Power ICs Article Archive (By Issue)

This document is a list of the power IC articles published in the How2Power Today newsletter. Products listed here include:

- Power supply controllers
- Gate drivers
- Linear regulators
- Switching regulators and
- Point-of-load dc-dc converters
- Battery charger and battery management ICs
- ORing controllers
- LED drivers
- Wireless charging ICs

While most are monolithic semiconductor devices, some may be multi-chip modules or modules that copackage chips and magnetics or passives—the commonality is that all these products are housed in IC style packages. Integrated circuits using hybrid construction or open-frame PCB construction are generally not included here.

Products are listed here using the following format:

**Issue date:**

Article title, Part number/product name

For more details...(link to article)

For articles on discrete power semiconductors and modules, see the Discrete Power Semis and Modules Archive. For more on point of-load regulators and dc-dc converters, including hybrid and pc-board-based devices, see the Board-Mounted Power Converter Article Archive.
16-Cell Li-ion Monitor Eases Battery Management For Hybrids, EVs And Grid Storage, Texas Instruments' bq76PL455A-Q1 battery monitor and protector

Monolithic Sync Buck Regulator Operates Efficiently Up to 18 V, Alpha and Omega Semiconductor’s AOZ3101 synchronous buck regulator.

Tiny Low-Side Drivers Ease Power System Design, Infineon Technologies’ IR44252L, IR44272L, and IR44273L low-side drivers

Power Management ICs Are Optimized For Intel’s Skylake Core Processor, Rohm’s BD99991GW and BD99992GW power management ICs

Reference Design For Medium-Power Wireless Power Receiver Is Qi-Certified, Reference design using the BD57015GW wireless power receiver IC

Isolated Gate Drivers Offer High Noise Immunity, Enabling Fast Switching, Silicon Labs’Si827x ISOdriver family of isolated gate drivers

Highly Integrated Multi-Phase Boost Controllers Simplify Automotive Designs, Intersil’s ISL78227 and ISL78229 two-phase synchronous boost controllers

Controllers Feature Ultra-Stable On-Resistance For Power Rail Switching, Silego Technology’s SLG59H100xV integrated power controllers

GaN Power ICs Integrate Power FET With Gate Drive And Logic, Navitas Semiconductor’s 650-V GaN Power ICs
June 2016:

**POL Modules Offer High Density For Battery-Powered Industrial Applications**, Intersil’s ISL8205M and ISL8202M stepdown power modules

January 2015:

**15-W Qi-compliant Wireless Charging Solution Charges Larger Devices Faster**, Freescale Semiconductor’s WPR1516 and MWCT1012 wireless charging chips

February 2015:

**Digital Controllers Support VR12/12.5 And PMBus**, Powervation’s PV3103, PV3104, and PV3202 digital dc-dc controllers

March 2015:

**GaN FETs + Driver Module Lowers Barriers To GaN-Based Power Design**, Texas Instruments’ LMG5200 integrated half-bridge GaN FET power-stage

**200-mA Linear Regulator Pushes Operating Temperature To 175°C**, CISSOID’s CMT-ANTARES 5-V linear regulator

April 2015:

**Top Five Products And Demos Seen at APEC 2015**
- Altera’s Enpirion EM1130A 30-A Point-Of-Load Converter
- Intersil’s ISL8272M 50-A Point-Of-Load Converter

May 2015:

**Power Op Amp Improves Circuit Protection, Lowers Quiescent Current For Piezo Transducers**, Apex Microtechnology’s MP118FD power operational amplifier
DSCs Offer Lower Latency, Live Update And More For Digital Power Supply Designs, Microchip Technology’s dsPIC33EP “GS” family of digital signal controllers

June 2015:
Controllers Simplify Digital Power Conversion And Enhance Performance, STMicroelectronics’ STNRG digital-controller family
IC Speeds Charging Of Li-ion Batteries, Texas Instruments’ bq2589x single-cell Li-on charger

