Sine On

An Analog Product Catalog

3Q 2004

System Power Management

Inside

High Efficiency Secondary-Side Synchronous Buck PWM Controller

UCC2540

Get samples, datasheets, app reports and EVMs at:

www.ti.com/sc/device/UCC2540

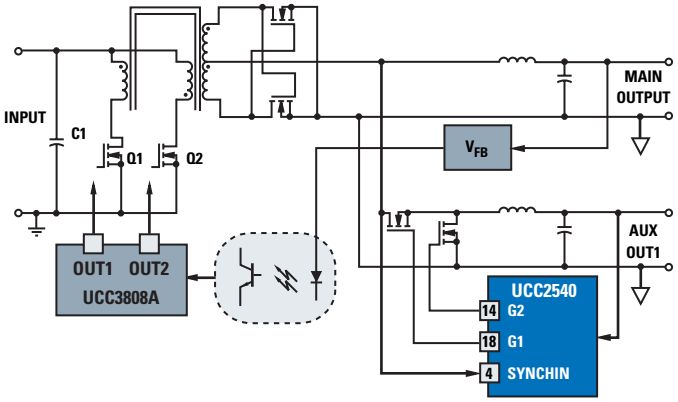
Key Features

- Three bias modes provides flexibility of operation from typical rails of 3.3 V to 24 V
- On-chip Predictive Gate Drive™ technology minimizes body diode conduction and reverse recovery losses for higher efficiency
- Dual ±3-A True Drive™ outputs efficiently drive high gate charge synchronous buck MOSFETs
- Tracking pin provides easy output sequencing using sequential, ratiometric or simultaneous methods
- Leading-edge modulation works with primary-side control of either peak current mode or voltage mode
- Over-current protection, reverse-current protection, and user-programmable shutdown give robust protection for the power stage against output shorts, and other over-current events
- 1% Reference over line, load and temperature
- Packaging: Available in 20-pin HTSSOP PowerPAD™ package
- Suggested resale price starts at $1.85 each in quantities of 1,000

Applications

- Secondary-side post regulation (SSPR) for multiple output power supplies
- Cascaded buck converters
- Post processing converters for bus converter and DC transformer architectures

Typical Application Diagram



Single-Chip PWM Controller for Interleaved Converters

UCC28220, UCC28221

Get samples, datasheets, app reports and EVMs at:

www.ti.com/sc/device/UCC28220

www.ti.com/sc/device/UCC28221

Key Features

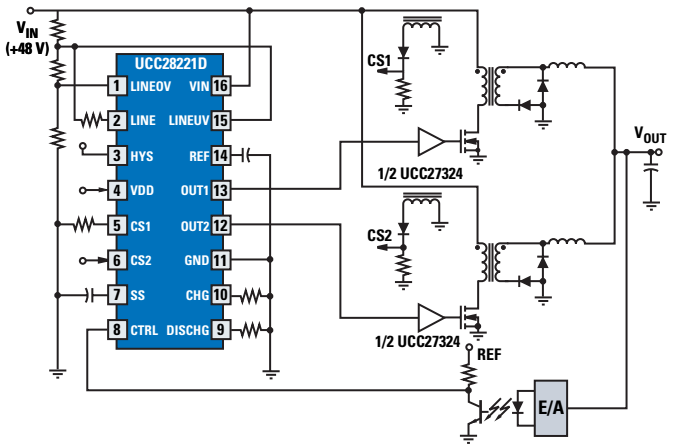
- 2-MHz high-frequency oscillator with 1-MHz operation per channel
- Integration of two PWM channels operating at 180° out of phase controls one high current output
- Programmable internal slope compensation with precise current matching
- Programmable maximum duty cycle clamp from 60% to 90% per channel
- Peak current mode control with cycle-by-cycle current limit
- Accurate line under- and over-voltage sense with programmable hysteresis
- UCC28220 for off-line converters or low input voltage systems
- UCC28221 includes 110-V startup circuitry for 24-V to 48-V input systems
- Programmable soft-start
- Packaging: Available in SOIC-16, TSSOP-16 (both UCC28220 and UCC28221), TSSOP-16 (UCC28220), and TSSOP-20 (UCC28221)
- Suggested resale price starts at $1.60 each in quantities of 1,000

Applications

High current, high efficiency interleaved off-line and DC/DC converters in 150-W to 800-W power range switch mode power supplies for end equipment such as:

- Server and workstation power
- Industrial control power
- Telecom, datacom, networking power

Typical Application Diagram



Active Clamp/Reset Current Mode Soft-Switching PWM Controllers

UCC2891, UCC2892, UCC2893, UCC2894, UCC2897

Get samples, datasheets, app reports and EVMs at:

www.ti.com/sc/device/PARTnumber

(Replace **PARTnumber** with **UCC2891**, **UCC2892**, **UCC2893**, **UCC2894**, or **UCC2897**)

Key Features

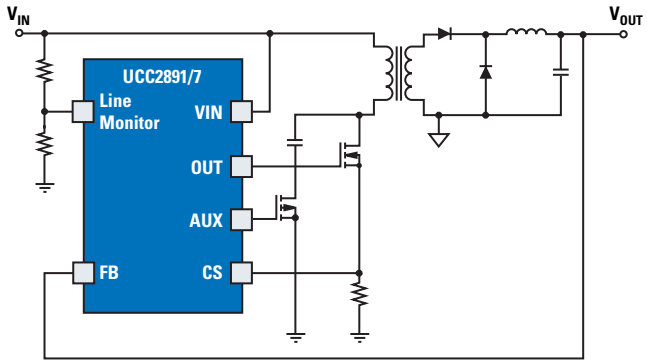
- Provides complementary auxiliary driver with programmable deadtime (turn-on delay) between AUX and MAIN switches
- Peak current mode control with cycle-by-cycle current limiting
- TrueDrive™ 2-A sink, 2-A source outputs
- 110-V input startup circuitry on UCC2891 and UCC2894 for 24-V to 48-V input systems
- Trimmed internal bandgap reference for accurate line UV and line OV threshold
- Programmable slope compensation
- Precise programmable maximum duty cycle limit from 55% to 85%
- Hiccup mode over current protection, bidirectional sync and input OV protection (UCC2897)
- Packaging: Available in 16-pin SOIC (UCC2891, UCC2892, UCC2893, UCC2894), 16-pin TSSOP (UCC2892, UCC2894), and coming soon: 16-pin TSSOP (UCC2891 and UCC2893), 20-pin TSSOP (UCC2897)
- Suggested resale price starts at $1.45 each in quantities of 1,000

