Sine On™

An Analog Product Catalog

2Q 2003

Power Supply Control

**New synchronous buck driver** for today's low output voltage non-isolated converters **UCC27222** **Page 4**
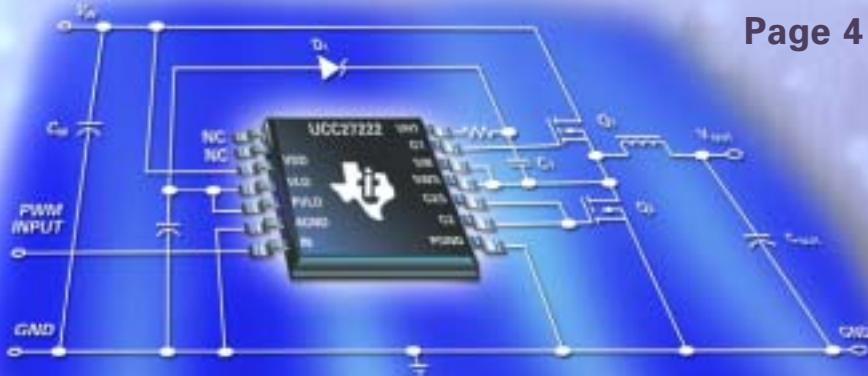
Advanced controllers combine PFC and PWM power stages in one chip **UCC2851x family** **Page 6**
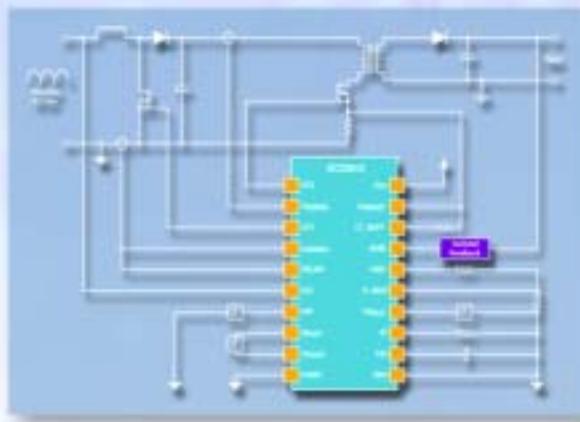
PWM Controllers

Ultra-high-speed, 8-pin voltage mode PWM controller with fast overcurrent protection

UCC35705 and UCC35706

Get samples, datasheets and app reports at:
www.ti.com/sc/device/partnumber
Replace partnumber in URL with UCC35705 or UCC35706

- High-speed, 4-MHz oscillator allows for smaller magnetics for high density and lower cost converters
- Integrated oscillator with voltage feedforward circuitry
- 25-ns current limit delay provides fast protection from overcurrent faults
- Low start-up current: 30 µA
- Packaging: 8-pin package for simplicity and reduced size (SOIC, MSOP and PDIP)
- Suggested resale price starts at $1.00 each in quantities of 1,000

UCC35705/6 Typical Application
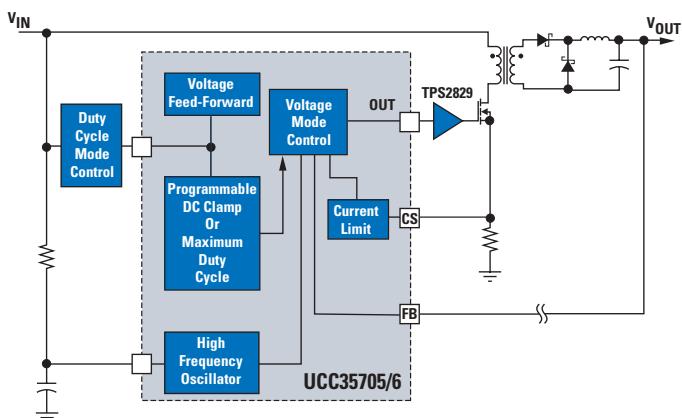
Applications include:
- High frequency, isolated forward and flyback converters in the 25-W to 200-W range
- Any isolated DC/DC and off-line converters with wide input voltage range
- Board level point-of-load DC/DC modules

Next-generation, current-mode PWM controllers offer lowest power and improved efficiency

UCC38C4x

Get samples, datasheets and app reports at:
www.ti.com/sc/device/partnumber
Replace partnumber in URL with UCC38C40, UCC38C41, UCC38C42, UCC38C43, UCC38C44 or UCC38C45

- Fastest overcurrent protection: 35-ns delay
- Low, 50-µA start-up current
- Low operating current: 2.3 mA at 50 kHz
- ±1-A peak output current
- Rail-to-rail output swings with 25-ns rise and 20-ns fall times
- ±1% initial trimmed 2.5-V error amplifier reference
- Trimmed oscillator discharge current
- Packaging: Available in 8-pin DIP, 8-pin SOIC and 8-lead MSOP which minimizes space
- Suggested resale price starts at $0.99 each in quantities of 1,000

UCC38C42 Block Diagram
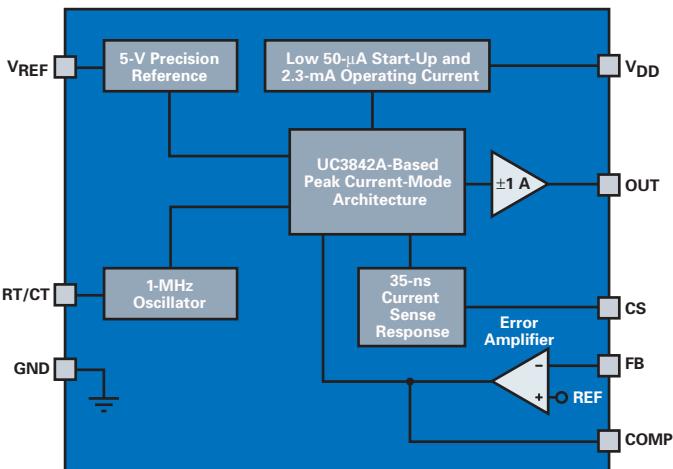
Applications include:
- Merchant and OEM power supply applications
- Telecom and datacom modular and brick applications

