

Power Magnetics Component Roundup

by David G. Morrison, Editor, [How2Power.com](#)

This article highlights the latest introductions of power magnetic components, presenting news about power inductors, transformers, chokes, ferrite beads and related literature introduced over the past six months. Magnetics vendors continue to introduce many power inductors for point-of-load dc-dc converters and VR voltage regulators as well as some for isolated dc-dc converters, ac-dc power supplies, battery chargers and solar inverters. Most of the new inductors are automotive qualified but there are also commercial-grade parts.

Targeted applications include automotive, computing, communications, industrial and renewable energy (solar and wind), which cover uses in servers, network gear, small cell, PoE, control boards, USB charging, lighting, infotainment and other systems. One of the more application-specific products is a series designed for use in true wireless stereo (TWS) devices. The general, long running trend of introducing new inductors with higher current capability in any given package size continues in various inductor styles.

New transformers include highly specialized components such as a 350-kW planar transformer in a full bridge topology, automotive grade push-pull transformers matched to off-the-shelf gate driver ICs and offered in different levels of isolation, transformers for other dc-dc topologies and gate driver circuits, and a surface-mount pulse transformer for small battery management systems. Among the new power magnetic component introductions are also several chokes and a series of filter beads providing filtering and noise suppression for various power applications. A updated catalog highlights one vendor's new ferrite cores.

This article represents a follow-up to the Power Magnetics Component Roundup published in the December 2020 issue and earlier [magnetics articles](#) published in How2Power Today.

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Power Inductors

Automotive-Grade Shielded Power Inductors Offer Low DCR, High Current Ratings

[Bourns](#) has added three new automotive-grade product series to its high-current shielded power inductor line. The Model SRP7028AA, SRP7050AA and SRP1038AA series are designed to meet today's high current density and high temperature requirements for power management and EMI filtering in dc-dc converters and power supplies in consumer, industrial, and telecom electronics applications.

These inductors are manufactured with a metal alloy powder core featuring low dc resistance, high heating/saturation current, low buzz noise, excellent temperature stability and shielded construction for low magnetic field radiation. Compared to previous Bourns designs, the SRP7028AA, SRP7050AA and SRP1038AA series feature lower DCR, higher Irms current and a more robust core structure. These models also have a higher saturation current rating, are AEC-Q200 compliant and have an operating temperature range from -55°C to +155°C.

The Model SRP7028AA, SRP7050AA and SRP1038AA series are available now. For additional information, see the "[Industry Leading AEC-Q200 Compliant Power Inductors](#)" page or see the [SRP7028AA](#), [SRP7050AA](#) and [SRP1038AA](#) datasheets.



AEC-Q200 Compliant High-Current Shielded Power Inductors

[Bourns'](#) Model SRP1580CA, SRP1510CA and SRP1513CA AEC-Q200-compliant, high-current shielded power inductor series are designed to support the high current density, high temperature and reliability requirements for power management and EMI filtering in a variety of consumer, industrial and telecom electronics applications. Inductors in the three new series offer high current capacity, compact size, high operating frequency and a high operating temperature range.



The inductors are manufactured with flat wire and Bourns' uniquely formulated metal alloy powder core using a molded construction manufacturing process. This process enables a superior magnetically shielded construction that offers low dc resistance (DCR), high heating and saturation current, low buzz noise and excellent temperature stability for low magnetic field radiation.

In addition, all of the models are built with flat enamel-coated wire with self-lead terminal for ultra-low DCR. Plus, the high-current shielded inductors have an operating temperature range of -55°C to +155°C, and are designed with the same 16.5-mm x 15.5-mm interchangeable footprint.

The Model SRP1580CA, SRP1510CA and SRP1513CA series are available now. For additional information, see the "[Industry Leading AEC-Q200 Compliant Power Inductors](#)" page or see the [SRP1580CA](#), [SRP1510CA](#) and [SRP1513CA](#) datasheets.

Composite Inductors Offer High Energy Storage Density

[Pulse Electronics](#) continues to expand its composite-core power inductor products adding three new platform sizes in the PA/PM5430/5432/5433 series. These products offer what's described as an "extremely high" energy storage density of 1300 uJ/cm³, current ratings in excess of 57 Apk and range in size from 4.3 mm x 4.3 mm x 3.1 mm up to 17.8 mm x 16.8 mm x 8mm.

