

Power Magnetics Component Roundup

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

Magnetic component manufacturers have been busy lately expanding their already large portfolios of power inductors and chokes, while also adding to their transformer offerings with more application-specific designs. However, whereas automotive-grade products have often dominated the power magnetics news in the past, the recent announcements reveal how component makers have been answering demands for specialized magnetics in other, high-reliability applications.

For example, one vendor has introduced a series of inductors and transformers for naval applications. These include some high-power components with very specialized uses such as a high-frequency self-inductor for use in degaussing systems intended to counter magnetic mines, and a self-transformer assembly for naval nuclear reactors. There's also a high-frequency transformer for power electronics that can handle tens of kilowatts and a high-power inductor for power distribution rated up to 300 kVA.

Another high-rel area that's inspired magnetic component developments is space. The same company that developed the magnetics for naval equipment has announced an integrated magnetic (transformer plus inductor) for a dual active bridge for power conditioning and distribution units in space systems. A different vendor has introduced a space-grade choke for EMI filtering and noise suppression that is particularly well suited for fast switching GaN and SiC-based designs.

Unlike the other high-rel products mentioned so far, the choke is a standard product. For those interested in inductors and common-mode chokes for space, there's also a white paper comparing two qualification frameworks—ESCC 3201 And MIL-STD-981. Designers can learn how optional testing can bridge the gap for missions requiring hybrid compliance.

If we cast the high-rel magnetics net wider, we discover chokes targeting railway and high-power three-phase industrial systems. Then even more standard inductors and chokes are found addressing other popular industrial application categories such as EV charging, energy storage, battery management, renewable energy and telecom infrastructure systems. Naturally, there are also some product developments for the application du jour—AI computing.

These products for data center power include custom planar magnetic matrix transformers for stepping down the emerging 800-V dc bus to GPU-level supply rails of just a few volts. On the more standard-product side, there are high-current TLVR inductors for powering GPUs and CPUs.

Beyond these product introductions, there are still many inductors and chokes being announced for a range of automotive, consumer and other applications. Magnetic component vendors continue to innovate to achieve higher electrical performance and shielding in ever-smaller case sizes. Covering power magnetics news released over the first half of this year, this article represents a follow-up to the Power Magnetics Component Roundup published in the December 2025 issue and earlier [magnetics articles](#) published in How2Power Today.

Power Inductors

- Custom Naval Magnetic Solutions Support Mission-Critical Reliability (Exxelia)
 - High-Frequency Self-Inductor
 - High-Power Inductor
- Inductors Deliver High Performance In 0806 And 1210 Case Sizes (Vishay Intertechnology)
- Metal Compound Molding Inductors Come In Range Of Values (Sumida)
- Flat-Wire Toroidal Inductors Deliver High Performance At High Frequencies (Bel Fuse's Signal Transformer group)
- Semi-Shielded Inductor Offers High Inductance And Bottom-Soldered Lead-Wire (Bourns)

- High-Current Shielded Inductors Offers Small Footprint (Bourns)
- High-Current Ferrite Shielded Inductor For Automotive And Industrial Power Designs (YAGEO Group)
- Low-Profile Inductor In 1212 Case Size Saves Space In Commercial Applications (Vishay Intertechnology)
- Metal Compound Molding Inductors Deliver High Performance And Shielding (Sumida)
- Metal Composite Inductors Operate To 165°C (Sumida)
- SMD Metal Inductor Supports DC-DCs For Automotive ECUs (Sumida)
- Through-Hole Inductors Lower Core Losses And Cost (Vishay Intertechnology)
- Shielded TLVR inductors Offer Ratings Up To 150 A in Small Footprints (Coilcraft)

Transformers

- Smart Integrated Magnetics Solution For Space Power Conversion (Exxelia)
- Custom Transformers For Naval Applications (Exxelia)
 - A Low-Frequency Isolated Transformer
 - A High-Frequency Transformer
 - A Self-Transformer Assembly For Naval Nuclear Reactors
- LLC Transformer Delivers Up To 3.6 kW In 53- x 52- x 43-mm Form Factor (YAGEO Group)
- LLC Half-Bridge Transformers For Gate Driver Bias Supply Offer Small Size (Coilcraft)
- Advanced Planar Magnetics For Next-Generation AI Infrastructure (Payton Planar)

Chokes And Filters

- Inductive Components With High-Frequency Stability For Railway Applications (SMP Sintermetalle Prometheus)
- Space-Grade Common-Mode Choke Provides EMI Filtering For GaN And SiC Switching (Vishay Intertechnology)
- Three-Phase Common-Mode Chokes Deliver EMI Suppression For High-Power Systems (YAGEO Group)
- Common-Mode Chokes Offer Ratings To 1250 V DC (TDK)

Bobbins

- Magnetic Component Supplier Adds Bobbins (PREM Magnetics)

Design Tools

- Selection Tool For Current Sense Transformers (Würth Elektronik)

Literature

- Article Explores Benefits Of Planar Magnetics in AI Data Centers And Cloud Computing (Payton Planar)
- Website Offers Comprehensive Details On Ferrites and Other Magnetic Materials (Sumida)