PWM Controllers

Current mode push-pull with programmable slope compensation

UCC38083/4/5/6

Get samples, datasheets and app reports at:
www.ti.com/sc/device/partnumber
Replace partnumber in URL with UCC38083, UCC38084, UCC38085 or UCC38086

- Programmable slope compensation
- Internal soft-start (UCC38083 and UCC38084)
- Cycle by cycle current limiting
- Low start-up current: 120 µA and 1.5 mA typical run current
- Single external component oscillator programmable from 50-kHz to 1-Mhz
- Current sense discharge transistor for good noise immunity
- Flexibility with two UVLO levels – UCC38084 and UCC38086 have minimum operating voltage of 4.1 V, making them perfect for 5-V systems
- Packaging: Available in 8-pin SOIC, 8-pin DIP, and 8-pin TSSOP
- Suggested resale price starts at $1.20 each in quantities of 1,000

UCC38083/4/5/6 Typical Application
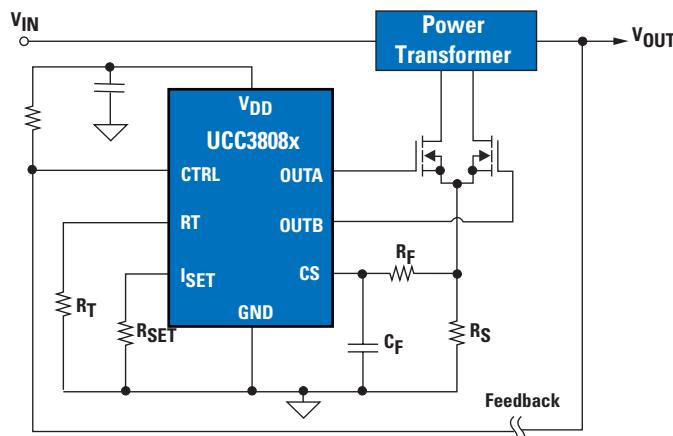
Applications include:
- High efficiency switch mode power supplies
- Telecom DC/DC converters
- Point-of-load or point-of-use power modules
- Low-cost push-pull, half bridge and full-bridge applications

Zero voltage transition PWM out-performs all others in high-efficiency, high-power switching

UCC3895

Get samples, datasheets, app reports and EVMs at:
www.ti.com/sc/device/UCC3895

- Programmable output turn-on delay
- Adaptive delay set
- Bi-directional oscillator synchronization
- Voltage mode, current mode, or average current mode control
- Programmable soft start/soft stop and chip disable
- Duty cycle control: 0% to 100%
- Error amplifier: 7 MHz
- Operation to 1 MHz
- Low current consumption: 5 mA typ. at 500 kHz
- Low start-up current: 150 µA typ.
- Packaging: Available in 20-pin wide-body SOIC, 20-pin DIP, 20-pin PLCC or 20-pin TSSOP
- Suggested resale price starts at $4.90 each in quantities of 1,000

UCC3895 Typical Application
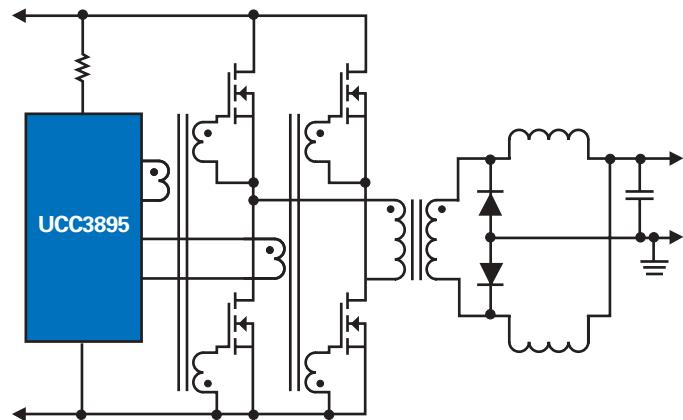
Applications include:
- High-power (>400 watts) bus power supplies where density and efficiency are important

MOSFET driver delivers 2% to 4% efficiency gain for your synchronous buck converters

UCC27221 and UCC27222

Get samples, datasheets, app reports and EVMs at:
www.ti.com/sc/device/partnumber
Replace partnumber in URL with UCC27221 or UCC27222

- Predictive Gate Drive™ maximizes efficiency by minimizing body diode conduction and reverse recovery losses
- Transparent synchronous buck gate driver operation from the single ended PWM input signal
- 12-V or 5-V input operation or 3.3-V input with availability of higher bias voltage
- ±3 A TrueDrive™ peak gate drive current at MOSFET Miller thresholds
- Automatically adjusts for changing operation conditions
- Inverting PWM input option (UCC27221)
- Extended operating temperature range of –40° C to +105° C
- Packaging: PowerPAD™ TSSOP-14 package for superior thermal dissipation
- Suggested resale price starts at $1.25 each in quantities of 1,000

UCC27222 Typical Application
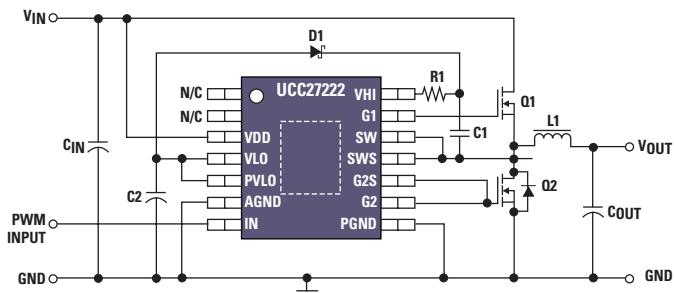
Applications include:
- Non-isolated, high-frequency, low-output voltage DC to DC converters
- High-current, point of load converters in distributed power systems
- CPU power, general computer, telecom, datacomm and merchant power applications

Single 9-A high speed low-side driver reduces space and design complexity

UCC37321 and UCC37322

Get samples, datasheets and app reports at:
www.ti.com/sc/device/partnumber
Replace partnumber in URL with UCC37321 or UCC37322