Available in both commercial grade (-40°C to 130°C) and automotive grade (-55°C to 155°C) these products are well suited for high-performance applications in the communications, computing, industrial, and automotive market segments. Composite core inductors offer superior performance over similar molded powder inductors due to the high density core materials and low loss winding structure but retain the desired soft saturation characteristics.

Key features include automotive-grade reliability, compliance with IATF16949 standards; high current, low DCR and high efficiency; and high reliability, minimized acoustic noise and low leakage flux. For more information see the datasheets which are linked to in the table.

Table. Datasheets and dimensions for the PA/PM5430/5432/5433 series inductors.



Commercial	Automotive	Dimensions (mm) max
PA5430.XXXNLT	PM5430.XXXNLT	4.4 x 4.4 x 3.1
PA5432.XXXNLT	PM5432.XXXNLT	6.8 x 6.6 x 6.0
PA5433.XXXNLT	PM5432.XXXNLT	17.8 x 16.8 x 8.0

Molded Powder Inductors Come in Wide Range Of Values, Multiple Cross References

[Pulse Electronics'](#) nine new series of molded powder inductors, which include the commercial-grade PA540x and PA544x and the automotive-grade (AEC-Q200 qualified) PM540x and PM544x range in size from 3.7 x 3.4 x 1.2 mm up to 14 x 12.8 x 3.5 mm with inductances ranging from 100 nH to 70 µH at up to 55 Apk (see the table for additional specs). These devices are well suited for high-current, nonisolated dc-dc converters and voltage regulators used in computing, communications, industrial and automotive markets including servers, network gear, small cell, PoE, control boards, USB charging, lighting and infotainment systems.

"This significant product expansion ensures that Pulse has a soft-saturation, low audible noise power inductor to meet any customers' needs," said John Gallagher, product marketing, Power PBU, Pulse Electronics. Features includes multiple competitive cross references, high-current ratings and low DCR, high energy storage density and low profile.

Table. Key electrical specs and dimensions for nine new series of molded powder inductors.

Series	Dimensions (mm)	Inductance and current range
PA5400 & PM5400	3.7 x 3.4 x 1.2	0.2 µH/14 Apk to 10 µH/1.4 Apk
PA5401 & PM5401	3.7 x 3.4 x 2.0	0.10 µH/14 Apk to 10 µH/1.6 Apk
PA5402 & PM5402	4.7 x 4.3 x 2.0	0.10 µH/35 Apk to 20 µH/1.4Apk
PA5403 & PM5403	6.0 x 5.4 x 1.2	0.10 µH/35 Apk to 10 µH/1.8 Apk
PA5447 & PM5447	7.3 x 6.9 x 1.8	0.1 µH/45 Apk to 30 µH/2.1 Apk
PA5404 & PM5404	7.6 x 6.9 x 5.0	0.1 µH/65 Apk to 70 µH/2 Apk
PA5448 & PM5448	9.2 x 8.5 x 3.0	0.2 µH/35 Apk to 20 µH/4.9 Apk
PA5449 & PM5449	9.2 x 8.5 x 4.0	0.2 µH/55 Apk to 50 µH/2.9 Apk
PA5405 & PM5405	14 x 12.8 x 3.5	1.0 µH/40 Apk to 50 µH/5.5 Apk

To view, compare and download data sheets for these molded inductor series [utilize the Product Finder](#) and simply enter the prefix of the part number. Or see the datasheets linked to in the table.

High-Current Inductors For VR13.5 And VR14 Voltage Regulators

[Pulse Electronics](#) is expanding their portfolio of high-current, low DCR inductors used in single-phase PoL and multi-phase buck converters to power processors, memory modules, FPGAs and ASICs in servers, datacenters, networking systems and graphics cards. The five new families (PA5034.XXXHLT, PA5189.XXXHLT, PA5190.XXXHLT, PA5300.XXXHLT and PG2110.XXXHLT) provide lower core loss using the latest high-frequency materials, reduced DCR, and higher current ratings in standard footprints.

These series are available in multiple sizes, inductances, and current ratings. See the table for key specs. For more information, see the two-page [overview](#) of Pulse’s catalog of Power Bead inductors or see the datasheets linked to in the table below.

Table. New series of high-current inductors used in single-phase PoL and multi-phase buck converters.

