

Articles published in the January through December 2023 issues

Products are listed here using the following format:

Issue date:

Article title, Part number/product name

For more details...(link to article)

January 2023:

900-V GaN Power ICs Feature Low On-Resistance And Low Leakage, GaNPower International's GPI4TIC15DFV and GPI6TIC15DFV GaN ICs For more details...

Mobile App Eases Power Stage Design, Dmitriy's Power Stage Design Tool For more details...

Latest-Gen 150-V MOSFET Is Optimized For Light Electric Vehicles,
Magnachip Semiconductor's MDT15N054PTRH 150-V MXT MOSFET

For more details...

ZVS Power-Supply ICs Combine Programmability, High Efficiency and Small Size, Power Integrations' InnoSwitch4-Pro family of flyback ICs

For more details...

February 2023:

Water-Cooled Probe Achieves Tiny Size Needed To Measure Power Supply Noise Rejection, Picotest's P2124A high-speed line modulator

For more details...

Compact eFuses Offer 2.8-V to 23-V Operating Range, Vishay Intertechnology's SiP32433A/B and SiP32434A/B eFuses

For more details...

Wide-Voltage-Range Hot-Swap Controller Offers Programmable Digital SOA Control, Infineon Technologies' XDP710 digital controller

For more details...

IC Enables Safe And Flexible Power Distribution In Automotive E/E
Architectures, Renesas Electronics' RAJ2810024H12HPD Intelligent Power Device
For more details...

Buck-Boost Reference Design Yields Small 140-W Fast Charger, From EPC and Richtek, a bidirectional buck-boost controller reference design board For more details...



Articles published in the January through December 2023 issues

High-Voltage Driver Offers A Highly Integrated Solution For MEMS
Switches, Menlo Micro's MM101 eight-channel driver with integrated charge pump
For more details...

Rad-Tolerant LDO Targets LEO Applications, Microchip Technology's MIC69303RT 3-A COTS low-dropout voltage regulator

For more details...

Laser Driver IC Enables Higher-Density Lidar Systems, EPC's EPC21701 laser driver IC with 80-V, 40-A FET for time-of-flight lidar systems

For more details...

A Highly Integrated Gate Driver IC For Battery-Powered BLDC Motor Drives, Infineon's 6ED2742S01Q MOTIX three-phase gate driver IC

For more details...

Supercapacitors Are Automotive Qualified, KYOCERA AVX's five SCC series supercapacitors

For more details...

March 2023:

Open-Source Magnetics Design Platform Is Launched, Open Magnetics, an open-source platform

For more details...

Linear Rack And Benchtop Power Supplies Offer Wide Range Of DC Outputs, Acopian's Infinity Rack and Benchtop power supplies

For more details...

An Extensive Range Of Radial-Leaded Aluminum Electrolytic Capacitors, KYOCERA AVX's REA, REF, REH, RPA, RPF, RHA and RHD series capacitors

For more details...

LCC Design Tool Tames Complexity Of LED Driver Design, Infineon Technologies' LCC online design tool

For more details...

High-Performance Vertical GaN Semiconductors Will Begin Production In Q3, NexGen Power Systems' 700-V and 1200-V NexGen Vertical GaN semiconductor devices



Articles published in the January through December 2023 issues

Designs Accelerate Development Of EV Charging, Vehicle Cluster Control And Other Applications, Renesas Electronics' 10 Winning Combinations engineering-vetted designs

For more details...

Cost-Optimized, Energy-Saving Designs For Power Supplies And Battery Chargers, Pulsiv's PSV-RDAD-75FB and PSV-RDAD-100FB reference designs

For more details...

Gap Filler Pad Excels At Thermal Conductivity And Conformability, From the Chomerics Division of Parker Hannifin, the THERM-A-GAP PAD 70TP thermally conductive gap filler pad

For more details...

BME NPO MLCCs Are Approved To DLA's Qualified Products Database, KYOCERA AVX's MIL-PRF-32535 BME NPO MLCCs

For more details...

Power System Design Software Adds 3D Visualization And Other Features, Flex Power Modules' version 4.5 of Flex Power Designer (FPD) Tool

For more details...

Automotive High-Side Drivers Are Scalable And Feature Rich, STMicroelectronics' VIPower M0-9 series gate drivers

For more details...