- High peak current drive capability of +/- 9 A at the Miller Plateau region using TrueDrive™ technology
- Efficient constant current sourcing using a unique bipolar and CMOS output stage
- Industry-standard pin-out with high performance with addition of ENABLE function
- TTL/CMOS compatible inputs independent of supply voltage
- 15-ns typical rise and 19-ns typical fall times with 10-nF load
- Typical propagation delay times of 25 ns with input falling, 35 ns with input rising
- Packaging: Available in 8-pin MSOP PowerPAD™, 8-pin DIP, and 8-pin SOIC
- Suggested resale price starts at $0.99 each in quantities of 1,000

UCC37321/2 Block Diagram
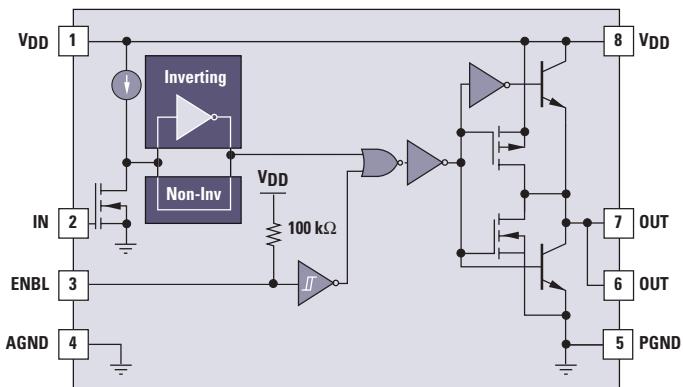
Applications include:
- Switch mode power supplies
- DC/DC converters
- Motor controllers
- Class D switching amplifiers
- Line drivers
- Pulse transformer drivers

MOSFET Drivers

Dual MOSFET gate driver ICs provide higher current and enhanced noise immunity

UCC37323/4/5

Get samples, datasheets, app reports and EVMs at:
www.ti.com/sc/device/partnumber
Replace partnumber in URL with UCC37323, UCC37324 or UCC37325

- ± 4 A TrueDrive™ peak gate drive current at MOSFET Miller Plateau
- Industry standard 8-pin pin-out
- 20-ns rise and 15 ns fall times into 1.8-nF load
- TTL/CMOS compatible inputs
- Thermally enhanced MSOP PowerPAD™ package
- Unique bipolar and CMOS output stage for efficient constant current sourcing
- Propagation delay times of 30 ns
- Packaging: Available in 8-pin MSOP, 8-pin SOIC, 8-pin DIP
- Suggested resale price starts at $0.99 each in quantities of 1,000

UCC37324 Typical Application
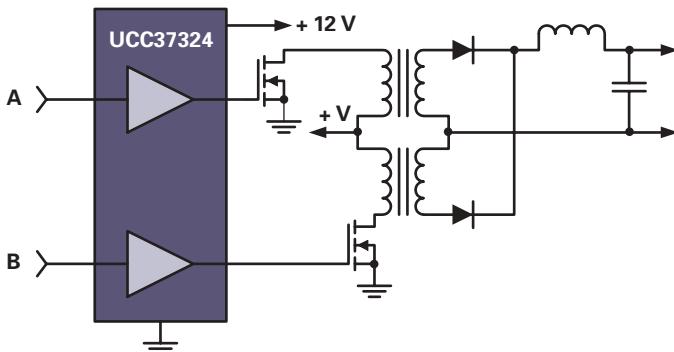
Applications include:
- Switch mode power supplies
- DC/DC converters
- Motor controllers
- Class D switching amplifiers
- Line drivers
- Pulse transformer drivers

Power Supply Support

High-performance load share controller provides increased functionality to parallel power supplies

UCC39002

Get samples, datasheets and app reports at:
www.ti.com/sc/device/UCC39002

- High accuracy, better than 1% current share error at full load
- High side or low side (GND reference) current-sense capability
- Ultra-low offset current sense amplifier using post package trimming
- Single wire load share bus
- Full scale adjustability
- Packaging: Available in 8-pin SOIC, 8-pin DIP and 8-pin MSOP
- Suggested resale price starts at $0.89 each in quantities of 1,000

UCC39002 Typical Application
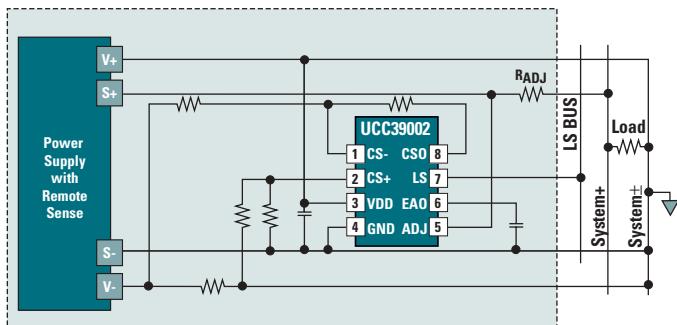
Applications include:
- Parallelable DC/DC modules
- Server, workstation and telecom systems
- High reliability systems
- N+1 redundant power systems
- High-current applications where off-the-shelf power supplies need to be paralleled

Power Factor Correction

Advanced PFC/PWM combination controllers

UCC2851x Family

Get samples, datasheets, and app reports at:
www.ti.com/sc/device/partnumber
Replace partnumber in URL with UCC28510, UCC28511, UCC28512, UCC28513, UCC28514, UCC28515, UCC28516 or UCC28517

- 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
- Multiple UVLO options optimize start-up and turn-off behaviors for differing biasing schemes and load transient requirements

PFC features include

- Transconductance amplifier, which enhances 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

- Packaging: Available in 20-pin SOIC and 20-pin DIP
- Suggested resale price starts at $1.69 each in quantities of 1,000

UCC2851x Typical Application
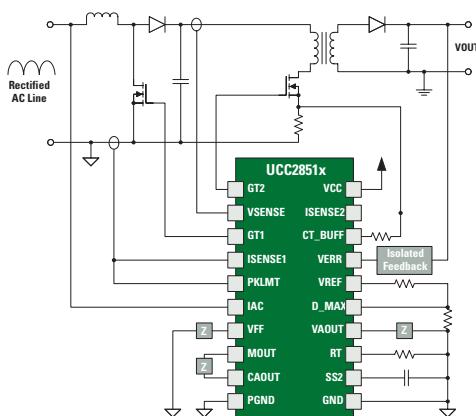
Applications include:

- Desktop and server computer power converters
- Distribution power system front ends

Low-to-medium power transition mode PFC controller for IEC1000-3-2 compliance applications

UCC38050

Get samples, datasheets, and app reports at:
www.ti.com/sc/device/UCC38050

- Boundry conduction mode controller for low cost PFC
- Slew rate comparator improves transient response time
- Zero power detect prevents OVP during light load conditions
- ± 750-mA peak gate drive current improves MOSFET switching efficiency
- Overvoltage protection, open-feedback protection and enable circuits minimize external components and lower implementation costs
- Packaging: Available in 8-pin SOIC and 8-pin DIP
- Suggested resale price starts at $0.65 each in quantities of 1,000

UCC38050 Typical Application
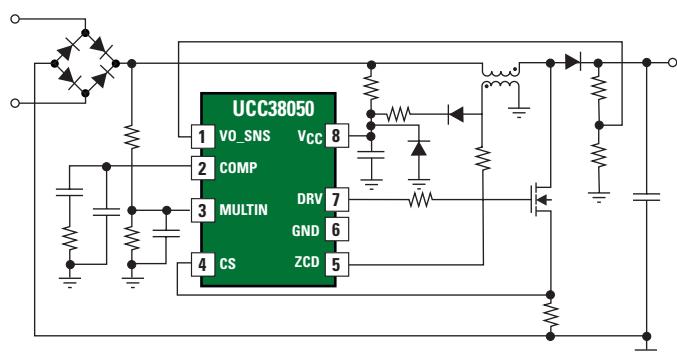
Applications include:

- Switch-mode power supplies for desktops, monitors, and set top boxes
- AC adapter front-end power supplies
- Electronic ballasts

DC/DC Controllers

Low-input (2.25 V to 5.5 V) highly efficient voltage mode synchronous buck controller

TPS40000/1/2/3

TPS40K™/SWIFT™ SOFTWARE TOOL

Get samples, datasheets, EVMs, app reports and software tools at:
www.ti.com/sc/device/partnumber
Replace partnumber in URL with TPS40000, TPS40001, TPS40002 or TPS40003

- 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™ technology N-channel MOSFET drivers for higher efficiency
- Externally adjustable soft-start and overcurrent limit
- Fixed-frequency, 300-kHz or 600-kHz, voltage-mode control
- Source-only current or source/sink current
- Package: 10-lead MSOP PowerPAD™ for higher performance
- Suggested resale price starts at $0.99 each in quantities of 1,000

Product	Description
TPS40000	300 kHz, source only
TPS40001	300 kHz, source/sink
TPS40002	600 kHz, source only
TPS40003	600 kHz, source/sink

TPS4000x Typical Application
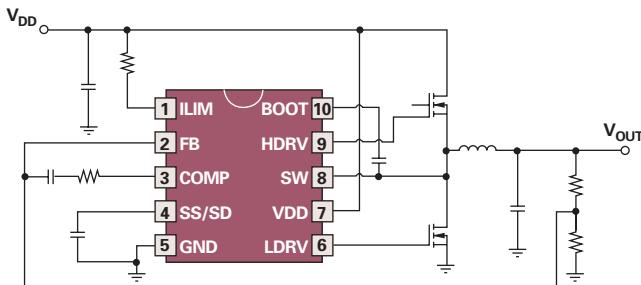
Applications include:
- Networking equipment
- Telecom equipment
- Base stations
- Servers
- DSP power

Wide-input voltage (8 V to 40 V) synchronous buck controller

TPS40050/51/53

Get samples, datasheets, EVMs and app reports at:
www.ti.com/sc/device/partnumber
Replace partnumber in URL with TPS40050, TPS40051 or TPS40053

- Operating input voltage: 8 V to 40 V
- Input voltage feedforward 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
- Programmable high-side current limit
- Programmable closed-loop soft start
- Internal diode for the high-side gate drive boost voltage
- Package: 16-pin TSSOP PowerPAD™
- Suggested resale price starts at $1.32 each in quantities of 1,000

Product	Description
TPS40050	Source only
TPS40051	Source/sink
TPS40053	Source/sink with V_{OUT} prebias

TPS40050 Typical Application
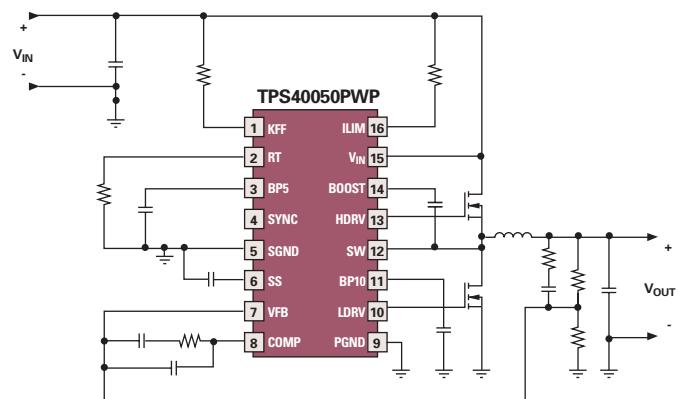
Applications include:
- Networking equipment
- Telecom equipment
- Base stations
- Servers