Applications

High efficiency and low EMI/RFI designs in off-line and DC/DC converters in power supplies for end equipment including:

- Server power
- Telecom, datacom
- Automotive systems
- Consumer systems such as LCD TV and PDP TV

Typical Application Diagram



Advanced PFC/PWM Combination Controller for Off-Line Power Converters

UCC28510 through UCC28517

Get samples, datasheets, app reports and EVMs at:

www.ti.com/sc/device/PARTnumber

(Replace **PARTnumber** with **UCC28510**, **UCC28511**, **UCC28512**, **UCC28513**, **UCC28514**, **UCC28515**, **UCC28516**, or **UCC28517**)

Key Features

- Combines PFC and PWM power stages in one chip
- Trailing-edge/leading-edge modulation minimizes ripple current in boost capacitor
- 3-A sink/2-A source gate drives provide efficient MOSFET switching without external drivers
- Multiple UVLO options optimize startup and turn-off behaviors for differing biasing schemes
- Two PWM UVLO hysteresis options for different load transient requirements and hold-up time
- Packaging: Available in 20-pin SOIC (wide), 20-pin PDIP
- Suggested resale price starts at $1.80 each in quantities of 1,000

PFC Features Include:

- Transconductance amplifier for enhanced transient response
- Improved power factor and THD through improved multiplier

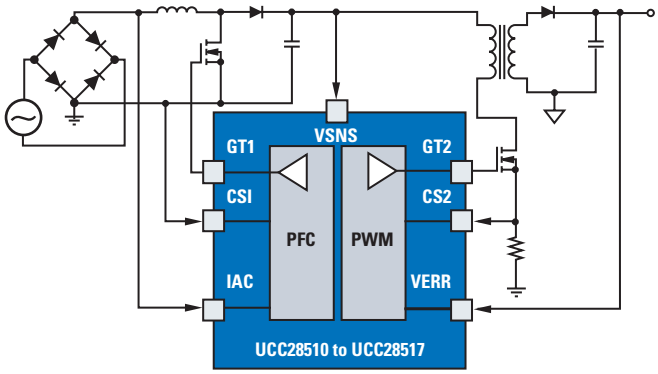
PWM Features Include:

- Programmable max duty cycle up to 90% protects downstream power stage
- 1x:2x PFC:PWM frequency options allow smaller PWM components while minimizing losses in PFC

Applications

- Desktop and server computer power converters
- Distribution power system front ends
- Monitor and display systems

Typical Application Diagram



Leading-Edge Modulation Reduces Ripple Current in AC/DC Applications

UCC2817A, UCC3817A, UCC2818A, UCC3818A, UCC2819A, UCC3819A

Get samples, datasheets, app reports and EVMs at:

www.ti.com/sc/device/PARTnumber

(Replace **PARTnumber** with **UCC2817A, UCC3817A, UCC2818A, UCC3818A, UCC2819A or UCC3819A**)

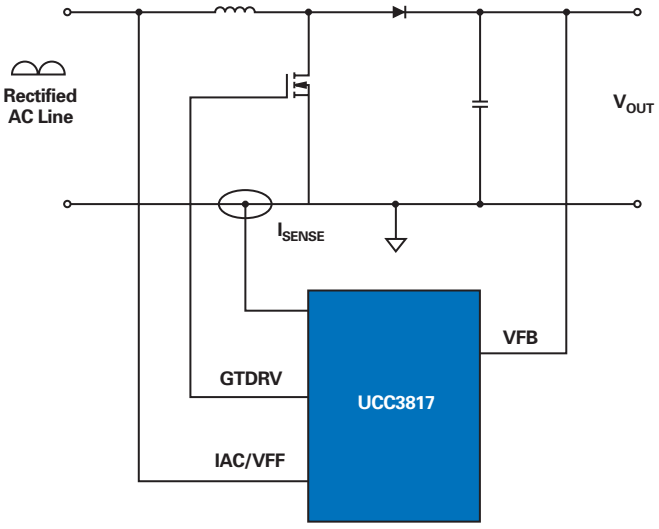
Key Features

- Leading-edge modulation
- Controls boost preregulator to near unity power factor
- Limits line distortion
- Average current mode control
- Improved feed-forward line regulation
- Improved noise immunity
- Over-voltage protection
- Packaging: Available in 16-pin SOIC, 16-pin PDIP, and 16-pin TSSOP
- Suggested resale price starts at $1.15 each in quantities of 1,000

Applications

- Off-line power supply from 75 W to 2 kW that must meet EN6100-1-2 harmonic reduction requirements and/or operate over a wide or universal input voltage range (85 V to 270 VAC)
- Desktop and server computer power converters
- Distribution power system front ends
- Monitor and display systems