PoE Switch Adds Network And Security Features For Outdoor Applications, Microchip Technology's PDS-204GCO PoE switch

For more details...

April 2023:

Active EMI Filter ICs Enable Smaller Power Supply Designs, Texas Instruments' TPSF12Cx family of active EMI filter ICs

For more details...

900-V Switcher ICs Benefit EV And Industrial Applications, Power Integrations' 900-V InnoSwitch3 flyback switcher ICs

For more details...

SiC FET In TOLL Package Offers Higher Voltage Rating, Lower On-Resistance, Qorvo's UJ4SC075005L8S SiC FET



Articles published in the January through December 2023 issues

Simulation Tools For SiC Devices Improve Accuracy For Soft Switching, onsemi's online Elite Power Simulator and Self-Service PLECS Model Generator For more details...

600-V FREDs Deliver High Efficiency And Improved Thermal Performance, Taiwan Semiconductor's PUUPxJ series FREDs

For more details...

Reliability Report Projects GaN Device Lifetime In Real-World Applications, EPC's Phase-15 Reliability Report

For more details...

Simulator Eases Evaluation Of SiC Power Solutions, Microchip Technology's MPLAB SiC Power Simulator

For more details...

BMS Controller Improves Li-Ion Battery Performance, STMicroelectronics' L9961 battery-management-system (BMS) device

For more details...

Single-Chip Intelligent Battery Management Solutions For 20-Cell Systems, Qorvo's PAC22140 and PAC25140 Power Application Controller (PAC) devices For more details...

ASIL C Safety-Rated Field Current Sensor For EV Powertrain Systems, Allegro MicroSystems' ACS37601 high-precision, field current sensor For more details...

Application-Specific MOSFETs For Hotswap Reduce Footprint, Nexperia's PSMN1R9-100SSE and PSMN2R3-100SSE 80-V and 100-V application specific MOSFETs (ASFETs)

For more details...

Integrated 100-V GaN Half-Bridge With Driver Saves Board Space, Innoscience Technology's ISG3201 SolidGaN half-bridge

For more details...

May 2023:

International Battery Seminar Showcased Advances In Fast Battery Charging And Battery Test Equipment

- Iontra's charging technology for Li-ion batteries
- BattGenie's software and system integration solutions for Li-ion



Articles published in the January through December 2023 issues

battery management systems

- AMP Energy Management System' hardware and software for charging, energy management and battery management for electric vehicles including its EVCC charge controller and Fast Charge Junction Box
- Battery Streak's anode and cathode materials enabling Li-ion batteries capable of 6C-rate charging
- TDK-Lambda's GENESYS+ series of programmable dc power supplies
- GW Instek's PEL 5000C series and AEL-5000 series of dc and ac/dc loads
- CAENels' battery test system
- Unico's high-performance drive systems for EV & battery testing
- Neware Technology's battery cyclers with built-in environmental test chamber
- Venable Instruments' Energy Storage Test Instrument (ESTi)
- Hioki's BT5525 battery insulation tester and RM3546 welding resistance meter
- Chroma Systems Solutions' battery cell, module, and pack automated test solutions
- Opal RT's Battery Management System HIL test solution

For more details...

GaN FETs Plus Controller Build High-Density Buck Converter Reference Design, EPC's EPC9158 synchronous buck reference design board

For more details...

Smart High-Side Switches Protect Sensitive ADAS Loads And The Power Distribution System, Infineon Technologies' PROFET Load Guard 12-V power switches

For more details...

High-Power Linear Power Supplies Feature Wide Output Voltage Ranges, Acopian's Rack and Benchtop programmable power supplies

For more details...

Buck Converters Ease Tradeoffs In Size Versus Efficiency, Diodes' AP62500 and AP62800 synchronous buck converters

For more details...

Application Note Explains How COTS DC-DC Converters Achieve High Reliability, VPT's AN009 4.0 VPT Series DC-DC Converters and Power Accessory Modules application note

For more details...

Cores Deliver High DC Bias And Saturation With Lower Core Loss, Magnetics' XFlux Ultra powder cores



Articles published in the January through December 2023 issues

For more details...

