

## Power Products Article Archive

Articles published in the January through December 2019 issues

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### January 2019:

**Receiver Chip Enables Wireless Charging In Smaller Devices**, Energous' DA2223 four-port RF-to-dc wireless power chip

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**Plug-And-Play IGBT Gate Drivers Are Ruggedized For Renewable Energy And Other Applications**, Power Integrations' SCALE-2 2SP0430T2XX plug-and-play gate drivers

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**Energy-Harvesting Embedded Controller May Eliminate Batteries In IoT Devices**, Renesas' R7F0E embedded controller

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**Railway-Grade DC-DC Converters Tout Value, Wide Operating Ranges**, Aimtec's AM20CWR-ZK 20-W dc-dc converters

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### February 2019:

**Power Analysis Software Enables More-Thorough Evaluation Of Power-Conversion Systems**, Teledyne LeCroy's 3-Phase Power Analysis software package

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**Thyristor Modules Operate At Higher Junction Temperatures**, Infineon Technologies Bipolar's Eco Block thyristor modules

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**Fully Encapsulated 200-W Railway DC-DC Converters Offer Chassis Or DIN-Rail Mounting**, ABSOPULSE Electronics' RWY 200-HSA-P2 series dc-dc converters

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**Injector Supports PSRR Testing For Military And Satellite Buses**, Picotest's J2121A line injector

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**Fast-Recovery Super-Junction MOSFETs Enhance Performance Of Bridge And ZVS Converters**, STMicroelectronics' MDmesh DM6 600-V MOSFETs

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**AEC-Qualified GaN FETs For Lidar And 48-V Power Systems**, EPC's EPC2206 and EPC2212 eGaN devices

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**Buck Regulators Deliver Compact Solutions For Powering Next-Gen Chipsets**, Alpha and Omega Semiconductor's AOZ2367QI and AOZ2368QI EZBuck regulators

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**Rectifiers Provide 96% Efficiency For Telecom And Other Applications**, Eltek's DPR6000B rectifier product line

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### March 2019:

**SiC-MOSFET Gate Driver Improves Efficiency And Safety**, Power Integrations' SIC1182K SCALE-iDriver SiC-MOSFET gate driver

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**IGBT Power Modules Provide Higher Density And Lower Cost For Industrial Drives**, Infineon Technologies' 1200-V TRENCHSTOP IGBT7 modules

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**Automotive-Grade Tantalum Capacitors Deliver High Capacitance Per Volume**, AVX's F9H series surface-mount, J-lead tantalum capacitors

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**PMIC Supports Thermal Energy Harvesting With Low-Voltage Startup**, e-peas' AEM20940 power management IC

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**Power Supplies Provide High Power Density For MIL-COTS VPX Applications**, Vicor Power Systems' VITA 62-compliant power supplies

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**Type RA, Stacked Polyester Capacitors Deliver High Energy Density**, Cornell Dubilier's Type RA multilayered film capacitors

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### April 2019:

**6-A Buck Converter Achieves Tiny Size, High Efficiency Using Novel Architecture**, Murata Manufacturing's MYMGA1R86RELC2RA dc-dc converter  
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**Gate Driver Uses AI To Bring Soft Switching Benefits To Inverters**, Pre-Switch's 3-phase gate-drive solution  
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**Chipset Makes Flybacks More Efficient In Powering Displays**, Power Integrations' InnoMux chipset  
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**Large Portfolio Of Automotive-Grade SiC MOSFETs For EV Applications**, Rohm Semiconductor's SCT3xxxxxHR series SiC MOSFETs  
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**Regulator Uses Less Power, Fewer Parts Than Conventional Cap-Drop Designs**, Texas Instruments' TPS7A78 ac-dc linear regulator  
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**PMBus Power Modules Deliver High Power Density For FPGAs, DSPs, ASICs And Memory**, Renesas Electronics' ISL8280M and ISL8282M hybrid digital dc-dc PMBus power modules  
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**1000-A Voltage Regulator Solution For Next-Gen AI And 5G Networking**, Infineon Technologies' XDPE132G5C digital PWM multiphase controller and TDA21475 70-A power stage  
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**1-kVA Frequency Converters Feature Universal Input And Split-Phase Output**, ABSOPULSE Electronics' FCP 1K-F7W series frequency converters  
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**Regulated LED Driver For Automotive Applications**, Taiwan Semiconductor's TSCR421 low-side constant-current regulator  
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**Isolated ICs Ensure Precise Current And Voltage Measurements**, Silicon Labs' Si89xx family of isolated analog amplifiers, voltage sensors and delta-sigma modulator devices  
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### May 2019:

#### **Power Magnetics Component Roundup**

##### **Power Inductors**

- *Power Inductor Is Magnetically Shielded, SUMIDA's CDB80D62 high-current inductor*
- *AEC-Q200 Inductors Use Latest Composite Molded Core Materials, TT Electronics' HA72L series molded inductors*
- *Inductors Bring High Performance To Automotive And Industrial Applications, Pulse Electronics Power BU's PM220X series surface-mount inductors*
- *Thin-Film Metal Inductors Address Space Constraints In ADAS Applications, TDK's TFM252012ALVA thin-film metal power inductors*
- *Molded Power Inductors Mimimize Losses, Coilcraft's XGL4020 series power inductors*
- *2-in-1 High-Temperature Inductor Targets LED Headlights, Other Uses, SUMIDA's CDRCH12D78BT150 high-temperature inductor*
- *SMD Power Inductor Has Low DCR, SUMIDA's CDPH79D72 is a high-current power inductor*
- *Inductor Operates To +180°C For Under Hood Applications, Vishay Intertechnology's IHLP-6767GZ-8A high-current inductor*
- *Inductor In 5050 Case Operates To +155°C, Vishay Intertechnology's Vishay Dale IHLP-5050EZ-5A high-current inductor*

##### **Transformers**

- *Gate-Drive Transformers For Demanding Battery Management Systems, TT Electronics' HA42A and HA86A series gate-drive transformers*
- *High-Frequency Wire-Wound Transformers For CCM Flybacks, Pulse Electronics Power BU's PA4470.XXXNL wire-wound transformers*
- *Flyback Transformer Is Tailored To High-Voltage Reference Design, SUMIDA's CEFD2010 and CEP1311E surface-mount flyback transformers*
- *Extended Rail Flyback Transformers Meet Isolation Specs Without Flying Leads, Würth Elektronik's MID-OLRM flyback transformers*
- *Planar Transformers Are Optimized For 200- to 700-kHz Switching, Premier Magnetics' PTxxx series of frequency-optimized planar transformers*

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### Chokes

- *Small Form Factor Common Mode Chokes Handle Up To 9 A, Pulse Electronics Power BU's PA4339.XXXNLT common-mode choke series*

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**AC-DC Converter ICs Add Built-In 1700-V SiC MOSFET For More Compact Designs, ROHM Semiconductor's BM2SCQ12xT-LBZ series ac-dc converter ICs**

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**Adapter Reference Design Leverages GaN-Based, Active-Clamp Flyback To Achieve High Density, Navitas's NVE039 27-W ac adapter reference design**

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**Rad-Tolerant PWM Controller And GaN FET Driver Come In Plastic Packages For SmallSats, Renesas Electronics' ISL71043M PWM controller and ISL71040M GaN FET driver**

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**Fully Integrated Active Clamp Flyback Controller Extends Benefits To 60-W AC Adapters, Silanna Semiconductor's SZ1105 active-clamp flyback controller**

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**Isolated Gate Drivers Integrate Sensing For IGBTs And SiC MOSFETs, Texas Instruments' UCC21710-Q1, UCC21732-Q1 and UCC21750 isolated gate drivers**

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**SJ MOSFETs Offer Fast Reverse Recovery And Design Flexibility For EV Charging Stations, Home Appliances, ROHM Semiconductor's R60xxJNx 600-V superjunction MOSFETs**

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**Automotive-Qualified GaN FET Improves Lidar System Resolution, EPC's 80-V EPC2214 eGaN FET**

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**650-V High-Frequency IGBTs Boost Performance With High-Speed Technology, STMicroelectronics' HB2 650-V IGBT series**

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### June 2019:

**Programmable Multi-Channel LDO Packs High PSRR And Low Noise For**

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**Powering Smart Phone Cameras, Dialog Semiconductor's SLG51000 configurable mixed-signal integrated circuit**

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**Switched Capacitor Converter Reference Design Enables High Efficiency 48-V Power Distribution, Infineon Technologies' zero-voltage-switching switched-capacitor converter**

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**Smart Class D Amplifier Delivers Louder, Richer Sound From Micro Speakers, Maxim Integrated Products' MAX98390 smart amplifier**

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**Bench Friendly Power Supplies Deliver More Usable Power And Large Display, Keysight Technologies' E36200 series power supplies**

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**Scopes Offer Versatility, Ease of Use and Large Displays At Lower Cost, Tektronix's 3 Series MDO and 4 Series MSO oscilloscopes**

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**700-V MOSFETs And Schottkys Extend SiC Options For Designers, Microchip Technology's 700-V SiC MOSFETs and 700-V and 1200-V SiC Schottky barrier diodes**

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**Medical And Industrial Power Supplies Feature High Power Density, Extended Communications Bus, Cosel's 300-W PCA300F and 1000-W PCA1000F power supplies**

