

## Power Products Article Archive

Articles published in the January through December 2018 issues

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### January 2018:

**Dual-Mode Battery Charge ICs Enable Simultaneous USB PD And Wireless Charging**, ROHM's BD99954GW/MWV dual-input boost-buck charging ICs

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**30-VA Railway Sinewave Inverters Feature IP66 Protection**, ABSOPULSE Electronics' RSI 30-D1 series railway quality sinewave inverters

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**Military-Grade UPS Delivers High Performance In Shallow Depth**, SynQor's UPS-1500-S-2S Shallow Depth Military-Grade UPS

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### February 2018:

**Rad-Hard GaN Devices Propel Space Power Supplies To Higher Performance**, Renesas Electronics' ISL7002xSEH GaN FETs and ISL70040SEH GaN FET driver

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**Power Amps Drive Capacitive Loads In Inkjet Printer Heads**, Apex Microtechnology's MPA106 and MP204 power amplifiers

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**Fully Integrated Regulators Have PMBUS, SVID And PVID Functionality**, Infineon Technologies' IR38x63/5 integrated point-of-load regulators

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**Buck Regulator Delivers High Current With High Power Density For 24-V Inputs**, Vicor's PI3325-00-LGIZ Cool-Power ZVS buck regulator

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**DC-DC Converter Steps Down 600-V Input With 98% Efficiency**, ABSOPULSE Electronics' BUR 3K-P600 3000-W stepdown dc-dc regulator

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**All-In-One Test Solution Accelerates EMI/EMC Pre-Compliance Testing,**  
*Tektronix's EMCVu is an all-in-one solution for EMI/EMC pre-compliance testing and troubleshooting*

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### March 2018:

**Dynamically Configurable Offline Switcher IC Supports USB PD 3.0 + PPS,**  
*Power Integrations' InnoSwitch3-Pro configurable flyback switcher ICs*

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**DC-DC Converter Runs Up To 10 Years On Coin-Cell Battery,** ROHM  
*Semiconductor's BD70522GUL dc-dc converter IC*

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**GaN Power ICs Make Adapters Smaller, Support Fast Charging,** Navitas  
*Semiconductor's 27-W and 65-W USB-PD reference designs*

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**Feature Rich PoE Chips Power IP Cameras And Other IoT Applications,**  
*Silicon Labs' Si3406x and Si3404 PoE powered device ICs*

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**Conduction-Cooled, Configurable Power Supplies Pack 600 W in 7- x 4-in. Footprint,** Vox Power's VCCM600 series configurable power platform

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**1200-V SiC Schottky Diodes Target Urban Off-Board Chargers And Solar Inverters,** Wolfspeed's C4D10120H, C4D15120H and C4D20120H 1200-V SiC Schottky diodes

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**1200-V SiC MOSFETs Offer 120-m $\Omega$  or 160-m $\Omega$  On-Resistance,** Littelfuse and Monolith Semiconductor's LSIC1MO120E0120 and LSIC1MO120E0160 SiC MOSFETs

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**Oscilloscopes Expand Bandwidth, Add Power Electronics Test Capabilities,**  
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**PWM Controller-MOSFETs Combo Enables Robust SMPS Designs Up To 43  
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**Stepup Power Module Supports 48-V GPUs In Legacy 12-V Data Centers,**  
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**LDO Packs High Performance In Tiny Footprint,**  
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**18-kW DC-DC Power Shelf Solution Targets CORD And OCP Applications,** *Bel  
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### May 2018:

**Power Supply ICs Are Honed For High-Fidelity Audio,** *ROHM Semiconductor's  
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**PMICs Boast Better Efficiency And Solution Size For Powering Processors,**  
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**SiC-Based Sine Wave Inverters Deliver 1 kVA In A 400-in.<sup>3</sup> Package,**  
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**HD Oscilloscopes Deliver 12-bit Resolution, 8-GHz Bandwidth And Up To 5  
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**USB Type-C Data Line Protection IC Responds To Overvoltages In 15 ns,**  
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**"Deep Sleep" Load Switch Prevents Battery Discharge During Product Shipment**, GLF Integrated Power's GLF76321 IQSmart load switch IC