Part Number	Datasheet	DCR mΩ Max	Dimensions (mm Max)			Inductance (nH)	Current (Apk)
			Length	Width	Height		
PA5034.XXXHLT	P904	0.44	10	7	10	330 to 440	30 to 40
PA5189.XXXHLT	P905	0.43	4.1	4.1	4.1	100	20.5
PA5190.XXXHLT	P906	0.3	5.2	5.1	5.5	50	78
PA5300.XXXHLT	P907	0.1	11	10	15.5	120 to 220	80 to 144
PG2110.XXXHLT	P908	0.242	8	5	8	100 to 180	41 to 75

Power Inductors Are Optimized For True Wireless Stereo Devices

[TDK's](#) PLEA67 is a series of inductors for use in true wireless stereo (TWS) devices. The inductors are intended for use in power circuits incorporated into wireless earphones used with smartphones, portable players and similar devices. In addition to an impressive rated current of 500 mA, the PLEA67 series inductors are said to offer one of the industry’s smallest external sizes, measuring at 1.0 mm (L) x 0.6 mm (W) x 0.7 mm (H). Furthermore, the inductors’ magnetic shield structure reduces magnetic flux leakage to pave the way for high density implementation.



Table. Key specifications for the PLEA67BBA2R2M-1PT00.

Inductance (μH) at 1 MHz	DCR (mΩ) Max./typ.	Rated current	
		Isat. (mA) max./typ.	Itemp (mA) max./typ.
2.2 ± 20%	620 / 510	500 / 600	500 / 800

TDK's original structure design and newly developed materials are used in its thin-film process to achieve a rated current of 500 mA, despite a high inductance of 2.2 μH for a size of 1.0 mm (L) x 0.6 mm (W) x 0.7 mm (H). See the table for additional specs and for more information, see the [website](#).

Inductor Delivers 420 A Saturation Current In 1500 Case Size

From [Vishay Intertechnology](#), the Vishay Dale IHL-1500VZ-5A is an automotive-grade through-hole inductor that delivers a 420-A saturation current for 30% inductance reduction in a compact 1500 case size. For automotive applications, the IHL-1500VZ-5A offers low typical DCR down to 0.12 m Ω and continuous high temperature operation to +155°C.

The shielded, composite construction of the AEC-Q200 qualified device enables a compact size of 38.1 mm by 38.1 mm by 21.9 mm to support up to 235 A of continuous dc current. According to the vendor, this allows the IHL-1500VZ-5A to replace much larger and more expensive competing solutions in high current input filters and 12-V/24-V/48-V dc-dc converters for switching regulators, differential mode and boost power factor correction chokes, and battery charging systems. The through-hole lead configuration can be modified at the customer's request to accommodate a bolt-on or weld termination.

The IHL-1500VZ-5A handles high transient current spikes without hard saturation. The device provides high resistance to thermal shock, moisture, and mechanical shock. For more information, see the IHL-1500VZ-5A [page](#). Samples and production quantities of the IHL-1500VZ-5A are available now.

Another version of this inductor, the Vishay Dale IHL-1500VZ-51 targets renewable energy, industrial, and telecom applications. This device also offers low typical DCR down to 0.12 m Ω and continuous high-temperature operation to +155°C, and its shielded composite construction of the device similarly enables a compact size of 38.1 mm by 38.1 mm by 21.9 mm.

But this version only supports up to 150 A of continuous dc current, which still allows the IHL-1500VZ-51 to replace much larger competing solutions in high current input filters and dc-dc converters for high temperature industrial and solar and wind power applications, in addition to switching regulators, differential mode and boost power factor correction chokes, and telecom base station power supplies.

The IHL-1500VZ-51 handles high transient current spikes without hard saturation, offering soft saturation of 20% at 195% of rated current. Samples and production quantities of the IHL-1500VZ-51 are available now. Pricing for U.S. delivery starts at \$7.50. For more information, see the IHL-1500VZ-51 [page](#).

Table. Key specifications for the IHL-1500VZ-5A.

Case size	1500
Dimensions (mm)	38.1 x 38.1 x 21.9
Inductance (μH)	0.68 to 3.3
DCR typ. (m Ω)	0.12 to 0.40
DCR max. (m Ω)	0.13 to 0.42
Heat rating current (A)	96 to 154 ^[1] and 150 to 235 ^[2]
Saturation current (A)	87 to 301 ^[3] and 124 to 420 ^[4]



1. Dc current (A) that will cause an approximate ΔT of 40°C after one hour. 2. Dc current (A) that will cause an approximate ΔT of 100°C after one hour. 3. Dc current (A) that will cause L_0 to drop approximately 20%. 4. Dc current (A) that will cause L_0 to drop approximately 30%.

