

Power Products Article Archive

Articles published in the January through December 2017 issues

Products are listed here using the following format:

Issue date:

Article title, *Part number/product name*

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January 2017:

Power IC Model Library For PSpice Adds Automotive Test, *From EMA Design Automation, ver.4.2 of AEi Systems' Power IC Model Library*

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Rad Hard MOSFETs Deliver Lower On-Resistance, Higher Current Rating, *IR HiRel's IRHNJ9A7130 and IRHNJ9A3130 rad hard MOSFETs*

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Encapsulated 80-W AC-DC Modules Offer Small Footprint, *XP Power's ECE80 series power supplies*

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February 2017:

GaN Power ICs Enter The Market, *Navitas Semiconductor's NV6131, NV6105 and NV6115 iDrive Gallium Nitride power ICs*

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Coreless Buck Converter Provides Efficient Point-Of-Load Power In MRIs And Particle Accelerators, *Powerbox's GB350 buck-converter module*

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Battery Charger Extends Backup Battery Life In Automotive eCall Systems, *Intersil's ISL78693 3.6-V battery charger IC*

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Motor Driver IC Requires Only Four External Components, *Allegro MicroSystems Europe's A3916 motor driver IC*

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Industrial Sinewave Inverters Deliver 400-VA From 600-Vdc Input, *ABSOPULSE Electronics' CSH-400-F6 series of sinewave inverters*

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Intelligent Power Modules Offer More Packages, More Features For Appliances, STMicroelectronics' SLLIMM nano series of Intelligent Power Modules for motor drives

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March 2017:

Inductorless Converter Delivers 10 A With Over 98% Efficiency, Dialog Semiconductor's DA9313 switched-capacitor dc-dc converter

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48-V Buck Regulator Delivers 20 A In Less Than 740-mm² Footprint, Vicor's PI3525-00-LGIZ 48-V Cool-Power ZVS buck regulator

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900-V MOSFETs Enhance Power And Efficiency Of Flyback Converters, STMicroelectronics' MDmesh K5 superjunction MOSFETs

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April 2017:

HV Fiber-Optically Isolated Probe Measures Gate Drive And Control Signals, Teledyne LeCroy's HVFO high-voltage isolated oscilloscope probe

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Buck-Boost Controller Is Tailored To Dual Automotive Battery Systems, Texas Instruments' LM5170-Q1 multiphase bidirectional dc-dc current controller.

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Power IC Combines Fifth-Gen Flyback Controller With Latest MOSFETs, Infineon Technologies's Gen5 CoolSET power ICs

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Universal Input, AC-DC Power Supplies Project 30-Year Operating Life, ABSOPULSE Electronics' PHR series of industrial quality ac-dc power supplies

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Free Instructional Videos Explain Numerous Topics In Power Electronics, Sam Ben-Yaakov's video series on power electronics topics

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May 2017:

Buck Converter Optimizes DC Fan Motor Control For Refrigerators, Rohm's BD9227F buck converter for dc fan motors

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GaN FETs Meet Hybrid, Electric Vehicle Needs, Transphorm's TPH3205WSBQ 650-V GaN FET

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100-V Power Stage Module Satisfies Cloud Infrastructure Requirements, ON Semiconductor's FDMF8811 100-V bridge power stage module

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10-A Power Modules Provide Complete Stepdown Solutions In Tiny Footprints, Texas Instruments' TPSM84A21 and TPSM84A22 stepdown power modules

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PMIC Increases Power Efficiency For Digital SLR Cameras, Dialog Semiconductor's DA6102 integrated power management IC

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LED Driver ICs Combine High Efficiency, Small Size, Peregrine Semiconductor's ARC3C family of LED driver ICs

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June 2017:

A New Power Management Tool For Portable Product Designers, Silego Technology's SLG46580 GreenPAK programmable mixed-signal IC

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Power Management IC Is 91% Efficient, Reduces Space Needs 40%, Intersil's ISL91211 PMIC

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1200-V SiC Diodes Improve Performance Of Appliances, Vehicle Chargers, STMicroelectronics' 1200-V SiC Schottky diodes

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Isolated IGBT Package Improves Thermal Performance, Reduces Assembly Time, Infineon Technologies' TRENCHSTOP Advanced Isolation package

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Stepdown Converters Cut Power Dissipation And Size For Industrial Applications, Maxim Integrated's MAX17572 and MAX17574 Himalaya synchronous stepdown dc-dc converters

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Synchronous Rectifier Controller Eases Power System Design, ON Semiconductor's FAN6248 synchronous rectifier controller for LLC resonant converters