Power Inductors

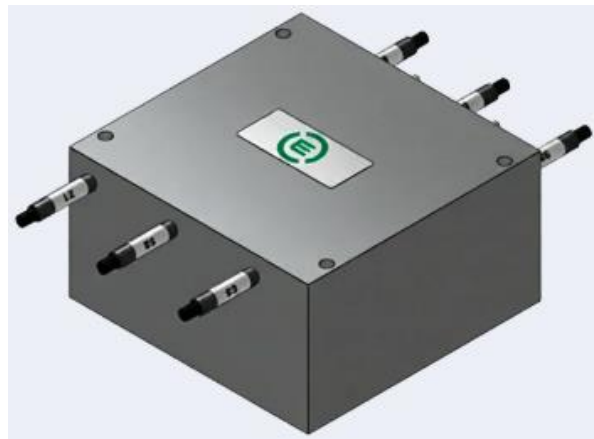
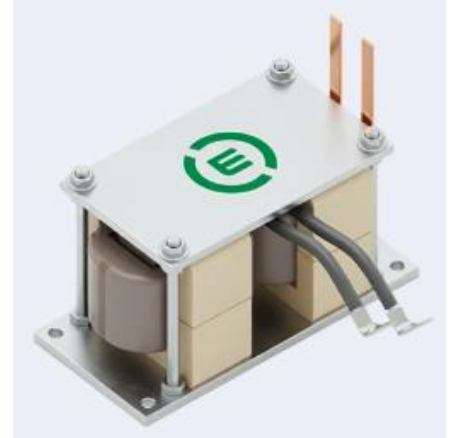
Custom Naval Magnetic Solutions Support Mission-Critical Reliability

[Exxelia](#) offers build-to-spec magnetic solutions for demanding naval applications. Five flagship products demonstrate the breadth of their expertise in this area, ranging from precision measurement transformers to water-cooled high-power inductors. First, the inductor products are described here.

Exxelia's high-frequency self-inductor is designed for use in degaussing systems used to counter magnetic mines and reduce a vessel's signature. Degaussing systems rely on current loops driven by sophisticated high-frequency amplifiers. In these applications, the high frequency self-inductor must withstand intense currents while effectively filtering harmonics to generate a "clean" magnetic field.

This product can handle strong dc and ac superimposed currents without core saturation, thanks to a rigorous selection of magnetic materials (powder cores, nanocrystalline) and a rugged mechanical design proofed against the vibrations of rotating machinery.

For more information, see the [High Frequency Self-Inductor for degaussing systems](#) page.



Exxelia's high-power inductor for main power distribution is capable of handling up to 300 kVA. This component is described as a prime example of the company's ability to integrate complex cooling systems.

Utilizing indirect water cooling, this inductor offers exceptional power density compared to air-cooled solutions, allowing for significant space savings in the engine room. It features integrated heat exchangers to efficiently evacuate heat, allowing the inductor to operate at full load (up to 500 kHz) in hot ambient environments (up to 75°C), while remaining watertight and pressure-resistant (tested to 12 Bars).

For more information, see the [High Power Inductor](#) page. And for more on other customized solutions, contact the company's [Magnetics R&D Team](#).

Inductors Deliver High Performance In 0806 And 1210 Case Sizes

[Vishay Intertechnology's](#) commercial-grade IHLL-0806AZ-1Z and IHLL-1210AB-1Z and automotive-grade IHLP-0806AB-5A and IHLP-1210ABEZ-5A power inductors come in the 2.0-mm by 1.6-mm by 1.2-mm 0806 and 3.2-mm by 2.5-mm by 1.2-mm 1210 case sizes. These inductors achieve the same performance as the next-smallest competing inductor in 11% (1210) and 64% (0806) smaller footprints, while offering higher operating temperatures, wider range of inductance values, and lower DCR for increased efficiency.

Offering inductance values from 0.24 μH to 4.70 μH and typical DCR down to 6.6 m Ω , the terminals of the IHLL-0806AZ-1Z and IHLL-1210AB-1Z are plated on the bottom only, enabling a smaller land pattern for more compact board spacing. The terminals of the IHLP-0806AB-5A and IHLP-1210ABEZ-5A are plated on the bottom and sides, allowing for the formation of a solder fillet that adds mounting strength against high mechanical shock, while simplifying solder joint inspection.

The AEC-Q200 qualified devices provide reliable performance up to +165°C, which is 10°C higher than the closest competing composite inductor, and typical DCR down to 15.0 m Ω .

Delivering improved performance over ferrite-based technologies, all four devices feature a robust powdered iron body that completely encapsulates their windings—eliminating air gaps and magnetically shielding against crosstalk to nearby components. Meanwhile their soft saturation curve provides stability across the entire operating temperature and rated current ranges.

Packaged in a 100% lead (Pb)-free shielded, composite construction that reduces buzz to ultra low levels, the inductors offer high resistance to thermal shock, moisture, and mechanical shock, and handle high transient current spikes without saturation.

RoHS-compliant, halogen-free, and Vishay Green, the Vishay Dale devices are designed for dc-dc converters, noise suppression, and filtering in a wide range of applications. The IHLP-0806AB-5A and IHLL-1210ABEZ-5A are well suited for automotive infotainment, navigation, and braking systems; ADAS, LiDAR, and sensors; and engine control units.

The IHLL-0806AZ-1Z and IHLL-1210AB-1Z are intended for CPUs, SSD modules, and data networking and storage systems; industrial and home automation systems; TVs, soundbars, and audio and gaming systems; battery-powered consumer healthcare devices; medical devices; and telecom equipment; and precision instrumentation.

Table. Device specifications for IHLL and IHLP inductors in 0806 and 1210.