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**Six-Channel Controller Improves Precision And Performance For Stepper Motors, TRINAMIC Motion Control's TMC6214 motor controller and driver module**

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**1.5 kW To 8 kW Programmable Power Supplies Are Up To 95% Efficient, Magna-Power Electronics' SL series 1U programmable power supplies**

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**250-W Quarter Bricks Operate From 9-V To 36-V Inputs, GAIA Converter's MGDI-204 and MGDI-254 quarter brick dc-dc converters**

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### July 2019:

**Gate-Driver System Works With 1.7-kV To 4.5-kV IGBT And SiC Power**

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**Modules, Power Integrations SCALE-iFlex gate-driver system**

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**80-V Buck LED Drivers Perform Highly Accurate Dimming, Infineon Technologies' ILD8150/E LED driver ICs**

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**Switching Regulator Operates With Input Up To 61 V, STMicroelectronics' A7987 automotive switching regulator**

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**SMD Bridge Rectifiers Save Assembly Costs, Increase Power Density, Taiwan Semiconductor's TBS series SMD bridge rectifiers (TBS406, TBS408, TBS410, TBS606, TBS608, TBS610)**

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**900-V GaN-on-Si FETs Empower Three-Phase Industrial Power Supplies And Automotive Converters, Transphorm's Gen III TP90H050WS FET**

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### August 2019:

**Offline Switcher ICs Adopt GaN For Higher Power Output And Efficiency, Power Integrations' INN3X79C and INN3X70C offline switcher ICs**

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**Signal Injector Bundle Enables Bode Plot And PSRR Measurements Using Scopes, The Picotest FRA Bundle, consisting of the J2100A injection transformer and the J2120A line injector**

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**Planar Transformers For Active-Clamp Forward Topology And Wide Input Range, Champs Technologies' P26R6-AC offline series of planar transformers**

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**15-Mbps Photocouplers Withstand Harsh Industrial Applications, Renesas' RV1S9x60A photocouplers**

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**Sintered-Silver Packaging Technology Enhances Performance Of 650-V SiC FETs, UnitedSiC's two new TO220-3L package options for the UF3C FAST series of 650-V SiC FETs**

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**Regulator's Low Quiescent Current Extends Battery Life For IoT Devices,** Texas Instruments' TPS62840 synchronous stepdown converter

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**Configurable Mixed-Signal ICs Are Now Available For Automotive Applications,** Dialog Semiconductor's SLG46620-A Configurable Mixed-Signal IC

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### September 2019:

**Battery Management IC Maximizes Cell Life And Driving Range For Hybrids And EVs,** Renesas Electronics' ISL78714 Li-ion battery management IC

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**Liquid Cooled, 600-V Input DC-DC Converter Delivers Up To 2000 W,** ABSOPULSE Electronics' LQC 2K-3U2LC dc-dc converter

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**Buck-Boost Converter Extends Battery Life For IoT, Wearable, And Portable Devices,** ROHM's BD83070GWL synchronous buck-boost converter IC

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**X-Capacitor Discharge ICs Enable Faster Discharge,** Power Integrations' CAPZero-3 X-capacitor discharge ICs

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**Accessory Brings Two-Port Shunt-Through Impedance Measurement To Scopes,** Picotest's J2161A two-way wideband active splitter

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**Charger's Low Termination Current Increases Battery Capacity,** Texas Instruments' BQ25619 switching battery charger IC

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**ICs Simplify USB Type-C Power Delivery, Enable HostFlexing And PDBalancing,** Microchip Technology's USB705x SmartHub devices with support for power delivery and UPD301A USB type-C PD controller

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**Power Amplifier IC Delivers High Voltage And High Current,** Apex Microtechnology's PA164 high-voltage operational amplifier

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### October 2019:



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**Motor Drive Analyzers Create A 16-Channel Data Acquisition System,**  
*Teledyne LeCroy's MDA 8000HD Motor Drive Analyzers*

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**Backlight LED Driver Is Compatible With 3- To 12-in. Vehicle LCD Panels,**  
*ROHM Semiconductor's BD81A76EFV-M LED driver IC*

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**Silent Motor Controller Enables Battery-Powered Stepper Motors To Run in Stealth Mode,**  
*TRINAMIC's TMC2300 motor driver IC*

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**800-V Input DC-DC Converters Deliver 2000 W,**  
*ABSOPULSE Electronics' HVI 2K-F6W series dc-dc converters*

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**POLs Increase Efficiency For Server, Networking And Telecom Applications,**  
*Infineon Technologies' OptiMOS IR3826(A)M integrated point-of-load regulators*