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High-Voltage Bus Converter Achieves High Density And Efficiency
Vicor's BCM6123TD1E2663Txx 24-V output fixed-ratio dc-dc converter in ChiP package

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High-Input-Voltage DC-DC Converters Operate Up To 85°C, ABSOPULSE Electronics' HHT 500-FX series of dc-dc converters

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July 2017:

GaN Power ICs Enable Smallest Power Adapters For Ultra-Thin TVs And Laptops, Navitas Semiconductor's 150-W ac-dc reference design using GaN power ICs

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DC Power Supplies Operate With Tight Regulation, Low Ripple And Noise, Glassman Europe's GX Series programmable, dc power supplies

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High-Reliability Power Solution Suits Subsea Applications, Powerbox's PRBX VB410-380 power solution

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Mid-Range Oscilloscope Offers More than 4 Channels, Has Advanced User Interface, Tektronix's 5 Series MSO mixed signal oscilloscope

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Triple-Output Power Supplies Have Large Display, Exhibit High Stability, Keysight Technologies' E36300 series programmable dc power supplies

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August 2017:

GaN-Based Inverter Reference Design Raises Performance For AC Servo Drives, Texas Instruments' three-phase, GaN-based inverter reference design
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50-V Halfbrick Converters Enable GaN Wireless Power Amps, Artesyn Embedded Technologies' AVE450, AVE500 and ADH700 dc-dc converters
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150-A IGBT Modules Boost Power Density, Infineon Technologies' EconoPIM 3 IGBT modules
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PMICs Increase Battery Life In "Hearables", Maxim Integrated's MAX77650/MAX77651 power management ICs (PMICs)
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1000-V Input Industrial DC-DC Converters Deliver 500 W, ABSOPULSE Electronics' HVI 500-1K-XX-FX series dc-dc converters
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Smart Gate Driver Photocoupler Features Improved Desaturation Sensing, Toshiba America Electronic Components' TLP5214A smart gate driver photocoupler
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Power Supplies Keep Railway Systems On Track
DC-DC Converters featured here include:

- Schaefer's 6000-W C/B5600 series
- Artesyn Embedded Technologies' 10-W and 20-W ERM family
- ABSOPULSE Electronics' 30-W DCR 30R-F0 series
- ABSOPULSE Electronics' 250-W RWR 252-P400 series
- MTM Power's 150-W PCMDS19 150
- MTM Power's 30-W PMDS/PCMDS30
- MTM Power 14-W PMGS/PCMGS14 series
- Murata's 100-W IRQ series
- Maxim Technology's 20-W MKZI10/20 series

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September 2017:

Modular System Speeds Development Of Motion Control Designs, ACS
Motion Control's MP4U motion control system

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Offline Flyback Switcher ICs Deliver 94% Efficiency Over Line And Load,
Power Integrations' InnoSwitch3 family of offline flyback switcher ICs

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Isolated DC-DC Converters Deliver High Efficiency For Mil/Aerospace Applications, Modular Devices' Models 3715, 3716, 3717 and 3718 dc-dc converters

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October 2017:

Power Amplifier ICs Deliver High Voltage, High Output Current In Compact Package, Apex Microtechnology's PA164 and PA165 power amplifiers

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Buck Converter IC Delivers Extreme Voltage Stepdown For Mild Hybrid Vehicles, ROHM Semiconductor's BD9V100MUF-C dc-dc converter IC

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IC Boosts Power Measurement Accuracy In Windows 10 Devices, Microchip Technology's PAC1934 power and energy monitoring chip

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1000-W, Three-Phase Power Supplies Suit Rugged Industrial Applications, ABSOPULSE Electronics' HTP 1K-F6W high input voltage ac-dc power supplies

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P-Channel Zero-Threshold MOSFET Array Creates New Possibilities In Energy Harvesting, Advanced Linear Devices' ALD310700A/ALD310700 quad zero-threshold MOSFET array

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40-A Buck Converter Chip Features Novel Control Topology, Texas Instruments' TPS543C20 synchronous buck converter IC

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November 2017:

Power ICs Offer Many Options For Expanded Power Delivery Via USB Type C

- *USB-C Buck-Boost Regulator Enables Bidirectional Voltage Regulation For Tablets, Ultrabooks And Power Banks, Intersil's ISL95338 USB-C buck-boost regulator*
- *Reference Design Simplifies Development Of USB Type-C Rechargeable Battery Packs, Silicon Labs' USB type-C rechargeable battery pack reference design*
- *Buck-Boost Battery Charge Controllers Maximize Input Power For 1S To 4S Applications, Texas Instruments' bq25703A and bq25700A synchronous charge controllers*
- *Eval Boards Ease Development Of USB PD Applications From Mobile To 100 W, Rohm's USB power delivery (USBPD) compatible transmitter/receiver evaluation boards*
- *Robust USB Type-C Controllers With Internal Protection Save Space And Enhance Safety, STMicroelectronics' STUSB4710 and STUSB1602 USB Type-C-certified port-controller ICs*
- *USB-PD Interface IC Is Optimized For Power Supplies, Dialog Semiconductor's iW656 state-machine-based USB Power Delivery interface IC*
- *Power Converter ICs Complete Smartphone Direct Charging Solution, Dialog Semiconductor's DA9318 series of power converter ICs (can be combined with the iW656 listed above)*
- *18-W USB PD Reference Design Delivers High Efficiency And Compact Footprint, Power Integrations' DER-567 USB PD compliant, ac-dc power converter reference design*
- *Complete USB Type-C Solutions For Rapid Charging And High-Speed Data Transfer, ON Semiconductor's portfolio of solutions for the implementation of USB type-C applications includes intelligent charge controllers, port control ICs, data multiplexers, integrated re-drivers, high voltage protection switches, and ESD protection components*
- *USB-C Buck-Boost Battery Chargers Add 5-V To 20-V Reverse Boost For USB On-The-Go Charging, Intersil's ISL9238 and ISL9238A single-chip battery chargers*
- *USB-C Buck-Boost Battery Charger Reduces BOM Costs, Intersil's single-chip ISL9237 Narrow VDC battery charger*

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Power Supply Sequencers Are Rad Hard, Intersil's ISL70321SEH and ISL73321SEH quad power supply sequencers

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GaN Eval Board Simplifies MegaHertz Power For Audio And Other Applications, GaN Systems' GS61004B-EVBDC evaluation board

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Digital POL Generates Five Outputs In Compact, Infineon Technologies' IRPS5401 digital point-of-load regulator

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Chip Enables Faster Wireless Charging Of Smartphones And Tablets, STMicroelectronics' STWBC-EP wireless-charging controllers

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100-VA Sinewave Inverters Operate Over 20-V to 60-V Input Range, ABSOPULSE Electronics' CSI 100-3W-F1 series dc-ac inverters deliver

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December 2017:

SJ MOSFETs Are Optimized For High-Power Soft-Switching Topologies, Infineon Technologies' CoolMOS CFD7 family of SJ MOSFETs

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5-A Peak-Current Gate Drivers Reduce System Complexity And Cost, Power Integrations' SID1102K gate driver IC

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Configurable Power Supply Series Adds 600-W 24-V Bulk Power Module, Excelsys Technologies' CmE 600-W bulk power module

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Power Electronics Simulator Adds Support For SiC & GaN Modules And More, Powersim's PSIM simulator, version 11.1

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Nanopower PMICs Extend Battery Life For IoT Products, Dialog Semiconductor's DA9230 and DA9231 nanopower PMICs

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Monitor Detects Presence Of Backup Battery In Industrial Systems, ABSOPULSE Electronics' BPM 300-F0 battery-presence monitor

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Supercomputers Leverage 48-V And Power-on-Package Solutions To Win Top Honors For Power Efficiency, PEZY supercomputers leverage Vicor's 48-V Factorized Power architecture and PEZY's CPUs are co-packaged with Vicor's Power-on-Package Modular Current Multipliers

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Power Magnetics Component Roundup

Power Inductors

- *Molded Power Inductors Feature Specialized Terminations*, Coilcraft's XTL7030 and XAR7030 series of molded power inductors
- *Automotive-grade Power Inductors Offer Superior Performance In Compact Package*, Coilcraft's SRT8045 series of magnetically shielded power inductors
- *Inductors Enhance Automotive Reliability In Lighting, Powertrain, Infotainment and Telematics*, Eaton's HCM1A product line of high-current power inductors
- *High-Current Inductors Shorten Lead Times*, MPS Industries' HWI57A2 and H1300 series high-power inductors
- *6-mm² and 10-mm² High-Rel Inductors Withstand 150°C*, Murata Manufacturing's MDH6045C/MDH10060C series of winding power inductors for automotive electronic equipment
- *22-μH Inductor Features 0.6-mm Profile For Wearable Devices*, Murata Manufacturing's LQH2HPN_DR series of 2.5-mm x 2.0-mm winding power inductors
- *15-μH inductor Comes In 0402 Size*, Murata Manufacturing's LQW15DN series inductor for smartphones
- *Metal Alloy Inductors Shrink Into 0603 Case Size*, Murata Manufacturing's DFE18SA series of metal alloy type inductors
- *Shielded Metal-Hybrid Inductors Offer Higher Inductances In Small Footprint*, Sumida's CDMT40 series of metal hybrid inductors
- *Thin-film Metal Inductors Deliver Low DCR For Power Supply Circuits*, TDK's TFM160808ALC thin-film inductor
- *Robust SMT Inductors For High Efficiency, Automotive DC-DC Converters*, TT Electronics' HM73E-10 series of SMT miniature power inductors