High Current Inductors In The 1012, 4030 and 5030 Packages

[Würth Elektronik](#) has expanded its WE-HCM series of surface-mount high-current inductors with the addition of 1012, 4030 and 5030 packages. The flat-wire coils with a MnZn core are characterized by extremely low resistance, low core losses and a very high current carrying capacity.

The WE-HCM1012 high-current inductor takes up just 10 mm x 6 mm of space on the board and accommodates its flat-wire coil in a 12-mm-high package. The rated current of 84 A and saturation current over 125 A are also high values. The WE-HCM1012 is available in variants with inductances of 0.07 μH , 0.1 μH , 0.12 μH and 0.15 μH .



The two new WE-HCMs in 4030 and 5030 packages are also space-saving in their footprint and height. As they are only 3-mm high, they are suitable for use in convertible notebooks and tablets, for example. Applications include multiphase switching regulators, CPU/RAM power supply, power PC or graphics cards. Their saturation current goes up to 45 A and the rated current is 59 A.

All WE-HCM versions are specified for an operating temperature range from -40°C to $+125^{\circ}\text{C}$. The new WE-HCM inductors are now available from stock without a minimum order quantity. For more information, see the WE-HCM SMT High Current Flat Wire Inductor [page](#).

Inductors Offer High Saturation Currents In 2010 Case Size

The latest model in its WE-HCF-SMT series, Würth Elektronik's WE-HCF-2010 high-current inductor leverages improvements in its internal design to offer what the company says are significantly better characteristics than previously available inductors in this size. It features inductance values up to 2 μH and saturation currents up to 25% higher than comparable products in the market, according to Würth.

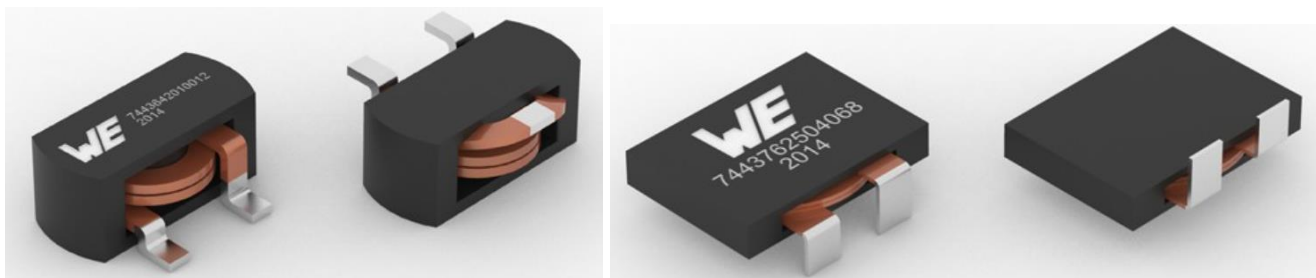
The magnetically shielded flat wire coil with MnZn core features a low resistance of 0.84 $\text{m}\Omega$ and low core losses. The recommended 3-pin contacting ensures mechanical stability of the WE-HCF, which is designed for an operating temperature of -40°C to $+125^{\circ}\text{C}$. Potential applications include POL regulators for FPGA, ASIC and GPU, high-efficiency dc-dc converters, high-current switching power supplies, forward converters, half-bridge and full-bridge converters, as well as battery chargers and solar inverters.

The company has also expanded its WE-HCFT line by introducing a device in the 2504 size. The WE-HCFT 2504, is said to have an unusually low overall height. Its flat wire coil with MnZn core is only 4 mm high. According to Würth, there are no standard competitors to the device in the market.

Current-carrying capability extends to 33 A, achieving one of the highest power densities and efficiency levels within the HCFT family. In addition, the company notes that the WE-HCFT 2504 exhibits excellent temperature performance over the entire operating temperature range of -40°C to $+125^{\circ}\text{C}$.

The WE-HCFT 2504 is available in inductance values of 1 μH , 2.2 μH , 4.7 μH , 6.8 μH and 10 μH . The product complies with the AEC-Q200 standard.