Selection Guides

MOSFET Drivers

Device	No. of Outputs	Output Configuration	Output Architecture	IO Source/Sink (A)	Rise/Fall Time (ns)	VCC Range (V)	Prop Delay (ns)	Input Thresholds	Enable	Dead Time Control	Protection Features[1]	Internal Regulator	Price[2]
TPS2811	2	Inverting	TrueDrive™	2.0/2.0	25/25	8 to 40	40	CMOS	No	Yes	—	Yes	0.83
TPS2812	2	Non-inverting	TrueDrive	2.0/2.0	25/25	8 to 40	40	CMOS	No	Yes	—	Yes	0.83
TPS2813	2	One inverting, one non-inverting	TrueDrive	2.0/2.0	25/25	4 to 14	40	CMOS	No	Yes	—	No	0.83
TPS2814	2	Dual 2-input AND; one inverting	TrueDrive	2.0/2.0	25/25	4 to 14	40	CMOS	No	Yes	—	No	0.83
TPS2815	2	2-input NAND	TrueDrive	2.0/2.0	25/25	4 to 14	40	CMOS	No	Yes	—	No	0.83
TPS2816	1	Inverting	TrueDrive	2.0/2.0	25/25	8 to 40	40	CMOS	No	Yes	—	Yes	0.58
TPS2817	1	Non-inverting	TrueDrive	2.0/2.0	25/25	8 to 40	40	CMOS	No	Yes	—	Yes	0.58
TPS2818	1	Inverting	TrueDrive	2.0/2.0	25/25	8 to 40	40	CMOS	No	Yes	—	Yes	0.58
TPS2819	1	Non-inverting	TrueDrive	2.0/2.0	25/25	8 to 40	40	CMOS	No	Yes	—	Yes	0.58
TPS2828	1	Inverting	TrueDrive	2.0/2.0	25/25	4 to 14	40	CMOS	No	Yes	—	No	0.58
TPS2829	1	Non-inverting	TrueDrive	2.0/2.0	25/25	4 to 14	40	CMOS	No	Yes	—	No	0.58
TPS2830	2	Non-inverting	TrueDrive	2.4/2.4	50/50	4.5 to 15	75	CMOS	Yes	Yes	OVP	No	1.23
TPS2831	2	Inverting	TrueDrive	2.4/2.4	50/50	4.5 to 15	75	CMOS	Yes	Yes	OVPC	No	1.23
TPS2832	2	Non-inverting	TrueDrive	2.4/2.4	50/50	4.5 to 15	75	CMOS	No	Yes	—	No	1.17
TPS2833	2	Inverting	TrueDrive	2.4/2.4	50/50	4.5 to 15	75	CMOS	No	Yes	—	No	1.17
TPS2834	2	Non-inverting	TrueDrive	2.4/2.4	30/30	4.5 to 15	70	TTL	Yes	Yes	OVP	No	1.23
TPS2835	2	Inverting	TrueDrive	2.4/2.4	30/30	4.5 to 15	70	TTL	Yes	Yes	OVP	No	1.23
TPS2836	2	Non-inverting	TrueDrive	2.4/2.4	30/30	4.5 to 15	70	TTL	No	Yes	—	No	1.17
TPS2837	2	Inverting	TrueDrive	2.4/2.4	30/30	4.5 to 15	70	TTL	No	Yes	—	No	1.17
UC3705	1	Non-inverting	Bipolar	1.5/1.5	40/40	5 to 40	100	TTL	No	No	TSD	No	2.17
UC3706	2	Configurable	Bipolar	1.5/1.5	40/40	5 to 40	100	TTL	No	No	TSD, OCP	No	2.17
UC3707	2	Non-inverting	Bipolar	1.5/1.5	40/40	5 to 40	100	TTL	No	No	TSD	No	2.40
UC3708	2	Non-inverting	Bipolar	3.0/3.0	25/25	5 to 35	25	TTL/CMOS	Yes	No	UVLO, TSD	No	2.94
UC3709	2	Inverting	Bipolar	1.5/1.5	40/40	5 to 40	25	TTL	No	No	TSD	No	2.75
UC3710	1	One inverting, one non-inverting	Bipolar	6/6	25/25	4.7 to 18	35	CMOS	No	No	TSD	No	3.04
UC3714	1	Non-inverting	Bipolar	0.5/1.0	30/25	7 to 20	50	TTL/PWM	Yes	Yes	—	No	0.85
UC3715	1	One inverting, one non-inverting	Bipolar	1.0/2.0	30/25	7 to 20	50	TTL/PWM	Yes	Yes	—	No	0.85
UCC27221	2	Inverting	TrueDrive	3.3/3.3	81/103	3.7 to 20	60	TTL	—	PGD[3]	—	Yes	1.25
UCC27222	2	Non-inverting	TrueDrive	3.3/3.3	81/103	3.7 to 20	60	TTL	—	PGD[3]	—	Yes	1.25
UCC37321	1	Inverting	TrueDrive	9/9	20/20	4 to 15	30	TTL/CMOS	Yes	No	—	No	0.99
UCC37322	1	Non-inverting	TrueDrive	9/9	20/20	4 to 15	30	TTL/CMOS	Yes	No	—	No	0.99
UCC37323	2	Inverting	TrueDrive	4.0/4.0	25/25	4 to 15	35	TTL/CMOS	No	No	—	No	0.99
UCC37324	2	Non-inverting	TrueDrive	4.0/4.0	25/25	4 to 15	35	TTL/CMOS	No	No	—	No	0.99
UCC37325	2	One inverting, one non-inverting	TrueDrive	4.0/4.0	25/25	4 to 15	35	TTL/CMOS	No	No	—	No	0.99

[1]TSD—Thermal Shutdown; OVP—Over-Voltage Protection; UVLO—Under-Voltage Lockout.; OCP—Over-Current Protection; OVPC—Over-Voltage Protection Current

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

New devices indicated in red

Power Factor Correction Controllers (PFC)