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- *Coupled Inductors Target Specific DC-DC Topologies For Automotive Applications, TT Electronics' HA78D series of coupled inductors*
- *AEC-Q200 Qualified Inductor Boasts 125-A Continuous Current Rating, Vishay Intertechnology's Vishay Dale IHXL-2000VZ-5A inductor*
- *E-Shield Inductor Reduces Electric Fields 20 dB At 1 cm, Vishay Intertechnology's Vishay Dale IHLE-2525CD-51, IHLE-3232DD-51, and IHLE-4040DD-51 series of low-profile, high-current inductors*
- *Inductor Offers High Temperature Performance for Extreme Environments, Vishay Intertechnology's Vishay Dale IHLP-1616BZ-51 low-profile, high-current inductor*
- *High-Frequency Inductors Boost DC-DC Efficiency, Vishay Intertechnology's IHLP-1616BZ-0H extended-frequency inductor*
- *E-Shield Inductors Lower Costs and Save Space In Automotive Designs, Vishay Intertechnology's Vishay Dale IHLE-2525CD-5A, IHLE-3232DD-5A, and IHLE-4040DD-5A low-profile, high-current inductors*
- *Low-Profile Inductors Save Space in Portable Electronics, Vishay Intertechnology's Vishay Dale IFL and IFLS series of low-profile power inductors*
- *Space-Saving Inductors Operate To +155°C For Under-Hood Automotive Applications, Vishay Intertechnology's Vishay Dale IHLP1616BZ-5A low-profile, high-current inductors*

Chokes And Ferrite Beads

- *Common-Mode Inductors Suit Aerospace And Other High-Rel Applications, Exxelia's TCM series common-mode inductors*
- *0402 Ferrite Bead Suppresses Noise Over Wide Frequency Range, Murata Manufacturing's BLM15EG_SH1 series chip ferrite bead*
- *Ferrite Bead Extends Impedance To 1000 Ω In 0603 Case Size, Murata Manufacturing's BLM18KG series of high-current, 0603 size ferrite beads*
- *Power Line Inductors Support High-Speed PoC interface In Automotive Applications, Murata Manufacturing's LQW32FT series inductors for automotive PoC circuits*

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- *Common-Mode Chokes Suppress Noise In Powertrain And Safety System ECUs, Murata Manufacturing's DLW5ATH/DLW5BTH series of common-mode choke coils*
- *Soft Termination Protects Beads And Inductors Against Board Flexure And Solder Cracks, TDK's KMZ1608 and KPZ1608 series multilayer chip beads and the KLZ1608 and KLZ2012 series multilayer inductors*
- *Chokes For Automotive Power Over Coax, TDK's ADL3225V choke for automotive power over coax (PoC) applications*

Transformers

- *Flyback Transformer Delivers High Isolation For Motor Control And Inverter Applications, TT Electronics' HM210-05K060LFTR flyback transformer for use with Avago's ACPL-32JT/302J IGBT chipset*
- *Planar Transformers For Mil/Aerospace Target Popular Power Supply Topologies, Pulse Electronics Military & Aerospace's PL102XX (140 W) and PL103XX (250 W) planar transformer families*
- *Offline Transformers For LLC Resonant Half-Bridge Converters Up To 400 W, Würth Electronics Midcom's MID-LLCEPC series of offline transformers*
- *Custom Capabilities Catalog Includes Three New Toroidal Packages, Würth Electronics Midcom's newest Capabilities Catalog*
- *Transformers Sense Current Up To 40 A, Coilcraft's CST2020 series current sense transformers*
- *1000Base-T PoE Parts Support 140 W Power Delivery, Pulse Electronics' HX6098NL Ethernet transformer/choke, JK0-0229NL connector module and JOB-3563NL connector module*

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