Merged PiN Schottky Structure Enhances Robustness Of 650-V SiC Diodes, Nexperia's PSC1065K 10-A, 650-V SiC Schottky diode

For more details...

Connector CAD Models Accelerate Board Design, From Nicomatic and SnapEDA come CAD models for over 8 million configurations of Nicomatic's connectors

For more details...

June 2023:

Power Magnetics Component Roundup

Power Inductors

- Automotive-Qualified Metal Inductor Offers Wide Range Of Inductance Values, Sumida's CY0650AT125/DS automotive-grade SMD metal inductor
- Compact Inductor Offers Shielding, Mechanical Strength, Sumida's CD40D16MB surface-mount ferrite-core inductor
- Inductors Target DC-DC Converters In Mil/Aerospace Applications, Vanguard Electronics' HCPI040, HCPI050, HPCI060, HPCI100, and HCPI120 series highcurrent inductors
- Inductors Are Tailored For DC-DC Converters In Portable Applications, Sumida's CRDH10D48RMN surface-mount inductor with Mn-Zn and Ni-Zn core
- Flat-Wire Inductors For High-Power Buck-Boost Converters And PFC In EVs, Sumida's CDPQ****/T150 series high-current inductors
- Pin-Type Shielded Inductors Withstand 500 Vdc, Sumida's DPQ3535/T150 high-power inductor
- Dual-Winding TLVR Inductors Offer 100-nH To 200-nH Values, Pulse's PGL6380.XXXHLT TLVR inductors in a 12-mm x 6-mm x 11.15-mm package
- Inductor With L-Shaped Termination Benefits Wearable Devices, Pulse's BDCC and ADCC series of mini-molded inductors



Articles published in the January through December 2023 issues

- Dual-Winding TLVR Inductors Feature Saturation Current Ratings To 117 A, Pulse's PAL6373.XXXHLT series TLVR inductors for server Vcore power
- Flat-Wire Inductors Handle High-Current Transient Peaks, Würth Elektronik's WE-XHMA series AEC-Q200-certified surface-mount inductors

Transformers

- Forward Converter Transformers Provide Planar Benefits, Bourns' Model PLN0xx-ED21 series planar transformers
- Auto Transformer Rectifier Units Save Space And Weight, From Vanguard Electronics, the 2-kW to 10-kW ATRU series includes the TRU-12-2, TRU-12-5, TRU-18-5, TRU-18-10, TRU-30-5, and TRU-30-10 models
- Custom Planar Transformers Span 5 W To 20 kW, Payton Planar's custom planar transformers

Wireless Power Coils

• Wireless Charging Coils Come In Circular Or Rectangular Formats, Signal Transformer's WRSR and WRSC series coils

Chokes And Filters

- High-Current Common-Mode Chokes Feature Low Profile Planar Construction, Pulse's PM9407 series automotive-grade chokes
- Inductors Serve As Choke Coils And Filters In Automotive Powertrains, TAIYO YUDEN's AEC-Q200-qualified LAXH series of ferrite power inductors
- High-Current Multilayer Chip Bead For Automotive Power Supply Lines, TDK's MPZ2520SPH series multilayer chip bead
- Small Common-Mode Chokes Operate From -55°C To 200°C, Vanguard Electronics' XTCMN5 series choke inductors
- High-Value Inductors Block Low-Frequency Noise, Sumida's CDR**/T150 series unshielded, high-inductance-value inductors
- Common-Mode Chokes Now Come In IATF Versions, Pulse's IATF versions of its SLIC and Shasta chokes



Articles published in the January through December 2023 issues

 High-Current Chokes For Automotive And Industrial Applications, TDK's B82559A*A033 series of shielded, EPCOS ERU33 through-hole chokes

Cores

- Custom Powder Core Blends Address Unique Requirements, Magnetics' custom powder core blends
- Nanocrystalline Cores For Current Transformers, Magnetics' nanocrystalline cores

For more details...

SiC Gate Driver Improves Efficiency, Simplifies Design For EV Traction Inverters, Texas Instruments' UCC5880-Q1 isolated gate driver

For more details...

A Highly Integrated Wireless Power Transmitter IC For Applications Up To 50 W, Infineon Technologies' WLC1150 wireless charging transmitter IC

For more details...