Device	Description	Control Method	Typical Power Level	Soft Switching	Max Frequency (kHz)	Start-up Current (mA)	UVLO Thresholds (V)	PWM Programmable Max Duty Cycle	PWM Frequency Option	OVP	Price[1]
UC3852	Transition Mode PFC Controller	CRM[2]	<150 W	—	Variable	1	16.3/11.5	—	—	No	1.61
UC3853	8-Pin PFC Controller	ACM[3]	75 W to 300 W	—	125	0.25	11.5/9.5	—	—	Yes	0.99
UC3854	PFC Controller	ACM[3]	200 W to 2 kW+	—	200	1.5	16/10	—	—	No	0.99
UC3854A/B	Improved PFC Controller	ACM[3]	200 W to 2 kW+	—	200	0.3	16/10 ('54A) 10.5/10 ('54B)	—	—	No	1.25
UC3855A/B	High Performance Soft Switching PFC Controller	ACM[3]	400 W to 2 kW+	ZVT[4]	500	0.15	16/10 ('55A) 10.5/10 ('55B)	—	—	Yes	5.25
UCC38050	Transition Mode PFC Controller	CRM[2]	50 W to 400 W		Variable	0.75	16/10	—	—	Yes	0.65
UCC3817/18	BiCMOS PFC Controller	ACM[3]	75 W to 2 kW+	—	400	0.1	16/10 (3817) 10.5/10 (3818)	—	—	Yes	1.07
UCC3819	Tracking Boost PFC Controller	ACM[3]	75 W to 2 kW+	—	400	0.1	10.2/9.7	—	—	Yes	1.07
UCC38500/01/02/03	PFC+PWM Combo Controller	ACM[3]	75 W to 1 kW+	—	400	0.1	16/10 ('500, '502) 10.5/10 ('501, '503)	No	1x	Yes	1.45
UCC28510/11/12/13	Advanced PFC+PWM Combo Controller	ACM[3]	75 W to 1 kW+	—	600	0.1	16.6/9.3 ('510, '512) 10.2/9.7 ('511, '513)	Yes; Up to 90%	1x	Yes	1.69
UCC28514/15/16/17	Advanced PFC+PWM Combo Controller	ACM[3]	75 W to 1 kW+	—	600	0.1	16.6/9.3 ('514, '516) 10.2/9.7 ('515, '517)	Yes; Up to 90%	2x	Yes	1.69

[1] Suggested resale price in U.S. dollars in quantities of 1,000   [2] Critical conduction Mode   [3] Average Current Mode   [4] Zero Voltage Transition

PWM Power Supply Controllers (single output topologies)

Device	Typical Power Level (W)	Max Practical Frequency	Start-Up Current	Operating Current	Supply Voltage (V)	UVLO: On (V)	UVLO: Off (V)	Vref (V)	Vref Tol. (%)	Max Duty Cycle (%)	Soft Start	E/A	Shutdown	Output Voltage Feed-forward	Internal Drive (Sink/Source) (A)	Leading Edge Blanking	Available Packages	Price[1]
Voltage Mode Controllers																		
UCC35701	25 to 250	700 kHz	130 µA	750 µA	9.0 to 15	13.0	0.9	5	1.5	Prog. VS Clamp	Yes	No	Yes	Yes	1.2/1.2	No	TSSOP14, SOIC14, PDIP14	1.92
UCC35702	25 to 250	700 kHz	130 µA	750 µA	8.8 to 15	9.6	8.8	5	1.5	Prog. VS Clamp	Yes	No	Yes	Yes	1.2/1.2	No	TSSOP14, SOIC14, PDIP14	1.93
UCC35705	25 to 250	4 MHz	50 µA	2.5 mA	8.2 to 15	8.8	8.2	—	—	93	No	No	No	No	0.1/0.1	No	SOIC8, PDIP8, MSOP8	0.99
UCC35706	25 to 250	4 MHz	50 µA	2.5 mA	8.0 to 15	12	8	—	—	93	No	No	No	No	0.1/0.1	No	SOIC8, PDIP8, MSOP8	0.99
UCC3581	5 to 75	100 kHz	85 µA	300 µA	6.8 to 15	7.3	6.8	4	1.5	Prog.	Yes	No	Yes	No	1/1	No	SOIC14, PDIP14	1.61
UCC3960	25 to 250	400 kHz	150 µA	2.3 mA	8.0 to 19	10	8	—	—	72	Yes	No	No	No	0.1/0.1	No	SOIC8, PDIP8	1.19
UCC3961	25 to 250	400 kHz	150 µA	2.3 mA	8.0 to 19	10	8	—	—	72	Yes	No	No	No	0.1/0.1	No	SOIC14, PDIP14	1.29
Peak Current Mode Controllers																		
UCC3800 thru UCC3805	10 to 200	1 MHz	100 µA	500 µA	7.2 to 15 (00) 9.4 to 15 (01) 12.5 to 15 (02,04) 4.1 to 15 (03, 05)	7.2 (00) 9.4 (01) 12.5 (02, 04) 4.1 (03, 05)	6.9 (00) 7.4 (01) 8.3 (02, 04) 3.6 (03, 05)	5	1.5	100 (00, 02, 03) 50 (01, 04, 05)	Yes	Yes	No	No	1/1	100 ns	SOIC8, PDIP8 TSSOP8	1.22
UCC3807-1 thru -3	10 to 200	1 MHz	100 µA	1.3 mA	6.9 to 15 (-1) 8.3 to 15 (-2) 4.1 to 15 (-3)	7.2 (-1) 12.5 (-2) 4.3 (-3)	6.9 (-1) 8.3 (-2) 4.1 (-3)	2 V (Int)	—	Prog.	Yes	Yes	No	No	1/1	100 ns	SOIC8, PDIP8 MSOP8, TSSOP8	1.76
UCC3809-1 and -2	10 to 200	1 MHz	50 µA	500 µA	8 to 19	10 (-1) 15 (-2)	8.0	5	5.0	Yes	Yes	No	Yes	Yes	0.8/0.4	No	SOIC8	0.79
UCC3813-0 thru -5	10 to 200	1 MHz	100 µA	500 µA	7.2 to 15 (-1) 9.4 to 15 (-1) 12.5 to 15 (-2, -4) 4.1 to 15 (-3, -5)	7.2 (00) 9.4 (01) 12.5 (02, 04) 4.1 (03, 05)	6.9 (00) 7.4 (01) 8.3 (02, 04) 3.6 (03, 05)	5	2.0	100 (-0, -2, -3) 50 (-1, -4, -5)	Yes	Yes	No	No	1/1	100 ns	TSSOP8, SOIC8, PDIP8	0.74
UC3842 thru UC3845	30 to 350	500 kHz	0.5 mA	11 mA	10 to 30 (42, 44) 7.6 to 30 (43, 45)	16 (42, 43) 8.4 (43, 45)	10 (42, 44) 7.6 (43, 45)	5	1.5	100 (42, 43) 50 (44, 45)	No	Yes	No	Yes	1/1	No	SOIC8, SOIC14, PDIP8	0.73
UC3842A thru UC3845A	30 to 350	500 kHz	0.3 mA	11 mA	10 to 30 (42A, 44A) 7.9 to 30 (43A, 45A)	16 (42A, 43A) 8.4 (43A, 45A)	10 (42A, 44A) 7.6 (43A, 45A)	5	1.5	100 (42, 43) 50 (44, 45)	No	Yes	No	Yes	1/1	No	SOIC8, SOIC14, PDIP8	0.72
UCC38C40 thru UCC38C45	10 to 250	1 MHz	50 µA	2.3 mA	6.6 to 20 (40, 41) 9 to 20 (42, 44) 7.6 to 20 (43, 45)	7.0 (40, 41) 14.5 (42, 44) 8.4 (43, 45)	6.6 (40, 41) 9.0 (42, 44) 7.6 (43, 45)	5	2	100 (40, 42, 43) 50 (41, 44, 45)	No	Yes	No	Yes	1/1	No	SOIC8, PDIP8, MSOP8	0.89
UC3849	50 to 250	1 MHz	—	21	8.4 to 20	8.4	8	5	2.0	Prog	Yes	Yes	No	No	1/1	Yes	DIL24, SOIC24, PLCC28	2.90
UCC3884	50 to 250	1 MHz	200 µA	5	8.9 to 15	8.9	8.3	5	2.5	Yes	Yes	Yes	No	Yes	0.5/1	Yes	DIL16, SOIC16, PLCC20	1.52

