- Onboard isolated JTAG eliminating the need for an external emulator
- High performance TI analog devices used to complete drive stages
- GUI quick-start software and controlSUITE software



Phase Shifted Full Bridge



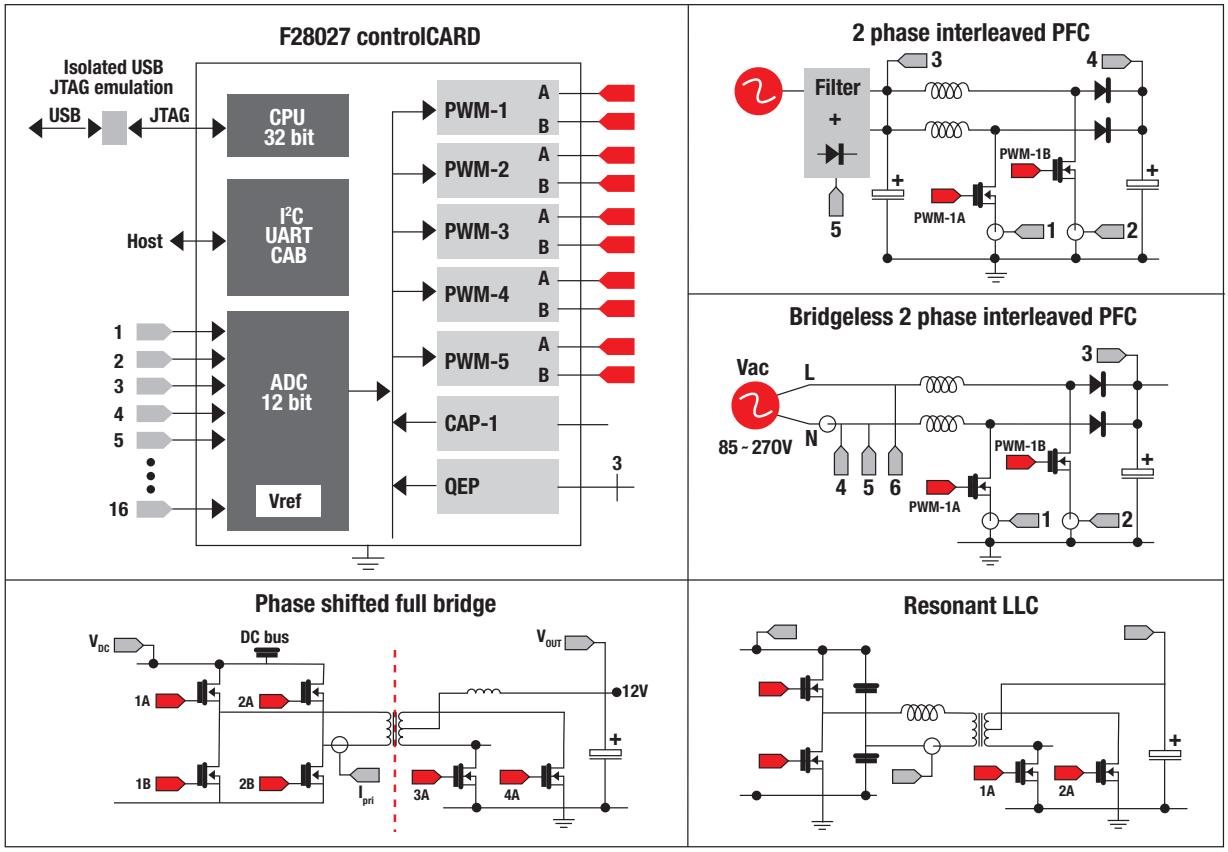
Bridgeless PFC

** TMDSHVBLPFC ships with F28035 controlCARD*

Conversion stage	Kit topology	Input	Output	Control techniques
AC/DC	Bridgeless interleaved PFC	90-260VDC	400VDC @360W	- Linear and non-linear PFC control - Voltage and current loop gain control - Auto compensation - Current trip level protection
AC/DC	2 Phase interleaved PFC	90-260VAC	400VDC@ 360W	- Voltage and current loop gain control - Auto-compensation control - Current trip level protection
DC/DC	Phase shifted full bridge	400VDC	12VDC @600W	- Peak current mode control with slope compensation - Voltage mode - OVP, UVP, OCP
DC/DC	Resonant LLC	400VDC	12VDC @300W	- Zero voltage switching mode - Zero current switching mode - Frequency modulation voltage mode control - Burst mode control - OVP, UVP, OCP

Specifications subject to change without notification.
Software, documentation, hardware schematics, etc. can be downloaded at **www.ti.com/c2000**

System mapping diagrams



Pre - Developed Application Libraries for C2000

Digital power math algorithms
- Control 2P/2Z
- Control 3P/3Z
- Inverse Square
- Exponential Moving Avg.
- Current Command

Digital power hardware drivers
- Single Channel Buck
- High Resolution Buck
- Multi-Phase Interleaved
- MP Balanced Interleaved
- Half-H Bridge
- 2 Phase Interleaved PFC
- ZVS Full Bridge

Please visit **www.ti.com/controlsuite** for most current list.

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Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265