Typical Application Diagram



High-Speed Synchronous Buck Drivers with Enable

UCC27223

Get samples, datasheets and app reports at:

www.ti.com/sc/device/UCC27223

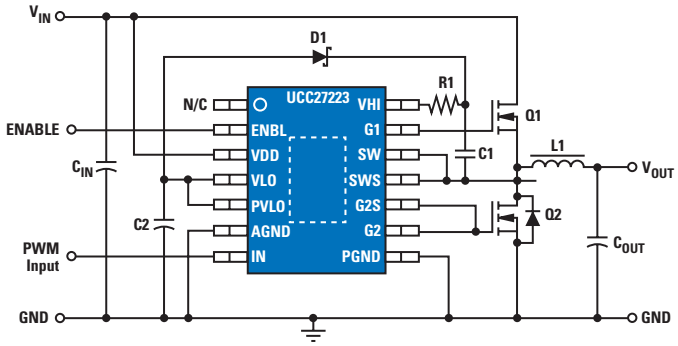
Key Features

- TI's Predictive Gate Drive™ technology provides 2 to 4% efficiency gains over competing adaptive technologies and reduces MOSFET power dissipation by 20 to 40%
- ±3-A TrueDrive™ output gate drive architecture provides high currents at the Miller Plateau MOSFET switching thresholds
- 6.5-V on-board gate drive regulator optimizes power MOSFET gate drive for 5-V to 12-V input voltages
- ENABLE pin controls operation of both outputs, internal logic latch to keep both outputs low until the first PWM pulse comes in
- Packaging: Available in 14-pin PowerPAD™ TSSOP
- Suggested resale price starts at $1.55 each in quantities of 1,000

Applications

- Non-isolated, high-frequency, low output voltage DC/DC converters
- Multiphase converters for processor power in combination with TPS40090
- 12-V or 5-V inputs (or 3.3 V_{IN} with 12-V bus rail) to output voltages as low as 0.8-V
- CPU power, general computer, telecom, datacomm and merchant power applications

Typical Application Diagram



Family of Dual 4-A Industry Standard MOSFET Drivers with Enable

UCC27423, UCC27424, UCC27425

Get samples and datasheets at:

www.ti.com/sc/device/PARTnumber

(Replace **PARTnumber** with **UCC27423**, **UCC27424**, or **UCC27425**)

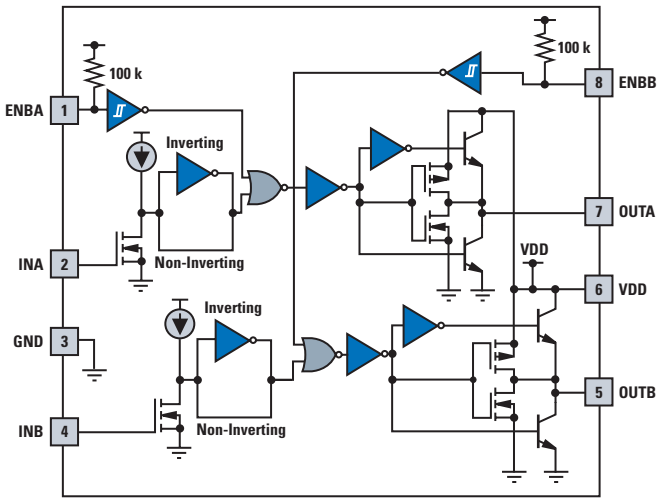
Key Features

- Independent enable function provides flexibility in startup and shutdown operations
- Delivers large 4-A peak currents into capacitive loads with TI's TrueDrive™ output stage
- 4-V to 15-V supply voltage
- TTL/CMOS compatible inputs independent of supply voltage
- 20-ns typ rise and 15-ns typ fall with 1.8-nF load and VDD-14 V
- Typical propagation delay times of 25 ns with input falling and 35 ns with input rising
- Dual outputs can be paralleled for higher drive-current
- Packaging: Available in 8-pin SOIC, 8-pin PDIP, 8-pin PowerPAD™ MSOP
- Suggested resale price starts at $1.10 each in quantities of 1,000

Applications

- Switch mode power supplies
- DC/DC converters
- Motor controllers
- Line drivers
- Class-D switching amplifiers
- Synchronous rectifier drivers
- For use with any driver-less switching controllers or to provide drive capability

Typical Block Diagram



Enhanced, Low-Input (2.25 V to 5.5 V) High-Current Synchronous Buck Controller

TPS40020, TPS40021

TPS40K™/SWIFT™ SOFTWARE TOOL

Get samples, datasheets, app reports, EVMs and software tool at:

www.ti.com/sc/device/TPS40020

www.ti.com/sc/device/TPS40021

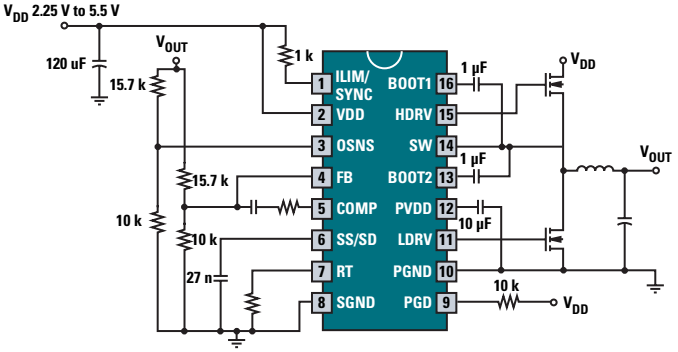
Key Features

- Operating input voltage 2.25 V to 5.5 V
- Output voltage as low as 0.7 V
- 1% internal 0.7-V reference
- Predictive Gate Drive™ N-channel MOSFET drivers for higher efficiency
- Externally adjustable soft-start and over-current limit
- Programmable fixed-frequency 100-KHz to 1-MHz voltage-mode control
- Source-only current or source/sink current
- Quick response output transient comparators with Power Good indication provide output status
- Externally synchronizable to 1.5 X f_{OSC}
- On-chip charge pump provides enhanced gate drive for higher current requirements
- Low power shutdown mode
- Packaging: Available in 16-pin PowerPAD™ TSSOP
- Suggested resale price starts at $1.15 for PWP and $1.87 each for PWPR in quantities of 1,000