The WE-HCF 2010 and WE-HCFT 2504 are available immediately from stock with no minimum order quantity. For more information, see the WE-HCF SMT [page](#) and the WE-HCFT 2504 [page](#).



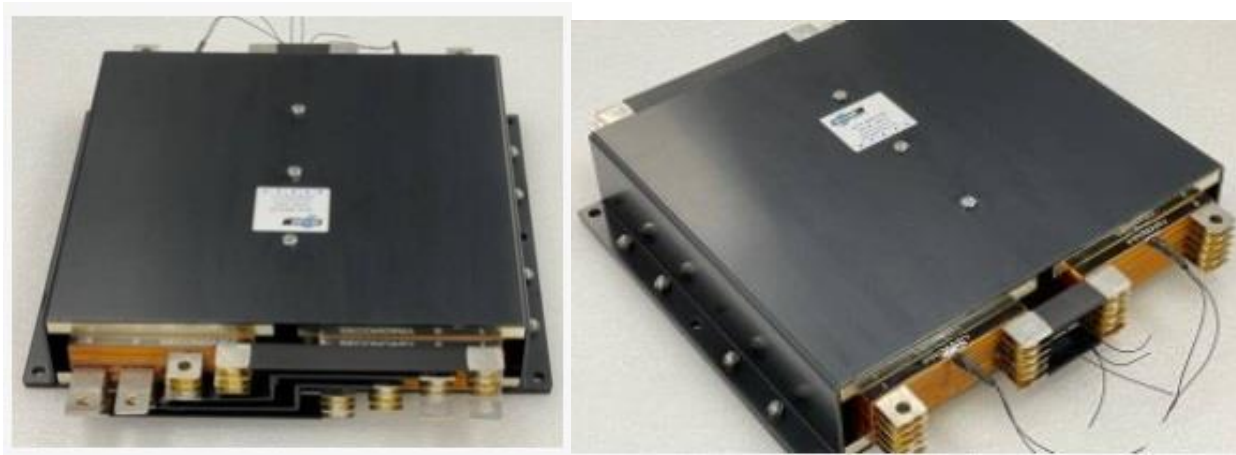
Transformers

350-kW Planar Transformer In Full-Bridge Topology

[Payton Planar Magnetics](#) has developed a high-power planar transformer design using two power sections of 175 kW each for a total of 350 kW of output power. The topology is a full bridge with -55°C to 150°C operation. Power dissipation is less than 1400 W with over 99.0% efficiency.

Input voltage range is 700 to 900 Vdc with output at 625 V and 560 Arms. Different terminal configurations can be made for a wide range of input and output voltages. Operating frequency is 50 kHz with less than 1 μH of leakage inductance. The transformer is designed to be placed on a cooling plate for maximum mechanical and thermal performance.

The transformer measures 400 mm (l) x 400 mm (w) x 70 mm (h). For more information, contact jim@paytongroup.com or see the [website](#).







Automotive-Grade Push-Pull Transformers Offer Several Levels Of Isolation

[Pulse Electronics](#) expands its IATF product portfolio with the release of the automotive-grade version of four of its popular push-pull transformer series. These transformers are matched to several available push-pull driver ICs including TI’s SN650x series, to deliver up to 3 W of power with insulation levels from functional to reinforced and up to 5.5 kVrms of galvanic isolation. They include the Pulse patented Sidecar package style, which achieve up to 12-mm creepage distance in a compact SMD footprint. See the table for part numbers and other specs.

“Our existing product line for AEC-Q200 qualified industrial-grade push-pull transformer have found a home in the automotive market for delivering isolation power between different voltage planes in communications, BMS and IGBT drive applications. The release of the automotive-grade version of these families respond to the market expectation for PPAP documentation and IATF production. These packaging styles respond to reoccurring automotive board size and height constraints as well as their insulation and isolation requirements,” said Gerard Healy, product marketing, Power PBU, Pulse Electronics.

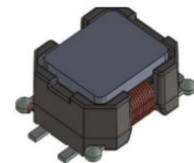
For more information, see the [website](#) or the datasheets linked to in the table.