Series	IHLL-0806AZ-1Z	IHLP-0806AB-5A	IHLL-1210AB-1Z	IHLP-1210ABEZ-5A
Inductance at 100 kHz (μH)	0.24 to 4.70	0.22 to 0.47	0.24 to 4.70	0.47 to 4.70
DCR typ. at 25°C (mΩ)	16.0 to 240.0	15.0 to 21.0	6.6 to 115.0	18.0 to 150.0
DCR max. at 25°C (mΩ)	20.0 to 288.0	18.0 to 25.0	10.0 to 135.0	22.0 to 180.0
Heat rating current typ. (A)⁽¹⁾	1.3 to 6.3	4.6 to 5.8	2.3 to 9.2	1.8 to 5.1
Saturation current typ. (A)⁽²⁾	1.5 to 6.5	4.5 to 5.1	2.5 to 9.0	2.0 to 6.5
Saturation current typ. (A)⁽³⁾	1.8 to 7.2	5.4 to 7.5	2.9 to 11.5	2.5 to 8.2
Case size	0806	0806	1210	1210
Temperature range(°C)	-55 to +125	-55 to +165	-55 to +125	-55 to +165
AEC-Q200	No	Yes	No	Yes

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

Samples and production quantities of the IHLL-0806AZ-1Z, IHLL-1210AB-1Z, IHLP-0806AB-5A, and IHLP-1210ABEZ-5A series inductors are available now, with lead times of 10 weeks. Pricing for U.S. delivery only starts at \$0.07 per piece in 10,000-piece quantities. For more information, see the [IHLL-0806AZ-1Z](#), [IHLL1210AB-1Z](#), [IHLP-0806AB-5A](#) and [IHLP1210ABEZ-5A](#) product pages.

Metal Compound Molding Inductors Come In Range Of Values

[Sumida's](#) 1265CDMCC/DS power inductors feature metal compound molding construction to achieve high electrical performance and high magnetic shielding, while also offering low audible core noise, low profile and high current. Operating temperature range is -55°C to 125°C including the coil's temperature rise. Inductance ranges from 1 to 33 μ H with saturation current ratings from 34.8 to 8.50 A as listed in the table.

Table. Key specs for the 1265CDMCC/DS power inductor series.

Part Name	Inductance [Within] (μ H) $\times 1$	D.C.R. at 20°C [within] (A) Max. (Typ.) (m Ω)	Saturation Current (A) Max.(Typ.) $\times 2$	Temperature Rise Current (A) (Typ.) $\times 3$
1265CDMCCDS-1R0MC	1.00 \pm 20%	1.80 (1.50)	34.80 (41.00)	(33.00)
1265CDMCCDS-1R5MC	1.50 \pm 20%	2.40 (2.00)	34.00 (40.00)	(28.50)
1265CDMCCDS-2R2MC	2.20 \pm 20%	3.40 (2.80)	27.20 (32.00)	(23.00)
1265CDMCCDS-3R3MC	3.30 \pm 20%	4.50 (3.70)	20.40 (24.00)	(21.00)
1265CDMCCDS-4R7MC	4.70 \pm 20%	8.20 (6.80)	19.50 (32.00)	(15.00)
1265CDMCCDS-5R6MC	5.60 \pm 20%	11.20 (9.30)	18.70 (22.00)	(13.00)
1265CDMCCDS-6R8MC	6.80 \pm 20%	11.50 (9.50)	17.80 (21.00)	(12.50)
1265CDMCCDS-8R2MC	8.20 \pm 20%	13.20 (11.00)	17.00 (20.00)	(12.00)
1265CDMCCDS-100MC	10.00 \pm 20%	18.00 (15.00)	15.30 (18.00)	(10.00)
1265CDMCCDS-120MC	12.00 \pm 20%	21.00 (17.50)	14.00 (16.50)	(8.50)
1265CDMCCDS-150MC	15.00 \pm 20%	25.50 (21.00)	11.00 (13.00)	(7.50)
1265CDMCCDS-220MC	22.0 \pm 20%	36.50 (30.50)	10.20 (12.00)	(7.00)
1265CDMCCDS-330MC	33.00 \pm 20%	50.00 (42.00)	8.50 (10.00)	(6.00)

Applications include notebook, ultrabook, tablet PC, LCD display, high-current POL converters, low-profile, high-current power supplies, battery-powered devices, and dc-dc converters in distributed power systems. For more information, see the 1265CDMCC/DS product [page](#).

Flat-Wire Toroidal Inductors Deliver High Performance At High Frequencies



From [Bel Fuse's Signal Transformer group](#), the SHFWT series helical-wound flat-wire toroidal inductors address demand for efficient, low-loss, high-frequency power components. The low-profile SHFWT series uses an edge-wound flat copper wire construction that allows more turns in a single winding layer. This approach reduces interwinding capacitance skin and proximity effects, delivering lower ac resistance and improved performance at higher frequencies.

Paired with high-grade core materials, the design minimizes overall power loss and heat generation. Both vertical and horizontal

mounting options support flexible integration across diverse system architectures.

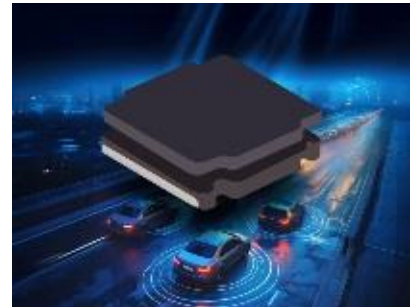
"Engineers designing compact, power-dense systems face real challenges managing thermal dissipation and efficiency at higher switching frequencies," said Anthony Kourtessis, design engineer. "The SHFWT series addresses this directly, the single-layer flat wire construction and premium core materials work together to keep losses low without compromising on inductance or current handling capability."

The SHFWT series is engineered for demanding applications across data centers, industrial power electronics, telecom, automotive, and renewable energy sectors. Typical applications include switching power supplies, UPS systems, dc-dc converters, battery chargers, and energy storage inverters where efficiency and thermal performance are critical. For samples or to request a quote, contact Bel's Signal [team](#).

Semi-Shielded Inductor Offers High Inductance And Bottom-Soldered Lead-Wire

[Bourns'](#) Model SRN3010BTA-330M semi-shielded power inductor features an inductance value of 33 μH for efficient current handling and a bottom-soldered lead-wire for increased mechanical strength and stability.