Applications

- Network equipment
- Telecom equipment
- Base stations
- Servers
- DSP power

Typical Application Diagram



Wide Input Voltage (8 V to 40 V) Synchronous Buck Controller

TPS40054, TPS40055, TPS40057

TPS40K™/SWIFT™ SOFTWARE TOOL

Get samples, datasheets, app reports, EVMs and software tool at:

www.ti.com/sc/device/PARTnumber

(Replace **PARTnumber** with **TPS40054**, **TPS40055**, or **TPS40057**)

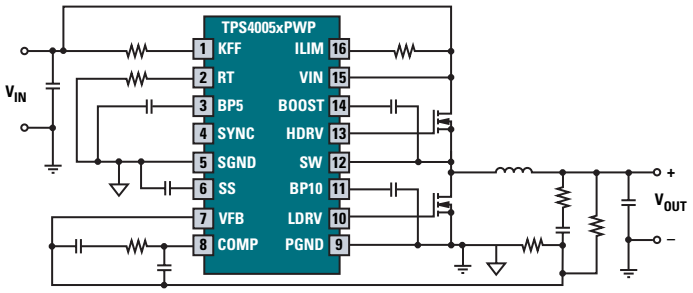
Key Features

- Operating input voltage 8 V to 40 V
- Input voltage feed-forward compensation
- 1% internal 0.7-V reference
- Programmable fixed frequency 100-K to 1-MHz voltage-mode controller
- Internal gate drive outputs for high-side and synchronous N-channel MOSFETs
- Thermal shutdown
- Externally synchronizable
- TPS40054: source only
- TPS40055: source/sink
- TPS40057: source/sink with V_{OUT} prebias
- Programmable high-side sense short circuit protection
- Programmable closed-loop soft-start
- Internal diode for the high-side gate drive boost voltage
- Packaging: Available in 16-pin PowerPAD™
- Suggested resale price starts at $1.35 each in quantities of 1,000

Applications

- Networking equipment
- Telecom equipment
- Base stations
- Servers

Typical Block Diagram



Midrange Input, High-Efficiency (4.5 V to 28 V) Synchronous Buck DC/DC Controller with Voltage Feed Forward

TPS40070, TPS40071

TPS40K™/SWIFT™ SOFTWARE TOOL

Get samples, datasheets, app reports, EVMs and software tool at:

www.ti.com/sc/device/TPS40070

www.ti.com/sc/device/TPS40071

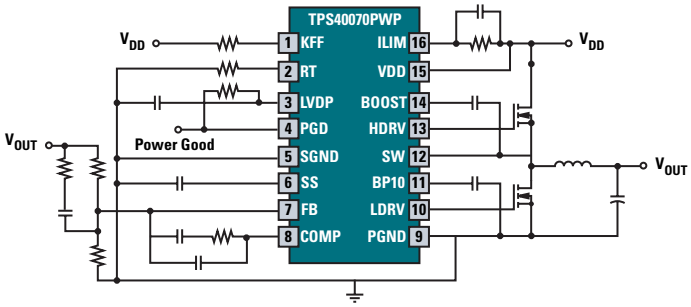
Key Features

- Operation over 4.5-V to 28-V input range
- Programmable fixed-frequency up to 1 MHz
- Voltage-mode controller
- Predictive Gate Drive™ technology with anti-cross conduction circuitry
- <1% Internal 700-mV reference
- Internal gate drive outputs for high-side and synchronous N-channel MOSFETs
- Thermal shutdown protection
- TPS40070: source only
- TPS40071: source/sink
- Programmable high-side sense short circuit protection
- Packaging: Available in 16-pin HTSSOP PowerPAD™ (PWP)
- Suggested resale price starts at $1.35 each in quantities of 1,000

Applications

- Networking equipment
- Telecom equipment
- Base stations
- Servers

Typical Application Diagram



High Frequency, 2-, 3-, or 4-Channel Multiphase DC/DC Controller

TPS40090

Get samples, datasheets, app reports and EVMs at:

www.ti.com/sc/device/TPS40090

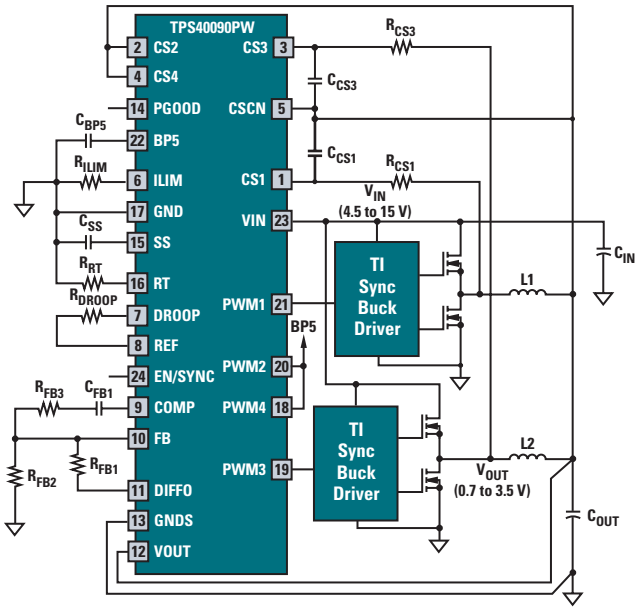
Key Features

- Two-, three-, or four-phase operation
- 4.5-V to 15-V operating range
- Programmable switching frequency up to 1 MHz/phase
- Current mode control with forced current sharing
- 1% internal 0.7-V reference
- True remote sensing differential amplifier
- Resistive or DCR current sensing
- Current sense fault protection
- Programmable load line
- Compatible with UCC27222 and TPS2834 drivers
- Packaging: Available in 24-pin TSSOP (PW)
- Suggested resale price starts at $1.90 each in quantities of 1,000

Applications

- Internet servers
- Network equipment
- Telecommunications equipment
- DC power distributed systems