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

New devices indicated in red

PWM Power Supply Controllers (multiple output topologies)

Device	Typical Power Level	Max Practical Frequency	Start-Up Current	Operating Current (mA)	Supply Voltage (V)	UVLO: On/Off (V)	Vref (V)	Vref Tol. (%)	Max Duty Cycle	Soft Start	E/A	Shutdown Pin	Voltage Feed-forward	Output Drive (Sink/Source) (A)	Sync. Pin	Available Packages	Price[1]
Current Mode Controllers																	
UC3823	50 to 750 W	1 MHz	1.1 mA	22	9 to 30	9.2/8.4	5.1	1.0	Prog.	Yes	Yes	No	No	1.5/1.5	Yes	DIL16, SOIC16, PLCC20	1.50
UC3823A/B	50 to 750 W	1 MHz	100 µA	28	9 to 22	16/10 9.2/8.4	5.1	1.5	Prog.	Yes	Yes	No	No	2/2	Yes	DIL16, SOIC16, PLCC20	4.65
UC3825	50 to 750 W	1 MHz	1.1 mA	22	9 to 30	9.2/8.4	5.1	1.0	Prog.	Yes	Yes	No	No	1.5/1.5	Yes	DIL16, SOIC16, PLCC20	1.50
UC3825A/B	50 to 750 W	1 MHz	100 µA	28	9 to 22	16/10 9.2/8.4	5.1	1.5	Prog.	Yes	Yes	No	No	2A/2	Yes	DIL16, SOIC16, PLCC20	2.50
UC3846	50 to 750 W	500 kHz	1.5 mA	17	8 to 40	7.7/7	5	2.0	Prog.	Yes	Yes	No	No	0.5/0.5	Yes	DIL16, SOIC16, PLCC20	1.50
UCC3806	50 to 750 W	350 kHz	100 µA	1.4	7 to 15	7.5/6.7	5.1	3.0	Prog.	Yes	Yes	Yes	No	0.5/0.5	Yes	DIL16, SOIC16, PLCC20	3.88
UCC3808/A	50 to 500 W	1 MHz	130 µA	1	4.3 to 15	12.5/8.3 4.3/4.1	—	—	Prog.	Yes	Yes	Yes	No	0.5/0.5	No	DIL8, SOIC8, TSSOP8	1.20
UCC38083-6	50 to 500 W	1 MHz	130 µA	20	8.3 to 15	12.5/8.3	5	2	50%	Yes	No	No	No	1.0/0.5	No	SOIC8, DIL8, TSSOP8	1.20
UCC3810	50 to 500 W	1 MHz	150 µA	2	8.3 to 11	11.3/8.3	5	2	50%	No	Yes	Yes	Yes	1/1	Yes	DIL16, SOIC16	1.72
Voltage Mode Controllers																	
SG2524/3524	—	722 kHz	—	—	8 to 40	—	5	4	45%	No	Yes	Yes	No	0.1/0.1	Yes	SOIC16, DIP16, SOP16	0.63
TL494	—	300 kHz	—	7.5	7 to 40	—	5	5	45%	No	Yes	No	No	0.2/0.2	Yes	SOIC16, TSSOP16, DIP16, SOP16	0.26
TL594	—	300 kHz	—	12.4	7 to 40	6.1/6	5	1	45%	No	Yes	No	No	0.2/0.2	Yes	SOIC16, TSSOP16, DIP16, SOP16	0.27
TL598	—	300 kHz	—	15	7 to 40	6.1/6	5	1	45%	No	Yes	No	No	0.2/0.2	Yes	SOIC16, DIP16	0.72
UC3524A	50 to 500 W	250 kHz	4 mA	5	8 to 40	7.5/7	5	2.0	Prog.	Yes	Yes	Yes	No	0.2/0.2	Yes	DIL16, SOIC16, PLCC20	1.61
UC3525A/B	50 to 500 W	250 kHz	—	14	8 to 40	7/7	5	2.0	Prog.	Yes	Yes	Yes	No	0.2/0.2	Yes	DIL16, SOIC16, PLCC20	0.99
UC3526A	50 to 500 W	250 kHz	—	14	8 to 35	—	5.1	1.3	Prog.	Yes	Yes	Yes	No	0.2/0.2	Yes	DIL18, SOIC18, PLCC20	2.87
UC3823	50 to 750 W	1 MHz	1.1 mA	22	9 to 30	9.2/8.4	5.1	1.0	Prog.	Yes	Yes	No	No	1.5/1.5	Yes	DIL16, SOIC16, PLCC20	1.50
UC3823A/B	50 to 750 W	1 MHz	100 µA	28	9 to 22	16/10	5.1	1.5	Prog.	Yes	Yes	No	No	2/2	Yes	DIL16, SOIC16, PLCC20	4.65
UC3824	50 to 250 W	1 MHz	1.1 mA	22	9 to 30	9.2/8.4	5.1	1.0	Prog.	Yes	Yes	No	No	1.5/1.5	Yes	DIL16, SOIC16, PLCC20	4.26
UC3825	50 to 750 W	1 MHz	1.1 mA	22	9 to 30	9.2/8.4	5.1	1.0	Prog.	Yes	Yes	No	No	1.5/1.5	Yes	DIL16, SOIC16, PLCC20	1.50
UC3825A/B	50 to 750 W	1 MHz	100 µA	28	9 to 22	16/10 9.2/8.4	5.1	1.5	Prog.	Yes	Yes	No	No	2/2	Yes	DIL16, SOIC16, PLCC20	2.50
Soft Switching Controllers																	
UC3875-8	200 W to 2 kW	1+ MHz	150 µA	45	10.7 to 20	10.7/9.3 15/9	5	2.0	Prog.	Yes	Yes	No	No	Four @ 2/2	Yes	DIL20, SOIC20, PLCC28	4.60
UC3879	200 W to 2 kW	500 kHz	150 µA	27	11 to 20	15.2/9 10.7/ 9	5	2.5	Prog.	Yes	Yes	No	No	Four @ 0.1/0.1	Yes	DIL20, SOIC20, PLCC28	3.50
UCC3580-1/-2	50 to 500 W	500 kHz	100 µA	1.5	7 to 15	15/8.5 9/8.5	5	1.0	Prog.	Yes	Yes	Yes	Yes	0.5/1, 0.3/0.3	No	DIL16, SOIC16, PLCC20	2.25
UCC3895	200 W to 2 kW	1 MHz	150 µA	5	11 to 17	11/9	5	3.0	Yes	Yes	Yes	Yes	No	Four @ 0.1/0.1	Yes	DIL20, SOIC20, PLCC20	4.09