This power inductor's 1-mm max. profile semi-shielded structure combines the features of non-shielded and shielded inductors, providing lower magnetic field radiation than non-shielded inductors, but is considered a more cost-effective alternative to fully-shielded ferrite-based inductors. Offering an operating temperature range from -55°C to $+125^{\circ}\text{C}$, the SRN3010BTA series is AEC-Q200 compliant and automotive grade.



These inductors are well-suited for automotive systems, dc-dc converters and power supplies in consumer, industrial, and telecom applications where higher inductor reliability is often required. The SRN3010BTA-330M is available now and is RoHS compliant and halogen free. For more detailed product information, see the Power Inductors - SMD Semi-Shielded [page](#) or the [datasheet](#).

High-Current Shielded Inductors Offer Small Footprint

[Bourns'](#) SRP2008DP series of high-current shielded power inductors is designed for applications that need to push the limits of board-space efficiency. Constructed with a metal-alloy powder core and packaged in a low-profile 0.8-mm footprint, the SRP2008DP series delivers the saturation current capacity that power dense dc-dc converter designs demand—without the design layout penalties that typically accompany such performance, says the vendor.



Because power density requirements have continued to climb across consumer electronics, IoT devices and smaller industrial equipment, designers face a persistent tradeoff between inductor performance and physical size. Radiated emissions and signal integrity are growing concerns in these crowded layouts, where interference between adjacent components can undermine system reliability and complicate EMC compliance.

Shielded magnetics help manage these risks, but shielded components have historically occupied more board real estate than unshielded alternatives. The SRP2008DP series' metal-alloy powder core design and compact size addresses these challenges directly.

The metal-alloy powder core offers high resistivity that suppresses eddy currents and reduces core losses at high switching frequencies, preserving signal integrity in noise-sensitive designs. Contained flux minimizes magnetic coupling to nearby traces and components, reducing the risk of interference in densely populated layouts. High saturation current is supported without core collapse under load, maintained across the full operating range

"As electronic systems grow more sophisticated while shrinking in size, the components inside them have to keep pace. The Bourns SRP2008DP series gives engineers all the safety, signal integrity and compliance benefits of a shielded, high-current inductor in a footprint that doesn't compromise their layout," said Craig Wedley, magnetic products engineering director at Bourns.

The SRP2008DP series covers an inductance range of 0.24 μH to 4.70 μH , heating current (I_{rms}) from 1.10 A to 3.50 A, and saturation current (I_{sat}) from 1.60 A to 5.50 A. Devices features a low-profile 0.8-mm profile and a 2.0- x 1.6-mm footprint designed to drop into compact power conversion circuits with minimal routing changes. Other features include an operating temperature range of -40°C to $+125^{\circ}\text{C}$, and RoHS-compliant, halogen-free package.

The SRP2008DP series is available now through Bourns' authorized distribution network. For more information, see the SRP2008DP product [page](#). Samples may be requested through [Bourns Customer Service](#).

High-Current Ferrite Shielded Inductor For Automotive And Industrial Power Designs

[YAGEO Group's](#) APCA7045 series is designed to deliver higher current capability, stable inductance, and low power loss within a compact board space. Suitable for both industrial and automotive power platforms, the inductors offer a robust ferrite shielded structure, wide inductance range, and automotive-grade reliability.

These devices are optimized for dc-dc converters, VRM/VRD controllers, and other high-current power circuits. With a 7.0- x 7.0- x 4.5-mm compact footprint, the APCA7045 balances size, efficiency and electrical performance, making it well suited for space constrained designs that still demand high current handling and thermal stability.

Key features include a ferrite Ni Zn/Mn Zn drum core, which enables high inductance stability under dc bias conditions and a ferrite ring core shield structure that minimizes magnetic flux leakage and EMI. High dc bias performance is another benefit as the inductors maintain inductance integrity even at elevated current



Other benefits of the series include a wide inductance range of 1 μH to 470 μH , a breakdown voltage (BDV) up to 1000 V, low RDC for improved efficiency and an operating temperature range of -55°C to $+155^{\circ}\text{C}$, no thermal aging and the availability of automotive-grade devices.

Typical electrical characteristics include an inductance tolerance of $\pm 20\%$ or $\pm 30\%$, a test frequency of 100 kHz, an RDC range of 0.0117 Ω to 1.56 Ω . In addition, I_{sat} range is up to 6.5 A, and I_{rms} range is up to 4.8 A. This performance profile makes APCA7045 well suited for designs where efficiency, thermal margin, and EMI control are critical, says the vendor. For more information, see the product [brief](#).

Low-Profile Inductor In 1212 Case Size Saves Space In Commercial Applications

[Vishay Intertechnology's](#) Vishay Dale IHL1212-EZ-1Z is a low-profile, high-current inductor in the compact 1212 case size. For space-constrained commercial applications, the inductor offers comparable electrical performance to larger devices. Its compact 3.0-mm x 3.0 mm footprint comes with three profile options: 1.2 mm, 1.5 mm, and 2.0 mm.

The device is optimized for energy storage in low profile dc-dc converters for PMICs, power line noise suppression, and filtering. Applications for the inductor include industrial drives and tools; home and building control; computers and computer peripherals; consumer entertainment and healthcare devices; telecom equipment; and medical instrumentation.

Delivering high efficiency for these applications, the IHL1212-EZ-1Z offers typical DCR from 8.6 m Ω to 50.4 m Ω and a wide range of inductance values from 0.22 μH to 3.3 μH . The inductor provides rated current to 14.3 A, operates over a temperature range of -55°C to $+125^{\circ}\text{C}$, and handles high transient current spikes without saturation.

Offering improved performance over ferrite-based technologies, the IHL1212-EZ-1Z features a robust powdered iron body that completely encapsulates its windings—eliminating air gaps and magnetically shielding against crosstalk to nearby components—while its soft saturation curve provides stability across the entire operating temperature and rated current ranges.