Typical Application Diagram



Notebook Power, Dual-Channel, DDR Selectable Synchronous Buck Controller

TPS51020

Get samples, datasheets, app reports and EVMs at:

www.ti.com/sc/device/TPS51020

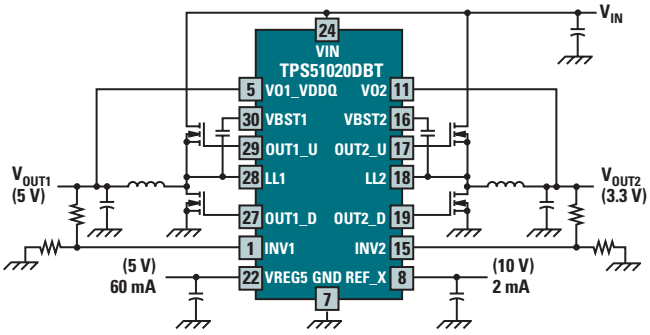
Key Features

- Wide input voltage range: 4.5 V to 28 V
- Selectable dual and DDR modes
- Selectable fixed-frequency voltage mode
- Integrated selectable output discharge
- Advanced Power Good logic monitors both channels
- Selectable autoskip mode
- Integrated boot-strap diodes
- 180° phase shift between channels
- Integrated 5-V, 60-mA regulator
- Input feed-forward control
- 1% internal 0.85-V reference
- $R_{DS(on)}$ over-current detection (4200 ppm/°C)
- Integrated OVP, UVP and Power Good timers
- Packaging: Available in 30-pin TSSOP (DBT)
- Suggested resale price starts at $3.15 each in quantities of 1,000

Applications

- Notebook computers system bus and I/O
- DDR or DDR2 termination

Typical Application Diagram



General-Purpose, Dual-Channel Synchronous Buck DC/DC Controller

TPS5124

Get samples, datasheets, app reports and EVMs at:

www.ti.com/sc/device/TPS5124

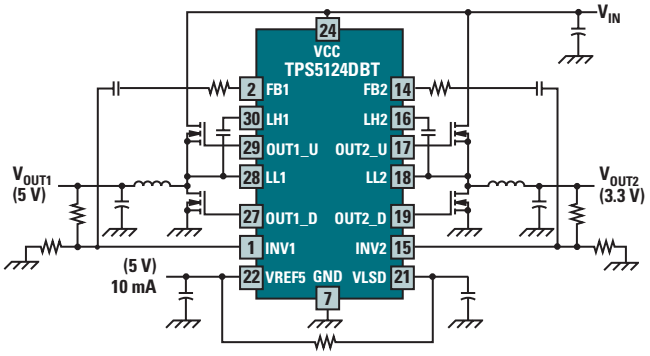
Key Features

- Input voltage range 4.5 V to 15 V and 6.5 V to 15 V
- High efficiency—no current sense resistor required, $R_{DS(on)}$ over-current detection with temperature compensation
- Adjustable output voltage down to 0.9 V
- Voltage-mode PWM control: Maximum 500-kHz operation
- 180° out-of-phase control
- Individual standby and soft-start for each channel—easy power sequencing
- Over-voltage and under-voltage protection
- Built-in boot-strap diode
- Built-in 5-V linear regulator
- Accurate ±1% 0.85-V reference
- Packaging: Available in 30-pin TSSOP (DBT)
- Suggested resale price starts at $2.75 each in quantities of 1,000

Applications

- Consumer game systems
- DSP applications
- Digital set-top boxes
- VGA and sound boxes

Typical Application Diagram



Low-Voltage, 1.5-A, 700-kHz Synchronous Buck Step-Down Converter

TPS54110

TPS40K™/SWIFT™ SOFTWARE TOOL

Get samples, datasheets, app reports, EVMs and software tool at:

www.ti.com/sc/device/TPS54110

Key Features

- Operating input voltage range: 3 V to 6 V
- Integrated 3-A MOSFET switches for high efficiency at 1.5-A continuous source or sink
- Output voltage adjustable down to 0.9 V with 1% accuracy
- Wide PWM frequency – fixed 350 kHz, 550 kHz or adjustable 280 kHz to 700 kHz
- Fast transient response
- Externally compensated for design flexibility
- Load protected by peak current limit and thermal shutdown
- Adjustable slow start
- Synchronizes to external clock
- Packaging: Available in 20-pin PowerPAD™ HTSSOP
- Suggested resale price starts at $2.15 each in quantities of 1,000

Applications

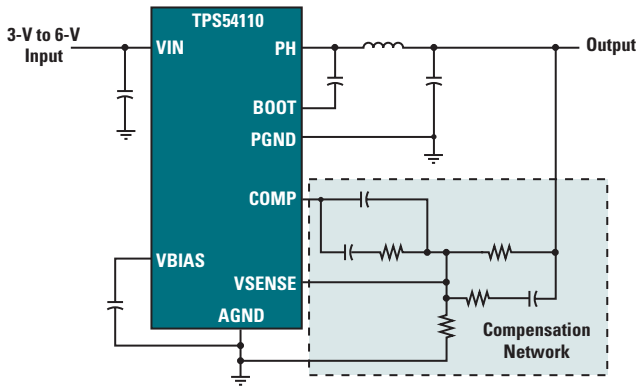
- Low-voltage, high-density systems with power distributed at 5 V or 3.3 V
- Point-of-load regulation for high-performance DSPs, FPGAs, ASICs and microprocessors
- Broadband, networking, and optical communications infrastructure

Other Similar SWIFT™ DC/DC Converters

Device	I_{OUT}	Package	Price[1]
TPS54310	3 A	20-HSTTOP	2.90
TPS54610	6 A	28-HTSSOP	3.95

[1] *Suggested resale price in U.S. dollars in quantities of 1,000.*

Typical Application Diagram



4.5-V to 20-V Input, 3-A Step-Down Converter in TSSOP-16

TPS5435x

TPS40K™/SWIFT™ SOFTWARE TOOL

Get samples, datasheets, app reports, EVMs and software tool at:
www.ti.com/sc/device/TPS54350