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**Tiny LDO Cuts Quiescent Current To <25 nA,**  
*Texas Instruments' TPS7A02 low-power low-dropout regulator*

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### November 2019:

**Eval Board Paves Way For SiC MOSFETs In Motor Drives,**  
*Infineon Technologies' EVAL-M5-E1B1245N-SiC evaluation board*

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**Oscilloscope Extends 12-bit Resolution To Lower Price Points,**  
*Teledyne LeCroy's WaveSurfer 4000HD High Definition Oscilloscope*

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**750-V Input Railway DC-DC Converter Delivers High Efficiency, Long Life,**  
*ABSOPULSE Electronics' HVI 41R-F1 dc-dc converter*

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**PoE Products Ease Powering Of Pre-standard And 802.3bt-2018-Compliant PDs,**  
*Microchip Technology's IEEE 802.3bt-2018-compliant PoE injectors and midspans and power sourcing equipment (PSE) chipsets including the PD69208M, PD69204T4 and PD69208T4 PSE managers and PD69210 PoE controller*

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**DC Electronic Loads Are Available Up To 4800 A**, Magna-Power Electronics' ALx series of MagnaLOAD dc electronic loads

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**LED Drivers Support Dynamic Automotive Lighting From Front To Rear**, Texas Instruments' TPS92520-Q1, TPS92682-Q1 and TPS929120-Q1 LED drivers

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**Half-Bridge Eval Board Demonstrates Benefits Of 650-V GaN HEMTs**, GaN Systems' half-bridge GaN daughter board using GaN Systems' 650-V, 30-A GaN E-HEMTs and ON Semiconductor's NCP51820 high-speed gate-driver

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### December 2019:

#### Power Magnetics Component Roundup

##### Power Inductors

- *Inductors Are Optimized For 48-V Automotive Systems, Coilcraft's AGM2222 power inductors*
- *Shielded Inductors Deliver High Inductance, Coilcraft's XAL7050 high-temperature power inductors*
- *Robust, Automotive-Grade Inductors Provide Added Reliability, Eaton's automotive-grade HCM1AV2 high-current power inductors*
- *SMT Inductors Enable More Efficient, Compact DC-DC Converters, Kemet's METCOM series metal-composite power inductors*
- *Surface-Mount Inductors Target Industrial And Telecom Applications, TT Electronics' HM66M and HM78M series shielded power inductors*
- *Surface-Mount Power Inductor Suits Class D Amplifiers, Sumida's C2DEPIH99 shielded power inductor*
- *Metal Core Inductors Are Designed For Automotive LED Headlights, TDK's SPM-VT metal-core power inductors*
- *Thin-Film Inductors Lower DCR For Mobile Devices, TDK's TFM201208ALD miniaturized thin-film power inductor*
- *Inductors Offer High-Temperature Operation For Computer And Telecom Applications, Vishay Intertechnology's Vishay Dale IHLP-1212AZ-51, IHLP-1212AB-51, and IHLP-1212BZ-51 low-profile, high-current inductors*
- *Small Automotive-Grade Inductors For Under-Hood Applications, Vishay Intertechnology's Vishay Dale IHLP-1212AZ-A1, IHLP-1212AB-A1, and IHLP-1212AB-5A low-profile, high-current inductors*

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- *Rugged Surface-Mount Inductors Are Designed To Mil Specs, API Delevan, API Delevan's HRSPD125 shielded, surface-mount power inductors*

### **Inductor Cores**

- *Powder Cores Are Designed For Cutting Edge Performance, Magnetics' Edge powder alloy cores*

### **Magnetics Literature**

- *Free E-Book Explains UL Class 2 Power Transformers, Triad Magnetics' Understanding UL Class 2 Power Transformers e-book*

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**1200-V Enhancement-Mode GaN Power Devices Challenge SiC**, GaN Power International's GPIHV15DK and GPIHV30DDP5L GaN power FETs

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**GaN Power Transistors Target High-End Audio And SMPSs**, Infineon Technologies' IGT40R070D1 E8220 and IGLD60R190D1 CoolGaN power transistors

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**SiC FETs Lower On-Resistance To Less Than 10 mΩ**, UnitedSiC's UF3SC SiC FETs

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**Glass-Encapsulated Multilayer Varistors Rated For 150°C Operation**, AVX's TransGuard automotive VGAH series multilayer varistors

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**Closing Software Company Makes Its Simulator Free**, Spectrum Software's Micro-Cap simulator

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**UL/EN62368-1 Certified Power Supplies For Industrial Applications**, Cosel's LHA30F, LHA50F, LHA75F and LHA100F open-frame, low-profile power supplies

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**Digital Models Speed Design-In Of Power Supplies**, RECOM Power's digital models

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