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

New devices indicated in red

Evaluation Modules

To order any of the following evaluation modules (EVMs), please call the order desk, **1-800-477-8924, ext. 5800**, in North America. To order from other regions, please contact the TI Product Information Center (see listings on page 15) or local TI distributor.

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UCC3809EVM	10-Watt Flyback Converter Utilizing the UCC3809	$49
UCC3889EVM	Off-Line Low-Voltage Power Supply Evaluation Module	$49

Application Reports

To access any of the following application reports, type the URL **www-s.ti.com/sc/techlit/litnumber** and replace **litnumber** with the number in red.

UCC27221/2	Predictive Gate Drive™ Boosts Synchronous DC/DC Power Converter Efficiency	SLUA281
UCC27221/2	UCC27221/2 Predictive Gate Drive™ Frequently Asked Questions	SLUA280
UCC27221/2	Predictive Gate Drive™ Frequently Asked Questions	SLUA285
UCC38050	MathCAD application design tool for use with the UCC38050 *(Note: this is a compressed .zip file)*	SLVC018
UCC38050	UCC38050 100-W Critical Conduction Power Factor Corrected (PFC) Preregulator	SLUU138
UCC28517	Prototype Reference Design Module	SLUU117
UCC3819	UCC3819 250-W Power Factor Corrected (PFC) Boost Follower PreRegulator Design	SLUA269
UCC3817	Synchronizing a PFC Controller from a Downstream Converter's Gate Drive	SLUA245
UCC3809	Comparing the UC3842, UCC3802, and UCC3809 Primary Side PWM Controllers	SLUA213
UCC3802	Design Considerations for Transitioning from the UC3842 to the New UCC3802 Family	SLUA084
UCC3806	UC3846, UC3856 and UCC3806 Push Pull PWM Current Mode Control ICs	SLUA178
UCC3806	Programming the UCC3806 Features	SLUA183
UCC3809	Programming the UCC3809 for 90% Maximum Duty Cycle Clamp	SLUA251
UCC3843A	A Revolutionary Power Management Solution for Highly Efficient, Multiple Output Applications	SLUA255
UCC38C42	The UCC38C42 Family of High-Speed, BiCMOS Current Mode PWM Controllers	SLUA257
UCC38C44	UCC38C44 12-V Isolated Bias Supply	SLUA274
UCC3895	UCC3895 OUTC/OUTD Asymmetric Duty Cycle Operation	SLUA275
UCC38C42	UCC38C42 25-Watt Self-Resonant Reset Forward Converter	SLUA276
UCC27221	Low Voltage Feedback in PWM Applications	SLUA286
UCC3895	Control Driven Synchronous Rectifiers in Phase Shifted Full Bridge Converters	SLUA287
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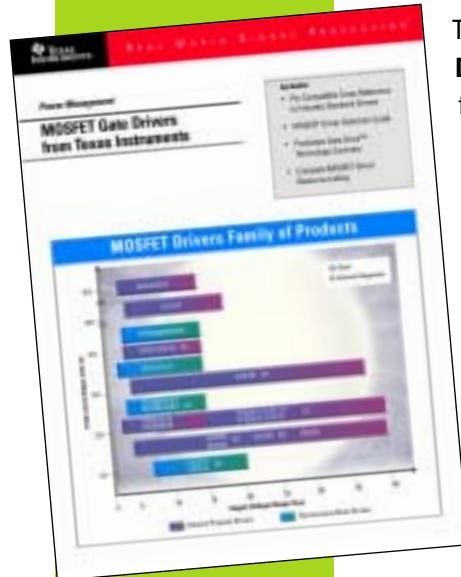
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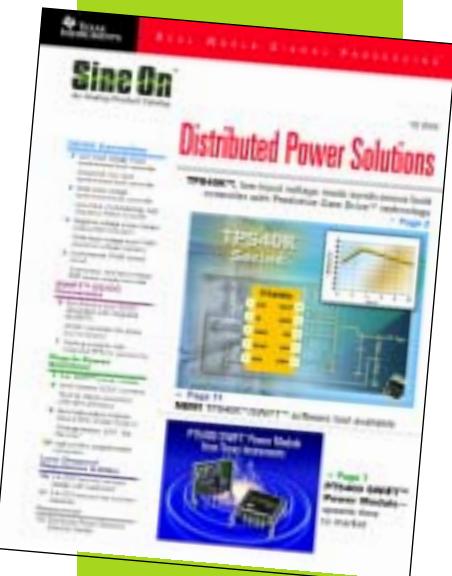
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