Packaged in a 100% lead (Pb)-free shielded, composite construction that reduces buzz noise to ultra low levels, the inductor offers high resistance to thermal shock, moisture, and mechanical shock. The device is RoHS-compliant, halogen-free, and Vishay Green.

Table. Key specs for the IHLP1212-EZ-1Z.

Height (mm)	1.2	1.5	2.0
Inductance (μH)	0.22 to 1.0	0.22 to 1.5	0.22 to 3.3
DCR typ. (mΩ)	8.6 to 29.4	8.6 to 36.9	8.6 to 50.4
DCR max. (mΩ)	10.3 to 33.8	10.3 to 41.4	10.3 to 54.9
Heat rating current (A)⁽¹⁾	6.1 to 11.1	5.5 to 11.1	4.5 to 11.1
Saturation current (A)	5.1 to 9.5 ⁽²⁾ / 6.7 to 12.4 ⁽³⁾	5.0 to 11.0 ⁽²⁾ / 6.5 to 14.3 ⁽³⁾	3.7 to 10.5 ⁽²⁾ / 4.8 to 13.7 ⁽³⁾
SRF (MHz)	66 to 185	51 to 202	30 to 214

1. Dc current (A) that will cause an approximate ΔT of 40°C
2. Dc current (A) that will cause L₀ to drop approximately 20%
3. Dc current (A) that will cause L₀ to drop approximately 30%

Samples and production quantities of the IHLP1212-EZ-1Z are available now, with a lead time of 10 weeks. Pricing for U.S. delivery only starts at \$0.463 per piece for the IHLP1212AEEZ1R0M1Z and IHLP1212BZEZ1R0M1Z, and \$0.489 per piece for the IHLP1212ABEZ1R0M1Z. For more information, see the [IHLP1212-EZ-1Z](#) page.

Metal Compound Molding Inductors Deliver High Performance And Shielding

[Sumida's](#) CDMCE/DS power inductor series feature metal compound molding construction to achieve high electrical performance and high magnetic shielding, while also offering low audible core noise, low profile and high current. Operating temperature range is -55°C to 125°C including the coil's temperature rise.



Devices include the 0420CDMCE/DS, measuring 4.3 x 4.3 x 2.0 mm max; the 0430CDMCE/DS, 4.3 x 4.3 x 3.0 mm max; the 0524CDMCE/DS, 5.5 x 5.3 x 2.4 mm max; and the 0530CDMCE/DS, 5.5 x 5.3 x 3.0 mm max.

Applications include notebook, ultrabook, tablet PC, LCD display, server application, high-current POL converters, power supplies, battery-powered devices, and dc-dc converters in distributed power systems.

For more information, see the [0420CDMCE/DS](#), [0430CDMCE/DS](#), [0524CDMCE](#) and [0530CDMCE/DS](#) pages.

Metal Composite Inductors Operate To 165°C

[Sumida's](#) MCDMC*****/DS power inductor series features high-temperature metal composite inductors with a magnetically shielded structure in metal composite core. This allows a large current to flow with low EMI and low core loss. Operating temperature range is -55°C to +165°C including the coil's temperature rise.



Devices include the MCDMC201612/DS, measuring 2.2 x 1.8 x 1.2 mm max and the MCDMC252012/DS, which is 4.3 x 4.3 x 3.0 mm max.

Applications include voltage regulator modules (VRMs); low-profile high-current power supplies; dc-dc converters for CPUs in notebook PCs; cellular phones, LDC displays, HDDs, DVCs, DSCs, PDAs, etc.; and thin-type on-board power supply modules for exchangers.

For more information, see the [MCDMC201612/DS](#) and [MCDMC252012/DS](#) pages.

SMD Metal Inductor Supports DC-DCs For Automotive ECUs

[Sumida's](#) WMT1513T150/DS is an AEC-Q200-qualified SMD metal inductor that features soft saturation, high current rating and low DCR. This device is well suited to high-reliability automotive applications. Absolute maximum voltage across the inductor is 50 V. Operating temperature range is -55°C to +150°C including the coil's temperature rise.

Applications include dc-dc converters for ECU and other high-rel automotive applications. Note that these products are not intended for use in airbag or braking system applications.



Table. Key specs for the WMT1513T150/DS series.

Part Name	Inductance [Within] (μH) ※1	D.C.R. at 20°C [within] (A) Max. (Typ.) (mΩ)	Saturation Current (A) Max. (Typ.) ※2	Temperature Rise Current (A) (Typ.) ※3
WMT1513T150DS-4R7MC	4.70 ± 20%	3.30 (2.50)	35.00 (41.00)	27.00 (31.00)
WMT1513T150DS-5R6MC	5.60 ± 20%	3.90 (3.30)	31.50 (37.00)	24.00 (28.00)
WMT1513T150DS-6R8MC	6.80 ± 20%	4.40 (3.70)	29.00 (34.00)	23.00 (27.00)
WMT1513T150DS-8R2MC	8.20 ± 20%	5.80 (4.90)	28.00 (33.00)	19.00 (23.00)
WMT1513T150DS-100MC	10.00 ± 20%	7.00 (5.50)	23.50 (28.00)	17.50 (20.00)
WMT1513T150DS-150MC	15.00 ± 20%	7.50 (6.40)	21.50 (25.50)	16.00 (19.00)
WMT1513T150DS-220MC	22.00 ± 20%	14.00 (12.00)	18.50 (22.00)	12.00 (13.50)
WMT1513T150DS-330MC	33.00 ± 20%	21.00 (17.00)	16.00 (19.00)	9.00 (11.50)

For more information see the WMT1513T150/DS [page](#).