GaN ICs Are Robust And Easy To Use, Cambridge GaN Devices' H2 series ICeGaN HEMTs

For more details...

Hybrid Ultracapacitor UPS System Offers Long Operating Life For Wind Turbines, Richardson Electronics' ULTRAUPS3000 hybrid ultracapacitor UPS

For more details...

MCUs Offer An Array Of Features For Motor Control Applications, Renesas Electronics' RX and RA families of MCUs

For more details...

GaN Transistors Expand 100-V And 200-V Rad Hard Options, EPC's EPC7020 200-V, 11-m Ω GaN FET and EPC7003 100-V, 30-m Ω GaN FET

For more details...

SiC E-Fuse Demonstrator Eases Design Of Solid-State Power Protection, Microchip Technology's SiC-based E-fuse demonstrator board

For more details...

Power Supplies Enable Battery Characterization, Validation And Simulation, Chroma Systems Solutions' 62000D dc power supplies

For more details...

E-Mode GAN FETs Address Low- And High-Voltage Applications, Nexperia's



Articles published in the January through December 2023 issues

GAN080-650EBE, GAN140-650EBE, GAN140-650FBE, GAN190-650EBE, and GAN190-650FBE 650-V, GaN FETs in DFNs; GAN3R2-100CBE 100-V GaN FET in a WLCSP; and GAN7R0-150LBE 150-V GaN FET in an LGA

For more details...

Wireless Charging Module Meets Qi2 Standard, From NuCurrent and Shanghai Amphenol Airwave Communication Electronics (working with NXP Semiconductors) comes the Qi2 Max wireless charging module

For more details...

Design Option For Buck Converter IC With Intelligent Power Sharing, Silanna Semiconductor's Power Density Hero online configuration tool can now be used with the SZPL3002A IC

For more details...

1200-V SiC Power Modules Provide Independent Outputs And Small Size, Solitron Devices' SD11911 and SD11912 1200-V SiC power modules

For more details...

July 2023:

GaN Driver Integrates Galvanic Isolation For Power Rails Up To 1700 V, STMicroelectronics' STGAP2GS gate driver

For more details...

PMIC Integrates Essential Functions For Bluetooth Low Energy Designs, Nordic Semiconductor's nPM1300 power management IC

For more details...

SiC Trench MOSFETs In TO263-7 Boost E-Mobility, Infineon's 1200-V CoolSiC MOSFETs

For more details...

Utility-Scale Energy Storage Inverters Deliver Flexibility And High Power Density, Dynapower's CPS-2500 and CPS-1250 inverters

For more details...

3300-V IGBT Module Gate Driver Reports Telemetry Data For Better Control, Power Integrations' 1SP0635 digital single-channel gate-driver board
For more details...

SiC Schottky Diodes Offer 650-V To 1200-V And 6-A To 10-A Ratings, Bourns' BSDH10G65E2, BSDH10G120E2, BSDD06G65E2, BSDL10S65E6, BSDW20S65C6, BSDW20G120C2SiC Schottky barrier diodes



Articles published in the January through December 2023 issues

For more details...

80-V And 100-V MOSFETs Enable Reduced Spiking In More Package Styles, Nexperia's NextPower 80-V and 100-V MOSFETs in LFPAK56 and LFPAK88 packages For more details...

700-V SiC MOSFET Is Military Grade, Solitron Devices' SD11710 SiC MOSFET in a hermetically sealed TO-258

For more details...

Rectifiers Deliver Up To 7 A In DFN3820A Package, Vishay Intertechnology's VxNL63, VxNM63, VxN103, VxNM103, and VxNM153 series of 60-V, 100-V, and 150-V Trench MOS barrier Schottky rectifiers

For more details...

High-Power Battery Pack Test System Provides Regen And Other Features, Chroma Systems Solutions' Chroma 17040E regenerative battery test system

For more details...

August 2023:

Free SPICE Tool Revamps Circuit Simulation For Power And Analog Designers, Qorvo's QSPICE circuit simulation software

For more details...

40-V Rad-Hard GaN FETs Deliver High Performance For LEO And GEO Applications, EPC's EPC7001 and EPC7002 rad-hard GaN FETs

For more details...