Product Image	Industrial Series	Automotive Series	Length (mm)	Width (mm)	Height (mm)	Insulation type	Isolation (Vrms)	Creepage (mm)
	PH9085	PM2180	9.5	8.1	5.1	Functional	2500	-

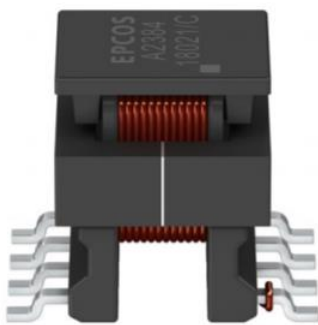
	PH9384	PM2185	12.5	9.2	7.6	Functional	4000	-
	PH9385	PM2155	17	16	7.5	Basic	4000	12
	PH9185	PM2190	13	10	12.5	Reinforced	5000	8

Pulse Transformer Provides High Withstand Voltage And Coupling

[Sumida's](#) CIUH7D46 is a surface-mount pulse transformer for small and low-profile battery management systems that achieves high withstand voltage and coupling ($K = 0.999$ typ.). It measures 10.5 x 7.5 x 5.0 mm and has an operating temperature range of -40°C to 125°C. For more information, see the [website](#).



Compact Transformers For DC-DC Converters Meet IEC 60664-1 Creepage And Clearance



[TDK's](#) EPCOS E10 EM series is a new range of insulated SMT transformers that are suitable for various dc-dc converter topologies and gate-driver circuits in e-mobility and industrial electronics. There are four models in the series, with basic winding insulation of a working voltage of 500 Vrms and reinforced insulation of 300 Vrms. The turns ratio is between 1:0.76 and 4:1, depending on the model.

Measuring just 11.7 x 13.15 x 11.35 mm, the E10 EM series transformers are extremely compact, meeting clearance and creepage requirements in accordance with the IEC 60664-1 standard (Np/Ns: min. 5.5 mm clearance, min. 6 mm creepage). Outstanding reproducibility and reliability are ensured thanks to highly automated production with an AOI final inspection. The component in the new EPCOS transformer series B78307A*A003 is qualified in accordance with AEC-Q200 Rev. D. For more information, see the [website](#).

Chokes And Ferrite Beads

Miniaturized Inductors Optimized For In-Vehicle PoC Systems

[Murata's](#) LQW21FT_0H series wire-wound ferrite inductors for power lines are being introduced as the world's smallest inductors with broadband impedance for the in-vehicle power-over-coax (PoC) circuit of SerDes-based interfacing. The product line is AEC-Q200 compliant and delivers a combination of broadband impedance and high-current performance. Devices in this series are available in a compact 0805 inch case size with 2-mm x 1.2-mm x 1.6-mm dimensions.

The LQW21FT_0H series are well suited for PoC functions. In addition to elevated broadband impedance levels, they exhibit superior saturation properties. Inductance values from 0.47 μH to 2 μH can be specified, with respective current ratings of 1 A and 0.45 A. Further, heightened operating temperatures make them well-suited for automotive applications up to 125°C.

“By leveraging our proprietary ceramic material and coil structure, Murata delivers these components in a miniaturized format that is unmatched by other manufacturers. The end-result is an advanced solution that enables engineers to streamline their designs and meet emerging market demands. We are proud of our contribution to help realize the transition towards safe, autonomous driving,” Jonathan Davis, director, Mobility Business Development Team.

For more information about the series, including specifications, samples, and purchase information, visit [here](#).

Round-Wire-Coil Common-Mode Chokes Increase Current Density

[Pulse Electronics](#)’ PAC6006 series of round-wire-coil common-mode chokes double the current density of existing industry solutions of similar size, according to the vendor. Complementing the company’s higher-power PA5140/41 series, the PAC6006 products use the low-cost EP13 core shape to introduce a smaller platform size (16 mm x 14 mm x 14 mm) with inductance values from 60 μH to 600 μH and a current rating of up to 17 A. With self-resonant frequencies (SRF) in the 3- to 12-MHz range and impedances exceeding 1 k Ω , these chokes are well suited for the filtering requirements of many modern applications.

“We have been delighted with the market interested in the PA514x series and the range of applications into which they have been designed. This smaller product offering responds to the ever-present expectation of continued miniaturization, particularly for applications where board space rather than component height is at a premium. Compared to existing products on the market that occupy a similar footprint, the compact round wire coil construction provides more than twice the current rating for a given inductance” said Gerard Healy, product marketing, Power PBU, Pulse Electronics.



The winding of the round wire coil is fully automated, making this product well suited for high-performance, high reliability applications in the data communications, computing, and industrial markets which also require a price competitive solution. Samples are available through the web portal [here](#) or via the Pulse distribution network.