Key Features

- Operating input voltage range: 4.5 V to 20 V
- 4.5-A peak MOSFET switch for high efficiency at 3-A continuous output current
- Uses external low-side MOSFET or diode
- Output voltage adjustable down to 0.9 V with 1% accuracy
- Wide PWM frequency – fixed 250 kHz, 500 kHz or adjustable 250 kHz to 700 kHz
- Load protected by peak current limit and thermal shutdown
- Internal slow start
- Adjustable under-voltage lockout
- Synchronizes to external clock
- Packaging: Available in 16-pin PowerPAD™ TSSOP
- Suggested resale price starts at $2.35 each in quantities of 1,000

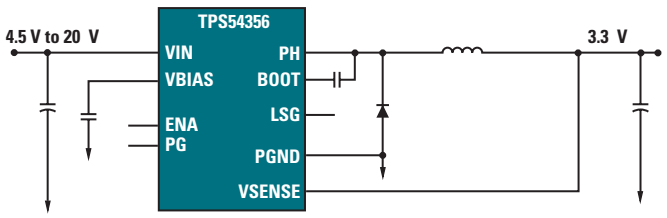
Applications

- Industrial and commercial low power systems
- Computer peripherals
- 9-/12-V wall adapter
- Point-of-load regulation for high-performance DSPs, FPGAs, ASICs and microprocessors

SWIFT™ DC/DC Converters Output Voltage Options

Device	V_{OUT} (V)
TPS54352	1.2
TPS54353	1.5
TPS54354	1.8
TPS54355	2.5
TPS54356	3.3
TPS54357	5.0
TPS54350	Adj.

Typical Application Diagram



Low-Voltage, 3-A 700-kHz Step-Down Converter for Sequencing

TPS54380

TPS40K™/SWIFT™ SOFTWARE TOOL

Get samples, datasheets, app reports, EVMs and software tool at:
www.ti.com/sc/device/TPS54380

Key Features

- Operating input voltage range: 3 V to 6 V
- Power-up/down tracking for sequencing
- Integrated MOSFET switches for high efficiency at 3-A continuous output source or sink current
- Wide PWM frequency: fixed 350 kHz or adjustable 280 kHz to 700 kHz
- Power Good and enable
- Load protected by peak current limit and thermal shutdown
- Packaging: Available in 20-pin PowerPAD™ HTSSOP
- Suggested resale price starts at $2.95 each in quantities of 1,000

Applications

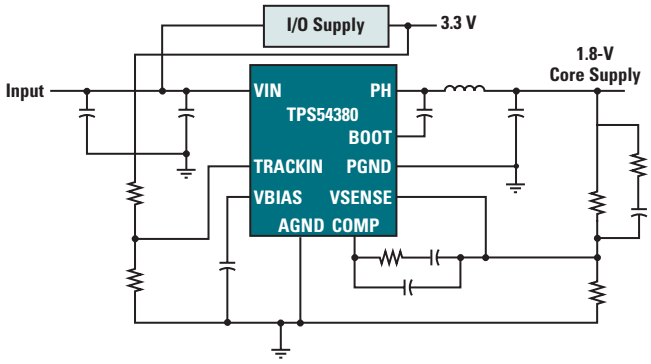
- Low-voltage, high-density systems with power distributed at 5 V or 3.3 V
- Point-of-load regulation for high-performance DSPs, FPGAs, ASICs and microprocessors
- Broadband, networking, and optical communications infrastructure

Other Similar SWIFT™ DC/DC Converters

Device	I_{OUT}	Input Voltage	Package	Price[1]
TPS54680	6 A	3 V to 6 V	20-HSTTOP	3.95
TPS54980	9 A	3 V to 4 V	28-HTSSOP	4.20

[1] *Suggested resale price in U.S. dollars in quantities of 1,000.*

Typical Application Diagram



800-mA Synchronous Step-Down Converter

TPS62050

Get samples, datasheets, app reports and EVMs at:

www.ti.com/sc/device/TPS62050

Key Features

- 2.7-V to 10-V operating input voltage range
- Up to 95% efficiency
- Adjustable (0.7 V to 6.0 V) and fixed (1.5 V, 1.8 V, and 3.3 V) output options
- Synchronizable to external clock signal up to 1.2 MHz
- –40 to 85° C operating temperature
- Over temperature and over current protected
- Packaging: Available in 10-pin MSOP
- Suggested resale price starts at $1.85 each in quantities of 1,000

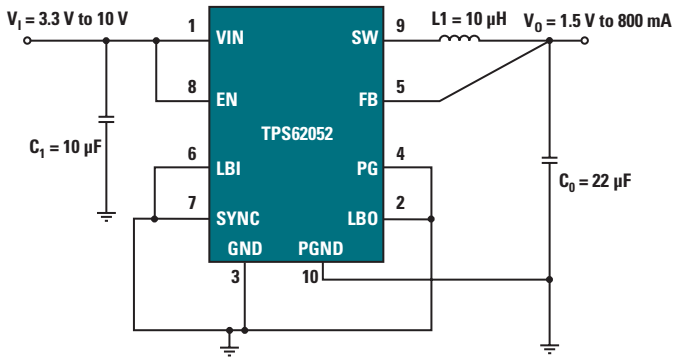
Applications

- Distributed power and point-of-load regulation
- Embedded computer systems
- Servers
- Networking equipment
- Battery operated/portable systems

Synchronous Step-Down Converters Output Voltage Options

Device	Output Voltage (V)
TPS62050DGS	Adjustable 0.7 to 6
TPS62052DGS	1.5
TPS62054DGS	1.8
TPS62056DGS	3.3