Through-Hole Inductors Lower Core Losses And Cost

[Vishay Intertechnology](#) has expanded its Vishay Dale IHL series of radial through-hole inductors with four devices designed to deliver enhanced performance at a lower cost. Featuring a new iron alloy core material that improves core losses by 20% over previous-generation devices—while reducing temperature rise—the automotive-grade IHL1500VZ-3A and IHL-2000VZ-3A and commercial IHL1500VZ-31 and IHL-2000VZ-31 provide high-temperature operation to +155°C and excellent electromagnetic compatibility (EMC) for filtering applications up to 209 A.

The devices will serve as high-current input filters, dc-dc converters, and dc-link filters in battery charging systems, brushless dc motors, and differential mode and boost power factor correction (PFC) chokes in automotive, industrial, and solar and wind power applications. Offered at a lower price point than previous-generation IHL series devices, the inductors combine their improved core losses with higher inductance up to 10 µH, enabling increased impedance for better filtering and enhanced ripple current control in switching converters.

The IHL1500VZ-3A, IHL1500VZ-31, IHL-2000VZ-3A, and IHL-2000VZ-31 feature a magnetically shielded construction with a pressed powdered iron body that contains stray flux, minimizing coupling to surrounding components and maximizing EMC compared to traditional wirewound devices with exposed internal coils. This pressed powdered iron construction also offers low internal thermal resistance—reducing hotspots and enhancing performance with active cooling—while a flat-top surface simplifies mounting of external heatsinks.

The inductors' thick internal copper conductor supports a wide range of loads from 55 A to 209 A in the 1500 (38.1 mm x 38.1 mm x 21.89 mm) and 2000 (50.8 mm x 50.8 mm x 21.7 mm) case sizes. Their soft saturation core material ensures stable inductance across a wide range of load conditions, including during high transient current spikes.



RoHS-compliant, halogen-free, and Vishay Green, the IHL1500VZ-3A, IHL1500VZ-31, IHL-2000VZ-3A, and IHL-2000VZ-31 provide high resistance to thermal shock, moisture, and mechanical shock, and are available with custom termination styles, inductance values, current, temperature, and voltage ratings.

Table. Key specs for Vishay Dale IHL series inductors.

Part number	IHL1500VZ-3A	IHL1500VZ-31	IHL2000VZ-3A	IHL2000VZ-31
Inductance (µH)	0.68 to 10		1.2 to 10	
DCR typ. (mΩ)	0.12 to 1.10		0.14 to 0.82	
DCR max. (mΩ)	0.13 to 1.16		0.15 to 0.86	
Heat rating current typ. (A)⁽¹⁾	55 to 180 / 88 to 280		83 to 209 / 118 to 315	
Saturation current typ. (A)⁽²⁾	49 to 235 / 72 to 335		83 to 243 / 123 to 349	
SRF typ. (MHz)	7.6 to 37.8		5.1 to 19.1	
AEC-Q200	Yes	No	Yes	No
Case size	1500		2000	
Dimensions (mm)	38.1 x 38.1 x 21.89		50.8 x 50.8 x 21.7	

1. Dc current (A) that will cause an approximate ΔT of 40°C and 80°C, respectively

2. Dc current (A) that will cause L₀ to drop approximately 20% and 30%, respectively

The IHXL series inductors are available now, with lead times of 14 weeks. For more information, see the [IHXL1500VZ-3A](#) and [IHXL-2000VZ-3A](#) and commercial [IHXL1500VZ-31](#) and [IHXL-2000VZ-31](#) pages.

Shielded TLVR Inductors Offer Ratings Up To 150 A in Small Footprints



[Coilcraft's](#) SLV family dual-winding and compensating inductors link all phases to dynamically optimize effective inductance. This reduces ripple current, improves transient response, and can reduce the number of output capacitors. The SLV9090 series offers inductance values ranging from 50 to 200 nH in a package measuring 9.15 x 6.4 x 8.5 mm, while the SLV1211 series offers 70 to 200 nH in a package measuring 12.2 x 6.2 x 11.3 mm.

The SLV9090 series trans-inductor voltage regulator (TLVR) inductors are designed for use in voltage regulator modules (VRMs) and point-of-load (POL) converters. With a compact 9- x 6-mm footprint and high power density, these inductors deliver efficient performance in space-constrained designs. This series provides low DCR, tight magnetic coupling, and excellent thermal performance, enabling fast transient response and supporting saturation current ratings up to 120 A. The SLV9080 is well-suited for next-generation CPUs, GPUs, ASICs, and SoCs used in servers, data centers, and various power applications.

The SLV1211 series TLVR inductors have similar qualities and are also designed for use in VRMs and POLs, but support current ratings up to 150 A with a larger 12- x 6-mm footprint.

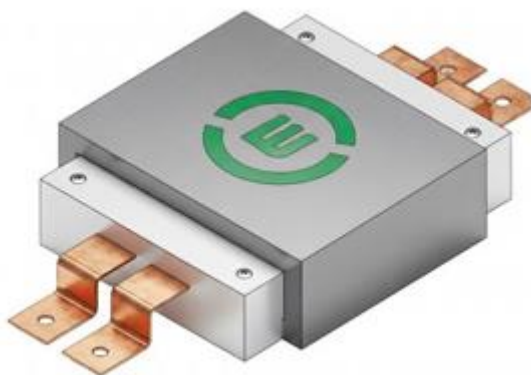
For more information see the [SLV9090](#) and [SLV1211](#) product pages.

Transformers

Smart Integrated Magnetics Solution For Space Power Conversion

[Exxelia's](#) Smart Integrated Magnetics solution is designed for advanced power conditioning and distribution units (PCDUs) operating in constrained and demanding environments such as space systems. This custom solution been engineered to meet specific electrical, thermal and mechanical requirements defined at system level but can be adapted to meet any set of customer specifications.