To view, compare and download data sheets for the Pulse’s common-mode choke series utilize the [Product Finder](#) and simply enter the prefix of the part number or see the product [page](#).

Compact SMT High-Current Chokes Offer 1.0 μH To 30 μH

[TDK](#) has extended its range of EPCOS ERU-SMT power inductors with the new ERU19, ERU24 and ERU27 (B82559*) series. Each product line is comprised of up to 10 types, covering inductance values from 1.0 μH to 30 μH . Overall, saturation currents at 25°C range from 11.5 A dc to 101.5 A dc with DCR ranging from 0.46 m Ω to 17.0 m Ω

A key feature of the power inductors is their compact design. With a footprint of just 19.9 x 18.5 mm to 27.8 x 25.8 mm, they take up 14% less space on the printed circuit board than their predecessor. The low insertion heights are between 7.65 mm and 16.9 mm, depending on the type. This low-profile design is based on a flat rectangular helical winding technology, resulting in lower losses.

Designed for operating temperatures from -40°C to +150°C and AEC-Q200 qualified, the chokes feature an additional third soldering pad that contributes to high mechanical stability on the PCB. The components are used as output and storage chokes in a wide variety of power supply topologies. Use cases include point-of-load (POL) converters, dc-dc converters, high-current switch-mode power supplies and inverters for photovoltaic systems and automotive applications. For more information, see the ERU Chokes (EPCOS) [page](#).

Compact, Current-Compensated Ring Core Chokes Handle 10 A To 17 A

[TDK](#)’s new series of current-compensated EPCOS double-ring core chokes for the suppression of common-mode interference are available in three sizes with current handling capacities between 10 A and 17 A, and with a rated voltage of 250 V ac (50/60 Hz). Depending on the type, the inductance value is between 1.0 mH and 6.25 mH.



The plastic material of the base plate and spacer in the middle of the ring core conforms with UL 94 V-0, and the highest CTI value of >600. In order to meet the high requirements for specific applications in domestic appliances, in accordance with IEC 60335-2-xx, the plastic meets specifications for GWIT (+775°C), GWFI (850°C) and Ball Pressure (+190°C), as well as CTI >250. These high requirements are increasingly found in industrial applications, such as drives.

These EMC components offer extremely small dimensions in relation to the current capacity with dimensions of between 33 x 23 x 30 mm and 39 x 23 x 37 mm. Due to the leakage inductance of around 0.4%, the ring core chokes also suppress symmetrical interferences. The main areas of application are switch-mode power supplies, converters and

domestic appliances. Further information on the products can be found on the [Power Line Chokes \(EPCOS\) page](#).

CM Chokes Offer DM Suppression, High Current Capability

[Würth Elektronik](#)'s THT-mountable WE-FCLP is a common-mode powerline choke that also provides differential-mode suppression, while the WE-CMDC is a common-mode data line filter consisting of a data line and low-voltage common-mode choke with an 8-A rating.

The WE-FCLP has a compact design with a maximum height of 14.5 mm, yet achieves an inductance up to 100 mH. It can suppress common-mode interference up to 85 dB and, thanks to its high leakage inductance, it can be used not only for common-mode suppression but also for differential-mode suppression. WE-FCLP is suitable for applications like mains-powered LED drivers, electronic ballasts, switch-mode power supplies and mains filters.

The WE-CMDC is an AEC-Q200 Grade 1-qualified data line common-mode choke. Measuring 11 x 12 x 6 mm, it is also very compact. The choke has a current-carrying capacity up to 8 A and is available with high impedances of 700, 1000 and 1500 Ω. In addition to data and signal lines, applications include low-voltage dc power supplies and dc-dc converters.

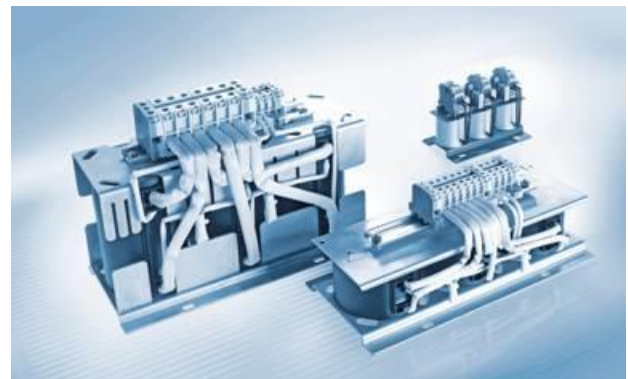
Both devices are available from stock without a minimum order quantity. For further information, see the WE-FCLP product [page](#) and the WE-CMDC product [page](#).