July 2015:
New Type Of Power Module Offers Greater Integration, Path To Cost Reduction, Maxim Integrated’s Himalaya power modules
Hermetically Sealed Linear Regulators Offer Dramatically Lower Cost And A Range Of Grades, Datel’s LVR-7815 linear voltage regulators
700-V Gate Driver ICs Increase System Reliability And Shrink Board Space, Infineon Technologies’ IR7xxxS series of 700-V HVICs

August 2015:
Integrated Power Switch Features Reverse-Current Blocking, Silego Technology’s SLG59M1603V integrated power switch
Controller IC Eases Application Of SiC MOSFETs In AC-DC Power Supplies, Rohm’s BD7682FJ-LB ac-dc converter control IC
September 2015:

**IC Extends Life Of Multi-Cell Li-ion Batteries**, Intersil’s ISL94203 Li-ion battery monitor

For more details...

October 2015:

**Gate Driver Shrinks Delay And Board Space For Server Power Supplies**, Texas Instruments’ UCC27714 high-speed, low-side gate driver

For more details...

**Charger Interface IC Eases Implementation Of Quick Charge 3.0 Protocol**, Power Integrations’ CHY103D charger-interface IC

For more details...

November 2015:

**Bus Converter Modules Are Non-Isolated And Bidirectional**, Vicor’s non-isolated, bidirectional bus converter modules (NBMs)

For more details...

**PWM Controllers Feature 40-V Operation And PMBus Interface**, Microchip Technology’s MCP19118 and MCP19119 digitally enhanced power analog controllers

For more details...

**Wireless Charging Solution Is Adopted By Tier I Computer Makers**, Semtech’s TS80K wireless charging platform

For more details...

December 2015:

**Smart Diode Controller Delivers Reverse Polarity Protection With No IQ**, Texas Instruments’ LM74610-Q1 smart diode controller

For more details...

**Medium-Power Wireless Transmitter Reference Design Is Certified To Qi V 1.2**, Rohm’s wireless power reference design

For more details...

**15-W Wireless Power Receiver IC Complies With Qi V1.2**, Toshiba America Electronic Components’ TC7766WBG wireless power receiver
January 2014:

380-V Input Bus Converter Raises Efficiency And Power Density To Benefit HVDC Power Distribution, Vicor’s VI Chip bus converter module built in the ChiP platform

February 2014:

Controller Cuts Cost For Qi-compliant Wireless Chargers, Texas Instruments’ bq500412 Qi-compliant wireless power transmitter manager

750-mA POL Requires Just 30-mm² Of Board Space, Texas Instruments’ LMR22007 750-mA switching regulator

High-Temperature, High-Voltage DC-DC Converters Reduce Design Time For Down-Hole Applications, International Rectifier’s HTH27022S and HTM27092S dc-dc converters

March 2014:

PMIC Reduces Board Space, Noise, And Power Consumption In Automotive Instrument Clusters, Maxim Integrated’s MAX16993 automotive power management IC

VTM Current Multiplier In New ChiP Packaging Will Support VR12.5 Applications, Vicor’s VRM solution compliant with Intel’s VR12.5 voltage regulation specification

Tiny Stepdown Regulators Deliver Extended Voltage And Temp Ranges, ROHM Semiconductor’s BD9G101G dc-dc converter IC and BU90002GWZ 6-MHz synchronous stepdown regulator IC
April 2014:

**PWM Controllers And Modules Offer Optimized Power Solutions For VR12.5,**
International Rectifier’s CHiL digital controllers and PowIRstage devices

For more details…

**Flyback ICs Limit Standby Power to <30-mW For Offline Supplies,**
Texas Instruments’ UCC28910 700-V flyback switcher and UCC28630 PWM controller

For more details…

**Driver Stage Tailors Power Conversion Solution To High-Performance FPGAs,**
Altera’s ET4040 monolithic 40-A driver plus synchronous MOSFET powertrain

For more details…

May 2014:

**Gate Drivers For Automotive Applications Feature Fast Propagation Delays,**
Texas Instruments’ UCC275xx-Q1 family of single- and dual-channel gate drivers

For more details…

July 2014:

**MCUs With High-Res Timer Ease Transition To Digital Power Control,**
STMicroelectronics’ STM32F334 Digital Power microcontrollers