The Smart Integrated Magnetics solution combines the transformer and the inductor of a dual active bridge (DAB) within a single, compact magnetic assembly. This integrated approach aims to reduce volume, mass and interconnection complexity while maintaining electrical performance at high switching frequencies. The targeted application is isolated dc-dc power conversion in space-grade PCDUs, where efficiency, reliability, and mechanical robustness are key design drivers.



From a technical standpoint, the Smart Integrated Magnetic is designed for a power level of 1 to 2 kW at a switching frequency of 100 to 200 kHz (as an example). The associated inductor provides an inductance of a few microhenries. The overall assembly reaches an efficiency level close to 99% under nominal operating conditions, reflecting careful optimization of core materials, winding architecture and magnetic coupling. Particular attention has been paid to losses and thermal behavior, which are critical in low-convection environments.

Mechanical integration was a central aspect of the development. The complete magnetic solution fits into a low-profile/planar package measuring approximately 75 x 65 x 20 mm, with a total mass of around 250 g. This compact form factor is intended

to facilitate integration into densely populated power electronics modules, while also supporting resistance to mechanical stresses typically encountered during launch and operation.

The design was carried out to address severe environmental constraints, including thermal cycling and mechanical loads, which are characteristic of space applications. Material selection, impregnation processes and structural design were adapted accordingly to ensure long-term stability and compatibility with qualification requirements

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

Custom Transformers For Naval Applications

[Exxelia's](#) build-to-spec magnetic solutions for naval applications include a specialized low-frequency isolation transformer, a high-frequency high-power transformer and a transformer for nuclear reactors.

The first is a low-frequency isolated transformer specifically engineered to integrate seamlessly into modern naval measurement chains. Unlike standard commercial solutions, this transformer prioritizes linearity and galvanic isolation to ensure that data transmitted to control systems remains noise-free, even in electromagnetically noisy environments. It features a compact design (approx. 120 x 100 x 135 mm) capable of maintaining measurement precision (30 VA and 60 Hz) while providing a robust safety barrier for downstream equipment.

For more information, see the product Low-Frequency isolated transformer for measuring chains [page](#).

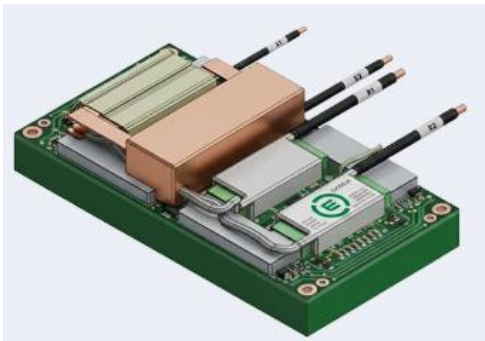


Another product, a high-frequency transformer addresses the trend in naval power electronics in shifting toward higher frequencies to reduce the weight and volume of converters. By utilizing advanced winding technologies (proprietary Litz wires, flat conductors) and low-loss magnetic materials, this transformer can handle high power levels (tens of kilowatts) within reduced volumes.

According to the company, it can optimize thermal management through conduction, forced convection, or liquid cooling, tailoring the thermal dissipation path to ensure the component's "hot spot" remains well within safety limits, guaranteeing an extended operational lifespan.



For more information, see the High Frequency Transformer product [page](#).



A third product is a Self-Transformer Assembly (20 kW, 35 μ H) for naval nuclear reactors. According to the vendor, development of this transformer required mastery of materials in the face of radiation and exceptional mechanical resistance to shock (military grade qualifications). This hybrid product combines transformation and inductance functions into a single mechanical assembly to save critical space while maximizing reliability. This component is designed to operate for decades without maintenance.

For more information, see the 20-kW/35- μ H Self + Transformer assembly for naval nuclear reactors [page](#).

LLC Transformer Delivers Up To 3.6 kW In 53- x 52- x 43-mm Form Factor

[YAGEO Group's](#) PTLA/PTLC series 3.6-kW is engineered for high power density, scalability, and cost efficiency in demanding power conversion applications. The series combines performance and integration flexibility for next-generation systems. Designed with 4.2-kVrms isolation, basic insulation, and 5-mm creepage and clearance distance, it meets stringent safety requirements while maintaining a compact footprint.

At the core of the transformer series is its advanced magnetic construction, concentrating 6.4 μ H of controlled leakage inductance on the primary side, making all leakage inductance available for the resonant circuit. By integrating this controlled leakage inductance into the resonant circuit, the transformer eliminates the need for an external resonant inductor, reduces overall magnetic component



count, lowers BOM cost and minimizes required PCB real estate. This results in a cleaner, more cost-optimized LLC topology design without sacrificing electrical performance, says the vendor.

The series features full winding automation for higher reliability and is designed according to IATF requirements, making it automotive ready. It is also compatible with AEC-Q200 qualification requirements and compliant with RoHS, REACH, and halogen-free standards. With its modular and scalable design, the platform can support higher power requirements and evolving system architectures

The transformers are well suited for high-performance power applications including EV charging, AI computing, data servers, telecom infrastructure, intermediate bus converters, and power supplies. For more information, see the [product brief](#).

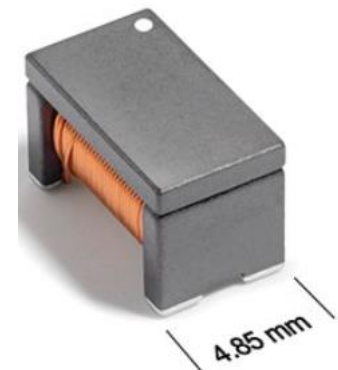
LLC Half-Bridge Transformers For Gate-Driver Bias Supply Offer Small Size

[Coilcraft's](#) HTX8045C series transformers build on the proven chip-style construction of the HTX family, which is described as a major improvement over conventional core and bobbin designs. This compact, surface-mount configuration reduces component size and enhances manufacturing efficiency, allowing for more cost-effective production.