MCU Embedded Power ICs With CAN FD Interface Provide Faster Communication, Infineon Technologies' TLE988x and TLE989x MOTIX MCU embedded power ICs

For more details...

High-Voltage Driver Shrinks Design For Ultrasound Scanners, STMicroelectronics' STHV200ultrasound IC

For more details...

IGBT Modules With 800-A Rating Benefit Solar Central Inverters, Infineon Technologies' 62-mm half-bridge and common-emitter module portfolio with 1200-V TRENCHSTOP IGBT7 chips, which includes the FF800R12KE7



Articles published in the January through December 2023 issues

SJ MOSFETs Combine Low-Noise Characteristics With Fast Reverse-Recovery Time, ROHM Semiconductor's R60xxRNx series 600-V superjunction (SJ) MOSFETs

For more details...

September 2023:

Hall-Effect And Integrated-Shunt Current Sensors Offer High Accuracy, Texas Instruments' TMCS1123 Hall-effect and EZShunt current sensors For more details...

650-V IGBTs Target Energy-Efficient, Harsh-Environment Applications, Infineon's 650-V IGBT7 H7 TRENCHSTOP IGBTs

For more details...

Power Op Am Delivers High Power With High Speed, Apex Microtechnology's PA198 precision power amplifier

For more details...

Device Combines 3-A, 600-V Rectifier And 200-W TVS In 5-mm x 6-mm Package, Vishay Intertechnology's R3T2FPHM3 standard rectifier and transient voltage suppressor

For more details...

Automotive-Grade, Hall ICs Feature 42-V Withstand Voltage, ROHM's BD5310xG-CZ/BD5410xG-CZ series Hall ICs

For more details...

65-GHz 12-bit Oscilloscope Platform Features Serial Data Analysis Software, Teledyne LeCroy's WaveMaster 8000HD high-definition oscilloscope (HDO) platform

For more details...

October 2023:

Robust Integrated GaN Platform Is Optimized For High-Power Applications, Navitas Semiconductor's GaNSafe Power ICs

For more details...

Power Supply Design Tool Adds Schematic Export, Shortens Time To PCB Layout, Power Integrations' PI Expert design tool



Articles published in the January through December 2023 issues

Configurable Power Supply Series Adds Liquid Cooling Option, Advanced Energy's iHP Liquid configurable power solutions

For more details...

EMCA Controller With EPR Protects Up To 54 V For Passive USB-C Cables, Infineon Technologies' EZ-PD CMG2 USB-C electronically marked cable assembly (EMCA) controller

For more details...

Planar Schottkys Come In Thinner DPAKs, Taiwan Semiconductor's ThinDPAK family of ultra-fast-recovery Schottky rectifiers

For more details...

Demo Boards For High Efficiency AC-DC Power Supply Technology, From Saelig comes Pulsiv's PSV-AD-250-DS evaluation boards for the OSMIUM microcontroller family

For more details...

November 2023:

Semiconductor Technology Pushes Silicon Beyond Its Assumed Limits For Power Devices, iDEAL Semiconductor's SuperQ technology

For more details...

Switcher ICs Feature 1250-V GaN Switch, Power Integrations' InnoSwitch3-EP 1250-V ICs

For more details...

GaN-Based Reference Design Shrinks Motor Drives For eBikes, Robots And Drones, EPC's EPC9194 motor drive inverter reference design

For more details...

16-bit MCU Delivers High Performance For Motor And Power Supply Control, Renesas Electronics' RL78/G24 MCU

For more details...

Online Course Covers Basic To Advanced Aspects Of PFC, Siri Subrahmanyam has announced Udemy's course on "Power Electronics Design Series: Power Factor Correction"

For more details...