For more details…

**High-Rel Dual Output DC-DC Converters Target Satellite Power Systems,**
International Rectifier’s D series rad-tolerant two output dc-dc converters

For more details…

August 2014:

**Highly Integrated Digital Power Monitors Work With Supplies Up To 60 V,**
Intersil’s ISL2802x family of digital power monitors

For more details…

**DC-DC Converters Push Limits On Power Density For A Range Of Applications,**
Vicor’s ChiP DCM and HD Brick dc-dc converters

For more details…
September 2014:

**Tiny Li-ion Charger Targets Wearable Applications**, Texas Instruments’ bq25100 single-cell Li-ion charger

**Switching Regulators Offer High Operating Voltage, Wide Temp Range, Small Size**, ROHM Semiconductor’s BD9G101G and BU9000xGWZ switching regulators

For more details...

November 2014:

**PMIC Keeps Automotive MCUs Running Reliably Under Start-Stop Operation**, Rohm’s BD39001EKV-C power management IC

**PowerSoCs Are Automotive Qualified And Ready To Power FPGAs**, Altera’s nine new Altera Enpirion AEC-Q100 qualified power system-on-chip (PowerSoC) devices from the EP53xx and EN63xx families

For more details...

December 2014:

**Wireless Power Chipset Offers 10-W Solution**, Texas Instruments’ bq51025 wireless charging receiver and bq500215 wireless power transmitter controller

For more details...

January 2013:

**High-Efficiency Stepper Motor Driver IC Targets Office Automation Equipment**, ON Semiconductor’s LV8702V stepper-motor-driver IC

**Low-Power Buck Converter Aims To Accelerate Energy Harvesting Designs**, Texas Instruments’ TPS62736 Nano-power Buck Converter

For more details...

February 2013:

**Single-Stage LED Driver Cuts BOM Cost in Price-Sensitive Retrofit Bulbs**, iWatt’s iW3626 single-stage LED driver

For more details...
Power ICs Article Archive (By Issue)

Robust Angular Position Sensor Finds Use In Transmission Control Unit, Austriamicrosystems’ AS5134 angular position sensor

Hybrid Power Controller Chip Delivers Benefits of Analog + Digital Control, Microchip Technology’s MCP19111 digitally enhanced power analog controller with integrated synchronous driver

March 2013:

Gate Drivers Are Optimized For IGBTs And SiC FETs, Texas Instruments’ UCC27531 and UCC27532 single-channel output stage gate drivers

Universal Lighting Controller Promises To Enhance Many Applications, STMicroelectronics’ STLUX385 digital controller for lighting and power supply applications

Upgraded Design Tool, New Firmware Enhance Capabilities Of Digital Controller, Powervation’s PowerSMART design tool and firmware for the PV3012

Synchronous Rectifier Controller With Sync Function Simplifies SMPS Designs, International Rectifier’s IR1169 high-speed synchronous rectifier controller

April 2013:

User-Defined Power Modules Take Configurability To A New Level, Vicor’s User-Defined, VI Chip PRM Modules

Smart Bypass Diode Lowers Power Dissipation, Texas Instruments’ SM74611 smart bypass diode

Buck Converter Delivers 25 A From A 5-mm x 6-mm PQFN, International Rectifier’s IR3847 Gen3 SupIRBuck voltage regulator
May 2013:

**Single-Stage LED Drivers Deliver High Dimmer Compatibility At Competitive BOM Cost**, Cirrus Logic’s CS1615/16 single-stage LED driver ICs

**Fast-Switching Solid-State Relays Consume Ultra-Low Power**, Electronic Design & Research’s µR2M and µD2M series solid-state relays

June 2013:

**PMIC Reduces Thermal Stress On Application Processors In Mobil Devices**, ams’ AS3721 PMIC and AS3729 point-of-load power stage

**Single-Stage LED Drivers Enable Wide Bulb Dimming Range With Lower BOM Cost**, iWatt’s iW3606 and iW3608 dimmable single-stage, LED drivers

July 2013:

**Low-Cost Gate Drivers Handle Wide Operating Voltage Range**, IXYS Integrated Circuits Division’s IX4426, IX4427, and IX4428 dual low-side gate driver ICs