Typical Application Diagram



Cap-Free 400-mA LDO

TPS736xx

Get samples, datasheets, app reports and EVMs at:

www.ti.com/sc/device/TPS73601

Key Features

- No output capacitor is required for stability
- Ultra-low dropout voltage: 75 mV typ
- Excellent load transient response—with or without optional output capacitor
- New NMOS topology delivers low reverse leakage current
- Low noise: 30 μV_{RMS} typ (10 Hz to 100 kHz)
- 1% overall accuracy over line, load, and temperature
- Less than 1 µA max IQ in shutdown mode
- Thermal shutdown and current limit protection
- Available in multiple output voltage versions
  - Fixed outputs of 1.5 V, 1.8 V, 2.5 V, 3.0 V, and 3.3 V
  - Adjustable output from 1.20 V to 5.5 V
  - Custom outputs available
- Packaging: Available in small SOT23-5 and thermally-enhanced SOT223-5
- Suggested resale price starts at $0.45 each in quantities of 1,000

Applications

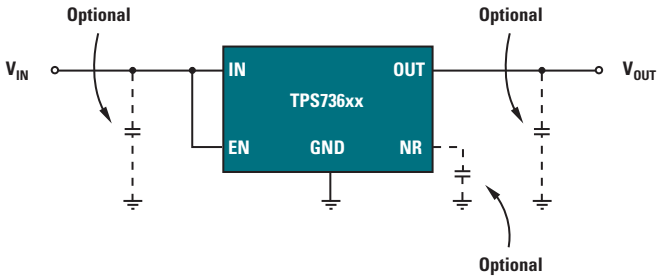
- Portable/battery-powered equipment
- Post-regulation for switching supplies
- Noise-sensitive circuitry such as VCOs
- Point-of-load regulation for DSPs, FPGAs, ASICs and microprocessors

Low Dropout Regulators (LDO)

Device	Output Current	Packages	Output Voltages (V)	Price[1]
TPS731xx	150 mA	SOT-23	1.5, 1.8, 2.5, 3.0, 3.3, 5.0, Adj	0.45
TPS732xx	250 mA	SOT-23, SOT-223	1.5, 1.8, 2.5, 3.0, 3.3, 5.0, Adj	0.65
TPS736xx	400 mA	SOT-23, SOT-223	1.5, 1.8, 2.5, 3.0, 3.3, Adj	0.85

[1] *Suggested resale price in U.S. dollars in quantities of 1,000.*

Typical Application Diagram



Synchronous Boost Converter

TPS6102x

Get samples, datasheets, app reports and EVMs at:

www.ti.com/sc/device/TPS61020

Key Features

- 0.9-V to 6.5-V operating input voltage range
- Up to 500-mA, 5-V output at 3.3-V input
- Up to 96% efficiency
- Adjustable (1.8 V to 5.5 V) and fixed (3.0 V, 3.3 V, and 5.0 V) output options
- Low EMI converter
- –40 to 85° C operating temperature
- Over-temperature protection
- Packaging: Available in 10-pin QFN
- Suggested resale price starts at $1.40 each in quantities of 1,000

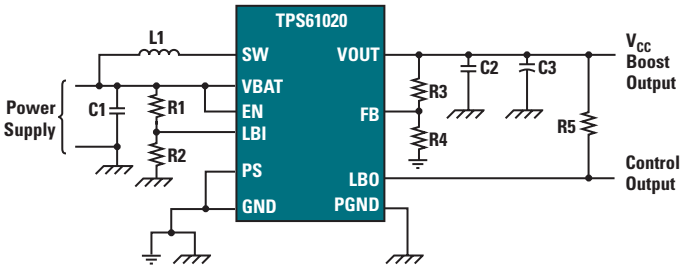
Applications

- Distributed power and point-of-load regulation
- Embedded computer systems
- Servers
- Networking equipment
- Battery operated/portable systems

Synchronous Boost Converters

Device	Output Voltage (V)
TPS61020DRC	Adjustable
TPS61024DRC	3.0
TPS61025DRC	3.3
TPS61027DRC	5.0

Typical Application Diagram



100-V, Second-Generation 802.3af and Legacy Powered Device Controllers

TPS2375, TPS2376, TPS2377

Get samples, datasheets, app reports and EVMs at:

www.ti.com/sc/device/PARTnumber

(Replace **PARTnumber** with **TPS2375**, **TPS2376**, or **TPS2377**)

Key Features

- Fully supports IEEE 802.3af specification
- Integrated 1-Ω, 100-V low-side switch
- 15-kV system-level ESD capable
- Supports use of low-cost silicon rectifiers
- Programmable inrush current control
- Fixed 450-mA current limit
- Fixed and adjustable UVLO options
- Open-drain power good reporting
- Over-temperature protection
- Industrial temperature range: –40° to 85° C
- Packaging: Available in 8-pin TSSOP (PW) and 8-pin SOIC (D)
- Suggested resale price starts at $1.25 each in quantities of 1,000

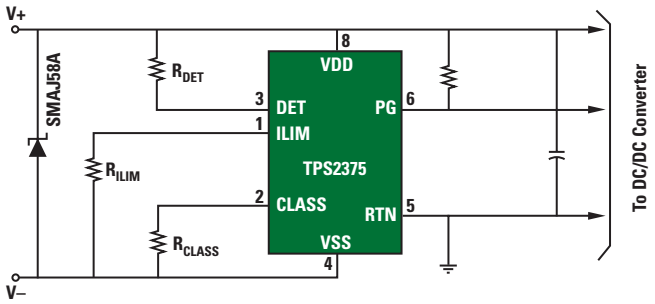
Applications

- VoIP phones
- WLAN APs
- Security cameras
- Network cameras
- Security terminals
- Building controls
- Industrial automation
- POS terminals

Power-over-Ethernet Powered Device (PD) Interface Switches

Device	Detection Support	Classification Support	UVLO	Operating Temperature	Programmable Inrush Current
TPS2375	Yes	Yes, Class 0 - 4	IEEE802.3af	–40 to 85° C	Yes
TPS2376	Yes	Yes, Class 0 - 4	Adjustable	–40 to 85° C	Yes
TPS2377	Yes	Yes, Class 0 - 4	Legacy	–40 to 85° C	Yes