ESD Clamping Devices Offer ±30 kV Protection For Wearables, Taiwan Semiconductor's TESD series of single-channel ESD clamping diodes



Articles published in the January through December 2023 issues

December 2023:

Power Magnetics Component Roundup

Power Inductors

- Semi-Shielded Inductors Offer High-Temperature Operation And Cost Savings, Bourns' Model SRN8040HA series AEC-Q200-compliant inductors
- Shielded Inductors Specify High Saturation Currents, Würth Elektronik's WE-HEPC inductor series NiZn-ferrite-based self-shielded inductors
- Toroidal PFC Inductors Use Flat-Wire Windings For Lower Losses, Würth Elektronik's WE-TORPFC inductor series has added 17 parts
- Semi-Shielded Power Inductors Have Enhanced Mechanical Strength, Bourns' automotive-grade inductor models SRN2010BTA, SRN2510BTA, SRN3010BTA, SRN3012BTA and SRN3015BTA
- Automotive-Grade Two-In-One Inductor For Class D Amplifier, Sumida's D2EP21D15 pin-type two-in-one inductor
- Shielded Metal Inductors Offer Wide Inductance Range, Sumida's CDSM70D52/T150 and CDSM12D63/T150 magnetically shielded inductors
- Coupled Inductors Enable High Efficiency, TDK's B82559S EPCOS ERUC23 flat-wire coupled inductor series
- Metal Compound Molding Inductors Deliver Low DCR In Low Profile, Sumida's CDMT series molding type inductors
- Shielded High-Power Inductor Has Pin-Type Structure, Sumida's DPQ5050/T150 flat-wire-wound, ferrite-core-based inductor
- Inductors Stand Just 0.55-mm Tall, TDK's PLEA85 series high-efficiency inductors for battery-powered wearables
- Composite-Core Inductors Come in Additional Case Sizes, Pulse's PA/PM2241 and PA/PM2242/43/44 series inductors in 8080 and 10xx case sizes
- Shielded Ferrite Inductors Offer Wide Inductance Range, Sumida's CDRH5D28RB/T125 1- to 330-µH inductors



Articles published in the January through December 2023 issues

Transformers

- 2-W LLC Transformer For SiC And GaN Drive Applications, Pulse's PMT6709NL LLC transformer
- Automotive-Grade Drive Transformer For IGBT-Based Inverters, Pulse's PMG3045NL forward gate-drive transformer
- Miniature, Automotive-Grade Push-Pull Transformer Offers Reinforced Insulation, Pulse's PMT9085 transformer series with innovative core and bobbin assembly
- Transformers Lower Interwinding Capacitance For Driving SiC MOSFETs, Würth Elektronik's WE-AGDT auxiliary gate-drive transformer series
- Three-Phase Isolation Transformers For Industrial And Medical Applications, Bel Fuse's 3PH series of three-phase dry type transformers

Chokes And Filters

- Unshielded Radial Drum Chokes Feature High Impedance And Inductance, Signal Transformer's DRC line of unshielded radial drum chokes including the 0406, 0608/0707/0807, 0810/1010, and 1018/1213 series
- Inductors And All-Mode Filters Now Operate Up To 5 GHz, SMP's inductive components and filter systems
- CM Chokes Mitigate EMI In Robotics And Motor Drives, Schaffner's RT common-mode choke series
- Multilayer Metal Power Inductors Shrink Size For Smart Phone Power Supplies, Taiyo Yuden's LSCND1412HKTR24ME, LSCND1412HKTR33MF and LSCND2012HKTR24MF inductors for choke coil applications in power supplies
- Sample Kit For Compact High-Current Chokes, TDK's sample kit for the B82559A*A033 series of shielded EPCOS ERU 33 high-current chokes

Current Sensors

 Rogowski Coils Bring Benefits Of Non-Ferromagnetic Core To Smart Metering, Pulse's RC series Rogowski coils



Articles published in the January through December 2023 issues

Transient Load Steppers Deliver Fast Edge Rates And Are Highly Customizable, Picotest's high-speed transient load current steppers

For more details...

62-mm Package For SiC MOSFETs Enables Higher Efficiency And Power Density, Infineon Technologies' CoolSiC MOSFET modules

For more details...

650-V GaN Power Switch Integrates Lossless Current Sensing, GaNPower International's GPI65060DFC power switch

For more details...

Flyback Architecture Delivers High Efficiency For Applications Below 120 W, Eggtronic's QuarEgg primary-side regulated flyback solution

For more details...

Full-Bridge Drivers For Brushed DC Motors Are Scalable And Flexible, STMicroelectronics' STSPIN948 and STSPIN958 are scaleable full-bridge drivers For more details...

1200-V SOT-227 SiC MOSFET Modules Are Designed For High Reliability, SemiQ's QSiC silicon carbide modules