**Wide-Input Linear Regulator Works At Very High Temperatures**, CISSOID’s CHT-RIGEL adjustable linear regulator

**Class D Amplifier Improves Efficiency For Driving Brush-Type Motors**, Apex Microtechnology’s SA160DP H-Bridge motor driver/amplifier

**DC-DC Converters Meet MIL-HDBK-1547 And Aerospace TOR Requirements**, VPT’s SVR series rad-hard dc-dc converters and EMI filters for space
August 2013:

**Controller In SOT-23 Shrinks Boost PFC Circuits,** International Rectifier’s IRS2505L PFC boost IC

**Versatile LED Driver Features Adjustable Frequency And Low-Side Current Sense,** Texas Instruments’ TPS92690 n-channel controller for dimmable LED drives

October 2013:

**Current-Sharing LDOs Double Current Capability For Harsh Environments,** Texas Instruments’ TPS7H1101-SP and the TPS7H1201-HT LDOs

**Digital PWM Controller Cuts BOM Cost, Standby Power In Smartphones,** Dialog Semiconductor’s iW1679 PWM controller

November 2013:

**Envelope Tracking Power Chips Boost Efficiency In Smartphones,** Texas Instruments’ LM3290 buck-boost converter and LM3291 linear amplifier

**Buck Controller Features Inductor DCR-Based Overcurrent Protection,** Texas Instruments’ LM27403 synchronous buck controller

December 2013:

**HV Amplifier IC Slashes Noise For Improved Accuracy In Positioning Systems,** Apex Microtechnology’s PA44X 350-V amplifier ICs

**PFC Controller Extends Range On Switching Frequency, Lowers Losses In Shunt Resistor,** Texas Instruments’ UCC28180 CCM PFC controller
January 2012:

**Energy Measurement ICs Optimize Cost And Performance For Smart Meters,** Cirrus Logics’ CS5484/80/90 analog front end ICs for energy measurement

For more details...

**Gate-Driver IC Simplifies Power Train Design In Hybrid And Electric Vehicles,** International Rectifier’s AUIR0815S automotive-qualified gate-driver IC

For more details...

February 2012:

**Gate Drivers Work With Silicon Or GaN FETs,** Texas Instruments’ LM5114 low-side gate driver

For more details...

**Digital PWM Controllers Deliver Small, Efficient Multiphase Solutions,** International Rectifier’s third-generation family of CHiL digital PWM controllers

For more details...

**Digital Controller Provides Flexibility And Performance For Isolated Supplies,** Texas Instruments’ UCD3138 digital controller for isolated power supplies

For more details...

**Hot Swap Controller Emulates MOSFET Thermal Performance,** The Picor Cool-Swap PI2211 hot swap controller and circuit breaker from Vicor

For more details...

**DC-DC Converters Deliver 334 W/in³ For Industrial And Military Applications,** The Picor Cool-Power PI3106 isolated dc-dc converter from Vicor

For more details...

**Full-Bridge Drivers Feature Braking Control And Extreme Speed,** Electronic Design & Research’s high-speed full-bridge isolated (HS-FBI) H7GvvDaa/e drivers

For more details...

March 2012:

**Digital LED Controller Is Compatible With Nearly All TRIAC Dimmers,** Cirrus Logics’ CS161X digital LED controller

For more details...
Wireless Power Chipset Shrinks Footprint And Lowers Cost, Integrated Device Technology’s wireless power transmitter and receiver ICs

Adjustable 500-mA LDO Operates To 225°C, Cissoid’s CHT-Vega 225°C Adjustable 500-mA LDO

April 2012:

Power Booster Increases Slew Rate And Bandwidth, Adds Second Channel, Cirrus Logic’s PB63 dual power booster amplifier

May 2012:

Digital LED Controller Features Two-Color Mixing, Cirrus Logic’s CS163X family of digital LED controllers

June 2012:

Isolated ADCs Simplify Line Voltage Monitoring For Solar Inverters And Power Supplies, Silicon Laboratories’ Si890x isolated ADCs for mains line monitoring

July 2012:

Zero-Voltage Switching Boosts POL Efficiency To 98%, Vicor’s Picor PI33XX Cool-Power ZVS buck regulator series

Offline Switcher ICs Extend Benefits Of Primary-Side Regulation Up To 90 W, Power Integrations’ LinkSwitch-HP family of off-line switcher ICs

August 2012:

Rad-Hard Power Converters Ride Intermediate Bus Into Space
Monolithic Point-of-Load Regulators (POLs)

- Texas Instruments’ TPS50601-SP 6-A POL for harsh environments
- Intersil’s ISL70001 and ISL70002 6-A and 12-A SEE immune synchronous buck regulators
- Intersil’s ISL75051SRH radiation-tolerant ultra-low dropout regulator
- Peregrine Semiconductor’s PE9915x family of rad-hard buck regulators with integrated switches

September 2012:

**CMOS-Based Isolators Are Pin, Footprint Compatible With Standard Optocouplers**, Silicon Laboratories’ Si87xx CMOS-based digital isolators

**SSL LED Drivers Feature Flickerless Performance And Digital Dimming Control**, iWatt’s iW3616 and iW3617 digital LED drivers

October 2012:

**PSS Flyback Controller Eyes Low-Cost Networking Adapters**, CamSemi’s C2283 primary-side sensing flyback controller

**PFC Controller Integrates Numerous Protection Features**, MagnaChip Semiconductor’s MAP8800 PFC controller

December 2012:

**Module Is Fully Encapsulated 30-A POL Converter**, Intersil’s ISL8225M 30-A fully-encapsulated POL power module

January 2011:

**Digital LED Drivers Deliver Flicker-Free Dimming And Hot-Plug Support**, iWatt’s iW3612/iW3602 digitally controlled, offline power supply controllers for dimmable LED luminaires
4-A Regulator Shrinks To 2-mm x 2-mm Footprint, Maxim Integrated Products’ MAX15040 4-A, synchronous switching regulator

March 2011:


April 2011:

Driver IC Simplifies Design, Increases Efficiency For High-Power LED lighting, International Rectifier’s IRS2548D switched-mode power supply control IC with integrated PFC control

Receiver Chip Shrinks Qi-Compliant Wireless Power Designs, Texas Instruments’ bq51013 wireless power receiver IC

May 2011:

Highly Integrated Controller Works With BJTs To Cut Cost of Lamp Ballasts, STMicroelectronics L6520 lamp ballast controller IC

Chip Integrates PFC And Lamp Ballast Control In SO-8 Package, International Rectifier’s Combo8 IRS2580DS PFC + Half-Bridge Ballast IC

August 2011:

High-Temperature Components For Power Design
- Automotive-Grade Boost Controller Boasts Wide Input Range, ON Semiconductor’s NCV8871 nonsynchronous boost controller
- Forward Converter Chipset Is Specified Over -55°C to 125°C Range, Linear Technology’s LT1952/-1 single-switch forward controller, LTC3900 synchronous rectifier driver, and LT4430 secondary-side optodriver
October 2011:

**Digital Power Products**
- Digital Controller Provides Real-Time Adaptive Loop Compensation, Powervation’s PV3012 dual-phase digital dc-dc controller
- Analog Buck Controllers Feature PMBus Interface, Texas Instruments’ TPS40400 2-MHz single-channel controller and TPS40422 dual-channel controller
- Digital Power Controllers Deliver High Efficiency, International Rectifier’s IR3541, IR3536, and IR3538 multiphase digital PWM controllers
- POL Regulators Offer Vertical Mount For Space-Critical Applications, Ericsson’s BMR4622002 and BMR4632002 3E digital point-of-load voltage regulators
- Buck Regulators Deliver Highly Integrated Designs, Summit Microelectronics’ SMB220 and SMB221 10-A and 20-A digitally programmable buck regulators
- Multi-Rail Digital PMUs Pack Numerous Features, Akros Silicon’s Energy$ense family of multi-output, digital dc-dc power management unit ICs

February 2010:

**Modules Make Simple Switchers Even Simpler,** National Semiconductor’s LMZ series of Simple Switcher power modules

**Driver IC Lights Up to 12 White LEDs in Series,** Alpha & Omega Semiconductor’s AOZ1950 white LED backlight driver

April 2010:

**Control IC Simplifies HID Ballast Design,** International Rectifier’s IRS2573D HID ballast controller IC

**LDOs Deliver CMOS Advantages and Robustness,** ON Semiconductor’s NCP69x families of 1-A CMOS LDOs

**ICs Control Discharge Of X Capacitors, Reduce Losses in EMI Filters,** Power Integrations’ CAPZero family of zero-loss automatic X-capacitor discharge ICs
May 2010:

*Buck-Boost Converter Slashes Board Space Requirements,* TPS63020 buck-boost converter IC

For more details...

June 2010:

*Digital PFC Controllers Battle Analog Chips On Performance And Price,* Cirrus Logic’s CS1500 and CS1600 digital power factor correction controller ICs

For more details...

*DC-DC Converters Deliver Fast Response and High Efficiency,* Semtech’s SC173, SC174, and SC493 EcoSpeed dc-dc converter ICs

For more details...

*DC-DC Converters Increase Efficiency for DDR Memory Applications,* Enpirion’s 8-A EV1380 and the 4-A EV1340 dc-dc converters

For more details...

*Low-Side Driver IC Targets Automotive Applications,* International Rectifier’s AUIRS4426S is a dual-channel low-side driver IC

For more details...

July 2010:

*Embedded CPU Makes Power Management IC More Functional and Flexible In Portable Designs,* Integrated Device Technology’s P95020 portable power management IC

For more details...

*Controller Exploits BJT To Cut Standby Power And Cost,* CamSemi’s C2163 primary-side sensing controller

For more details...

*Boost Converters Feature Tiny Packaging and Low Input Voltage,* Semtech’s SC120, SC121 and SC122 boost converter ICs

For more details...
Power ICs Article Archive (By Issue)

August 2010:

**Shunt Regulator Minimizes Standby Power For Always-On Applications**, Supertex’s SR10 capacitor-coupled switched-shunt regulator  
[For more details...](#)

**Battery-Monitoring IC Cuts Cost In Hybrid And Electric Vehicles**, Maxim Integrated Products’ MAX11068 12-cell battery-monitoring IC  
[For more details...](#)

September 2010:

**High-Side Active ORing Devices Deliver Fast Response for Intermediate Bus Applications**, A subsidiary of Vicor, Picor’s PI2007 and PI2127 high-side active ORing devices  
[For more details...](#)

**Negative 36-V LDO Delivers Low-Noise Performance**, Texas Instruments’ TPS7A30 negative 36-V low dropout regulator  
[For more details...](#)

**Power Chip Builds Efficient, Low-Cost Supplies for Industrial Applications**, iWatt’s iW1810 digitally controlled PWM IC with built-in BJT  
[For more details...](#)

October 2010:

**Point-Of-Load Regulators Extend Functionality and Performance**, International Rectifier’s IR3837M, IR3838M and IR3839M SupIRBuck point-of-load voltage regulator  
[For more details...](#)

November 2010:

**High-Temperature Controller And Driver Improve Performance Of SiC Switches**, Cissoid’s high-temperature Themis controller and Atlas push-pull driver stage  
[For more details...](#)

**Modules Shrink Point-of-Load Converters For Portable and Industrial Applications**, Texas Instruments’ 600-mA TPS82671 and 6-A TPS84620 point-of-load power converters  
[For more details...](#)
October 2009:

A Slew of Improved Specs for Piezoelectric Drivers, Cirrus Logic’s PA107DP and MP103FCFC hybrid power amps

For more details...

November 2009:

20-A LED Driver Addresses Color-Mixing Challenges, Linear Technology’s LT3743 synchronous stepdown converter

For more details...

December 2009:

Power Devices Perform At Extreme Temperatures, Cissoid’s high-temperature MAGMA PWM controller

For more details...

Controller Eases Compliance With Power Supply Efficiency Standards, International Rectifier’s IR11672A synchronous rectification controller

For more details...

Higher Isolation Extends Use of AC Current Sensors, Silicon Laboratories’ Si85xx family of ac current sensors

For more details...