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### June 2018:

**SiC Schottky Diodes Are Tailored For On-Board Chargers In Hybrids And EVs**, Infineon Technologies' CoolSiC Schottky diode family

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**LDOs Boast 98-dB PSRR, Benefitting Imaging And Wireless Applications**, ON Semiconductor's NCP16x and NCV816x series LDOs

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**650-V IGBTs Deliver High Efficiency With Soft Switching**, ROHM's RGTV and RGW series 650-V IGBTs

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**SiC JFET Cascodes Are High-Performance Upgrades For IGBTs And MOSFETs**, UnitedSiC's UJ3C1200 series of 1200-V SiC JFET cascodes

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**USB-Sized Pulse Generator Produces Clean 32-ps Edge**, Picotest's PerfectPulse Fast Edge Signal Generator

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**Bidirectional Bus Converters Deliver 750 W For Data Center, Automotive Apps**, Vicor's 2317 NBM, a bidirectional nonisolated fixed-ratio converter

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**Programmable Power Supplies Offer Ruggedized MIL-STD-810G Option**, Magna-Power Electronics' ruggedized option for its SL series and XR series programmable dc power supplies

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**Dual-Core Digital Signal Controller Eases Code Development By Separate Design Teams**, Microchip Technology's dsPIC33CH digital signal controller  
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**Gate Driver Core Is Optimized For SiC MOSFET Modules**, AgileSwitch's ASC1 SiC MOSFET gate driver core  
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**Sine Wave Inverters' Wide Input Range Ensures Reliable Operation For Cranes**, ABSOPULSE's CSH 2K-3U7 series rugged sine wave inverters  
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**Rad Hard POLs Feature Tight Regulation for Digital Processing Applications**, VPT's SVPL series space-qualified point-of-load dc-dc converters  
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**Linear Wall Plug-In Power Supplies Deliver Low Noise For Industrial and Commercial Applications**, Triad Magnetics' WAU AC series and WDU DC series power supplies  
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### August 2018:

**1-MW Electronic Load Supports Testing Of Energy Storage Modules**, Two Magna-Power 500-kW WRx Series MagnaLOAD systems delivered to the U.S. Navy  
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**EMI-Compliant Buck Converters Speed Time To Market**, Maxim Integrated Products' CISPR 22- and EN 55022-compliant Himalaya stepdown converters and power modules  
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**Resonant Controller With PFC Targets Power Supplies And LED Drivers**, Infineon Technologies' ICL5102 resonant controller IC  
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### Power Magnetics Component Roundup

#### Power Inductors

- *Automotive-Grade Molded Inductors Handle High Transient Current Spikes, Pulse Electronics Power BU's automotive-grade PA434X.XXXANLT series and*

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*PA4346/PA4349 series molded inductors*

- *Low-Profile Power Inductors For Advanced Driver Assist Systems, TDK's MLD2012 multilayer inductor for automotive power circuits*
- *Inductors Are Qualified To MIL-STD-981 Class S for Space-Grade Applications, Vishay Intertechnology's SGIHLP series low-profile, high-current IHLP inductors*
- *High-Current Inductors Are Highly Customizable, MPS Industry's HEW high-current inductors*
- *Low-loss Power Inductors For High-frequency Applications, Coilcraft's XEL50xx series high-performance, molded power inductors*
- *Coupled Inductors Provide 1500-V Isolation In Small Package, Coilcraft's LPD8035V series miniature, high-voltage 1:1 coupled inductors*
- *AEC-Q200 Certified Power Inductors Are Small And Low Profile, TT Electronics' HA66 series SMD power inductors*
- *Surface-Mount Coupled Inductor For SEPIC Converters, Sumida's CDRH127B 2-in-1 type space-saving SEPIC inductor*
- *Low-Profile SMT Inductors Deliver High Energy Storage Density, Pulse Electronics Power's PA5001, PA5002, PA5003, PA5004, PA5005, PA5006, and PA5007 high-current, low-profile SMT inductors*
- *High Temp Inductor Enhances Current Density For Multi-Phase Converters, Vishay Intertechnology's Vishay Dale IHSR-4040DZ-51 high-temperature commercial inductor*