Typical Application Circuit



Power-over-Ethernet Octal Power Sourcing Equipment Power Managers

TPS2383A

Get samples, datasheets, and app reports at:

www.ti.com/sc/device/TPS2383A

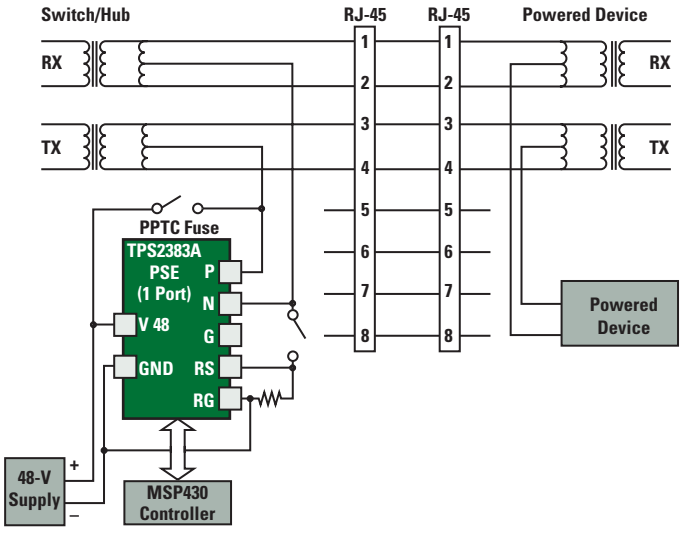
Key Features

- Operates from a single +48-V supply
- Two-point 25-kΩ resistor discovery
- Power classification with bypass option
- Capacitive detection for non-compliant legacy loads
- Current management for charging bulk capacitance and EMI reduction
- Electronic circuit breaker
- Input under-voltage lockout (UVLO)
- Load over-current and under-current detection
- 12-bit port current and voltage acquisition
- Standard slave I²C serial interface
- Dual color LED driver for port status
- Packaging: Available in 64-pin LQFP
- Suggested resale price starts at $7.35 each in quantities of 1,000

Applications

- Networking switches
- Mid-span injectors

Typical Block Diagram



Go to **power.ti.com/poe**
for Power-over-Ethernet resources including power supply reference designs for IP phones, WLAN APs and security cameras

Positive High-Voltage Hot-Swap Controllers

TPS2490, TPS2491

Get samples, datasheets, app reports and EVMs at:

www.ti.com/sc/device/TPS2490

www.ti.com/sc/device/TPS2491

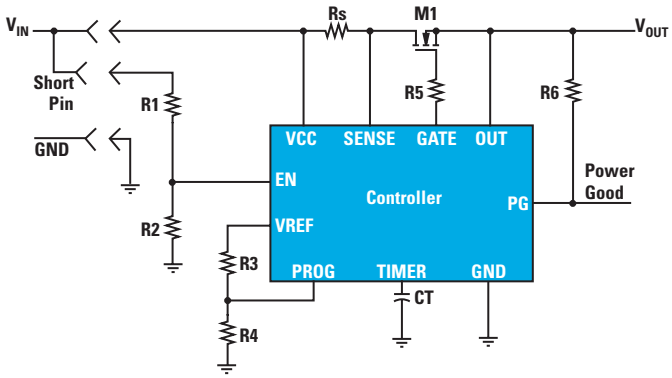
Key Features

- Programmable power limiting and current limiting for complete SOA protection
- Wide operating range: +9 V to +80 V
- Latched operation (TPS2490) and automatic retry (TPS2491)
- High-side drive for low-$R_{DS(on)}$ external N-channel MOSFET
- Programmable fault timer to protect the MOSFET and eliminate nuisance shutdowns
- Power Good open-drain output for downstream DC/DC coordination
- Enable can be used as a programmable under-voltage lockout or logic control
- Packaging: Available in 10-pin MSOP
- Suggested resale price starts at $1.70 each in quantities of 1,000

Applications

- Server backplanes
- Storage area network (SAN)
- Medical systems
- Plug-in modules
- Base stations
- 12-V, 24-V or 48-V backplane systems

Typical Application Diagram



–48-V Redundant OR-ing Hot-Swap Controller

TPS2350

Get samples, datasheets, app reports and EVMs at:

www.ti.com/sc/device/TPS2350

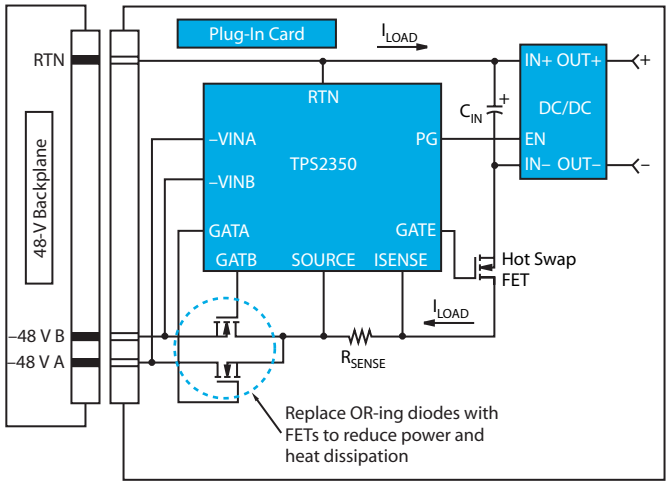
Key Features

- Replaces OR-ing diodes
- Operating supply range of –12 V to –80 V
- Withstands transients to –100 V
- Programmable current limit
- Programmable linear inrush slew rate
- Programmable UV/OV thresholds
- Programmable UV and OV hysteresis
- Fault timer to eliminate nuisance trips
- Power Good and fault outputs
- Packaging: Available in 14-pin TSSOP and SOIC
- Suggested resale price starts at $1.90 each in quantities of 1,000

Applications

- –48-V distributed power systems
- Central office switching
- AdvancedTCA® –48-V power control
- –48-V telecom power systems

Typical Application Diagram



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