Compact, Low-noise, Low-loss Chokes For MRI And CT Applications

[SMP Sintermetalle Prometheus \(SMP\)](#) offers chokes for medical technology applications including inductive components used in magnetic resonance imaging (MRI) or computed tomography (CT) equipment. Designed as filter or mains chokes they are not only compact, low-loss and energy efficient but also exceptionally quiet in operation—essential qualities for demanding medical technology applications.

In MRI scanners, the components are installed in the "gradient amplifiers," which supply output voltages and currents and control the gradient coils that encode the resonance signals for subsequent image reconstruction. The filter and mains chokes are designed to ensure a clean sinusoidal waveform and low-loss feedback of the unused energy.

Special magnetostriction-free materials, which SMP develops and produces according to individual customer specifications, ensure that components run very quietly. The powder composite materials feature low eddy current and magnetic reversal losses. The components are noted for their low loss balances and optimal EMC properties. They are also maintenance-free.



The three-dimensional isotropy of the materials enables compact, lightweight structures, because the magnetic circuits are minimized. This also lowers the magnetic field strength, and the quantity of winding material used can be significantly reduced. The materials have a high saturation induction of up to 2 Tesla. The oscillation

behavior of the choke can be adjusted specifically by using certain materials or appropriate, magnetically coupled designs with multiple coils.

SMP components are designed for currents of up to 3000 A and for frequencies up to the gigahertz range. The components can be produced with dimensions from 19 mm to 300 mm and weights from 0.05 kg to 130 kg. All components are CE and EAC certified, and the materials used are UL-listed.

For more information, see the [SMP](#) website.

Chip Ferrite Beads For Automotive Applications Up To 175°C

[Murata's](#) BLM18KN_EH series chip ferrite beads provide noise suppression in power lines at temperatures up to 175°C. These devices target automotive applications include engine and transmission electronic control units (ECUs) and turbo motor controllers. The components also meet AEC-Q200 qualification requirements.

The new line is available in an 0603 size with dimensions of 1.6 mm × 0.8 mm. The devices have low direct current resistance (DCR), a wide operating temperature range and a rated current from 740 mA to 4,000 mA (–55°C to +125°C), 490 mA to 2,600 mA (+150°C), and 10 mA (+175°C). The typical impedance at 100 MHz ranges from 26 Ω to 1000 Ω.

By selecting a ferrite material that does not lose its magnetic properties at high temperatures, combined with an electrode to suppress temperature-related deterioration, the BLM18KN_EH series conforms to the AEC-Q200 standard for use up to 175°C. According to the company, this greatly improves design freedom allowing for the reduction of electromagnetic interference in high temperature areas that were once not possible. An additional benefit of the new series is its low DCR, which reduces heat generated and increases efficiency.

"As automotive electrification continues to increase, the demand for compact, lightweight, and robust electronic control substrates grows along with it—especially as more ECUs are positioned closer to the engine," stated Gerry Hubers, business development manager, Murata Americas. "Often, automotive engineers have been challenged to address power line noise suppression in these areas, instead implementing them in cooler areas making the design more complicated, time consuming, and possibly less effective. By leveraging our proprietary design and materials expertise, Murata delivers a solution that overcomes these obstacles."

For more information about the series, including specifications, samples, and purchase information, see the BLM18KN*EH search results [page](#).

Literature

Ferrite Cores Catalog Adds High-Permeability Material

[Magnetics](#) has updated its Ferrite Catalog, which includes the addition of 15,000 permeability (the company's highest) "M" material. The 76-page catalog also includes the following new core sizes:

- Toroids: 41606TC & 41607TC (15.9mm OD), 42506TC (25.34 mm OD) and 48619TC (85.7mm OD)
- E cores: 46022EC (60 mm OD)
- Planar E cores: 42217EC & 42214EC (22 mm OD) and 43809EC (38 mm OD)
- Block: extra-large 120-mm 49938FB
- Pot cores: 43428UG (43 mm OD)

For more information, see Magnetics' [Ferrite Catalog](#).