### Chokes

- *Common-Mode Chokes Suppress Noise, Maintain High Efficiency In EPS Applications, TT Electronics' HA19 series of common-mode chokes for electronic power steering*
- *High-Current Planar Choke Inductor Delivers Wirewound Performance In Smaller Size, Vishay Intertechnology's IPLA 32 high-current planar choke inductor*

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- *Dual-Mode Chokes Suppress CM And DM Noise, Save Space, Triad Magnetics's CMF Series Dual Mode Chokes*

### **Transformers**

- *Isolation Transformers And Common-Mode Chokes Target EVs And Energy Storage Systems, Pulse Electronics' Networking Battery Management System components now include a wide range of isolation transformers and common-mode chokes for use in electric vehicles and energy storage systems*
- *Transformers Deliver 60 W For PoE++, TDK's B82806D0060A series EPCOS transformers*
- *Planar-Packaged Gate-Drive Transformers Save Space, Vishay Intertechnology's MGDT series miniaturized gate-drive transformers for high-power military, aerospace, industrial, and medical applications*
- *Line-Frequency Power Transformers Feature Updated Functionality And Appearance, Signal Transformer's EcoTrans Standard series transformers*
- *CCFL Transformers Are Still In Demand, MPS Industries continues to offer its standard and custom CCFL transformers even as others discontinue theirs.*
- *Transformers Are Pre-approved for Push-Pull drivers, Murata Power Solutions' 782100 series of transformers for use with Peregrine (pSemi) PE22100 push-pull dc-dc converter driver ICs*
- *Compact Current-Sense Transformers Sense Up To 40 A, Würth Electronics Midcom's 40-A MID-SNS current-sense transformers*
- *Current-Sense Transformers Accommodate SMPSs, Triad Magnetics' CST25 series current-sense transformers for high-frequency applications*

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### **September 2018:**

**Half-Bridge Gate Driver IC Enhances Reliable Start-Up Operation, Infineon Technologies' IRS2007S 200-V half-bridge gate-driver IC**

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**PMICs Power Next-Generation Mobile Consumer Applications**, Maxim Integrated Products' MAX77714 and MAX77752 power-management ICs  
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**Power Monitoring IC Measures AC And DC Power With High Accuracy**, Microchip Technology's MCP39F511A dual-mode power monitoring IC  
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**Scopes Deliver Faster Measurement Speed And Lower Noise**, Tektronix's 6 Series MSO mixed-signal oscilloscopes  
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**Double Choke With Molding Technology Suits DC-DC Converters**, Würth Elektronik eiSos' WE-MCRI double choke  
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**48-V Input Buck Regulators Offer BGA Option**, Vicor's PI354x-00-BGIZ Cool-Power ZVS buck regulator  
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### October 2018:

**Half H-Bridge Module Combines SiC MOSFETs with Integrated Gate Drive**, Apex Microtechnology's SA110 SiC half H-bridge module  
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**Buck Converters Support Sensors And Cameras For Assisted Driving**, ROHM Semiconductor's BD9S series automotive synchronous buck converters  
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**Buck-Boost Controllers Deliver True Bidirectional Power Conversion For Industrial Battery-Powered Applications**, Renesas Electronics' ISL81601 and ISL81401 bidirectional four-switch synchronous buck-boost controllers  
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**Smart Switch Supports Fuel Savings In Automotive Power Trains**, Infineon Technology's TLE9104SH smart quad-channel powertrain switch  
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**USB Type-C And USB Power Delivery Controllers Have Fully Integrated Power Paths**, Texas Instruments' TPS65987D and TPS65988 USB Type-C and USB PD controllers  
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**Railway DC-DC Converters Withstand High Input Surge**, ABSOPULSE  
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**Digital Signal Controller Accelerates DSP Performance for Time-Critical Control Applications**, Microchip Technology's dsPIC33CK digital signal controllers

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**30-kW COTS Military Power Inverters Target Harsh Environments**,  
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**600-V GaN FET Power Stages Boost Performance For Applications Up To 10 kW**, Texas Instruments' LMG34x family of 600-V GaN power stages

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**SiC FETs Offer Faster Switching With Cascade Convenience**, UnitedSiC's UF3C FAST series 650-V and 1200-V SiC FETs

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**Automotive Buck-Boost Chipset Meets Demands Of Start-Stop Vehicle Systems**, Rohm's BD8P250MUF-C + BD90302NUF-C buck-boost chipset

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**Rad Hard Current Sources For Sensing Subsystems In Satellites**, Renesas Electronics' ISL70591SEH and ISL70592SEH rad hard current sources

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**Flyback Switcher ICs Bring High Efficiency To Three-Phase 480-V Industrial Applications**, Power Integrations' LinkSwitch-XT2 offline switcher ICs

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**Superjunction MOSFET Offers 900-V Breakdown Voltage And Low Total Gate Charge**, MagnaChip Semiconductor's 90R1K4P superjunction MOSFET

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**Arbitrary/Function Generator Enables Engineers To Generate Test Signals Easily**, Tektronix's AFG31000 series arbitrary/function generators

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**LDO's Miserly Iq Prolongs Battery Life While 1-mm<sup>2</sup> Footprint Saves Space**, Microchip Technology's MCP1811 linear low dropout regulator (LDO)

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#### **Power Magnetics Roundup: EMI Filters**

- *EMI Filters Offer Wide Temperature Range, Many Options, XP Power's chassis mount and IEC inlet EMI filters*
- *Three-Phase Book Style EMC Filters Are Compact, Schaffner's FN 3287 and FN 3288 series EMC filters*
- *Three-Phase Mains Filters Target Industrial Machines, Schurter's FMAC NEO single-stage filter family*
- *Compact Power Entry Module Integrates Filter, Schurter's DD12 power entry module series*
- *DIN Rail Mounted EMI Filter Series Eases Installation, API Technologies' API's 62-STB series EMI filters for medical to metrology grade applications*
- *High-Performance Three-Line EMC Filters Meet EN 61800-3:2004+A1:2011, TDK's B84243 series of EPCOS 3-line EMC filters*
- *EMC Filters With High Frequency Stability Are Compact And Quiet, SMP Sintermetalle Prometheus' EMC filters for power electronic applications*
- *Filtered Power Entry Modules Meet IEC IEC62368-1, Schaffner's FN 9280 and FN 9290 families of filtered, IEC power entry modules*
- *Common-Mode Line Filters Replace Discontinued Components, Premier Magnetics' PMCU series of common-mode line filters for switching power supply applications*

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**BLDC Motor Driver Eliminates Heatsinks, Slashes Certification Time For Appliance Designs, Power Integrations' BridgeSwitch half-bridge motor driver IC family**

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**Current Sense Transformers Feature Built-In Sense Winding Capability, Triad Magnetics's CST25 series current-sense transformers**

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***Buck/Boost Regulator Simplifies Power Backup Using Supercaps, Maxim Integrated's MAX38888 reversible buck/boost regulator***

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***Half-Bridge Drivers Enhance Design Of 12-V to 48-V Automotive Hybrid Powertrains, Renesas Electronics' ISL784x4 100-V half-bridge drivers***

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***Wide Input Range Eases Transient Protection For DC-DC Converters, Gaia Converter's MGDD-80 series dc-dc power modules***

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***Isolated High-Side Power Switch Offers SPI And Many Other Features, STMicroelectronics' ISO8200AQ isolated octal high-side smart power switch***

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***Programmable DC Power Supplies Deliver Up To 50 kW In 8U, Magna-Power Electronics' TS Series MagnaDC programmable dc power supply line***

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***ORing FET Controller Protects Automotive Electrical Systems, Maxim Integrated's MAX16141 36-V ORing FET controller***

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