With higher isolation voltage compared to the HTX7045C and low interwinding capacitance (as low as 0.55 pF), the HTX8045C is particularly well-suited for use in isolated gate driver bias supplies employing the open-loop LLC topology to achieve ultra-low EMI noise and high CMTI (common mode transient immunity). These characteristics make it beneficial for high-frequency switches including SiC, GaN and IGBT technologies.

The HTX8045C is AEC-qualified and is well suited for automotive traction inverters and motor controls, automotive on-board chargers (OBCs), EV charging stations, battery management systems (BMSs), automotive dc-dc converters as well as a wide range of other automotive and industrial applications.

For more information see the HTX8045C product [page](#).



Advanced Planar Magnetics For Next-Generation AI Infrastructure

From [Payton Planar](#), matrix transformers employing planar magnetics enable scalable magnetics solutions from 800-V dc down to GPU rail voltages. Instead of one large transformer, multiple smaller transformers share power with current distributed among parallel magnetic paths. This achieves reduced ac copper losses, better thermal spreading, improved manufacturability and easier scaling to 10 kW, 20 kW, 50 kW, and beyond.

As an example, a 1-kW matrix transformer for a 1-MHz switching LLC steps an 800-V output down to 4 V in a planar magnetic that stands 7 mm high. It achieves 1500-Vdc isolation with 8-mm clearance.

For more information, contact [Jim Marinos](#).



Chokes And Filters

Inductive Components With High-Frequency Stability For Railway Applications



[SMP Sintermetalle Prometheus](#) presents inductive components with high-frequency stability for use in railway applications. The components are used in all power electronic systems, such as inverters for three-phase asynchronous motors or auxiliary power units. The materials specially developed and manufactured by SMP are effective at frequencies up to the gigahertz range.

The components reduce interference currents and voltage spikes in power converter systems caused by parasitic effects and switching elements of the converter. The material plays a crucial role in this context: the objective is to achieve stable inductance at the operating point across the entire frequency spectrum in order to maximize interference damping.

SMP choke with IP66 ingress protection rating

Compared with standard technologies using materials such as ferrite, electrical steel laminations and nanocrystalline materials, SMP's inductive filter systems exhibit interference levels up to 40 dB μ V lower and are up to 40% lighter. Owing to the use of magnetostriction-free materials, they generate no audible noise.

Thanks to their inductance stability, the components can be designed with lower inductance values, enabling high system dynamics. Voltage spikes that occur periodically at the inverter switching frequency are significantly reduced, thereby extending the service life of electric motors.

Fast-switching SiC and GaN semiconductors place high demands on magnetic materials. The very low losses of the materials used in SMP products improve the overall system efficiency. In addition, fewer filter components are required, reducing system volume and significantly increasing the cost-effectiveness of the overall power electronic system.

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

Space-Grade Common-Mode Choke Provides EMI Filtering For GaN And SiC Switching

From [Vishay Intertechnology](#), the Vishay Custom Magnetics SGCM05339 is a space-grade, surface-mount common-mode choke designed to provide EMI filtering and noise suppression in demanding space, aerospace, and defense applications. The choke is well suited for GaN and SiC switching applications, where sharp edges develop in waveforms, causing radiated emissions. The common-mode choke will also be used in low-profile, high-current power supplies; dc-dc converters in distributed power systems; and power converters for solar panels.



To withstand the harsh environments of these applications, the self-shielded device features a compact, robust nanocrystalline core and an overmolded ruggedized construction. The SGCM05339 offers high impedance at extended frequencies, supports high heat rating current capabilities of up to 14.43 A, and provides a continuous operating temperature range from -55°C to +130°C.

Table. Device specification for the SGCM05339 CM choke.

Part number	SGCM05339
Inductance per winding	320 μ H to 10,400 μ H
Common mode impedance (typ.)	540 Ω to 3600 Ω
DC resistance per winding (max.)	0.0029 Ω to 0.1318 Ω
Heat rating current (typ.)(¹)	2.02 A to 14.43 A

Peak impedance frequency	2.06 Hz to 31.74 Hz
Leakage (max.)	0.35 μ H to 7.75 μ H

1. Dc current (A) through the windings in series that will cause an approximate ΔT of 30°C.

Outgassing compliant per ASTM-E595, the device is available with a wide range of screening options, including MIL-PRF-27, Grade 5, Product Level T, Temperature Class S; MIL-STD-981 Family-4, Class S; and EEE-INST-002. The SGCM05339 offers a dielectric withstand voltage of 1000 Vrms, insulation resistance of 10 G Ω (minimum) at 500 Vdc, and can be customized by turn count, wire gauge, and more to meet specific application requirements.

Samples and production quantities of the space-grade common-mode choke are available now, with lead times of 8 to 12 weeks. For more information, see the SGCM05339 product [page](#).

Three-Phase Common-Mode Chokes Deliver EMI Suppression For High-Power Systems

[YAGEO Group's](#) SCF76X coils are high-performance three-phase common-mode chokes featuring a nanocrystalline core for superior EMI suppression. It delivers high current capability up to 110 A, making it well suited for demanding industrial, inverter and power conversion applications requiring compact and reliable noise mitigation.

Three-phase systems used in industrial automation, HVAC, power conditioning, and inverter-based equipment must meet increasingly strict EMC requirements, often under high current, limited space and elevated temperature conditions. The SCF76X three-phase common-mode choke addresses these challenges by combining high current capability, nanocrystalline core technology, and a robust mechanical design optimized for modern power conversion platforms.



The SCF76X series offers a rated current range of 65 A to 110 A and a rated voltage of up to 500 Vac and Vdc. According to the vendor, the current range reflects a market reality of many three-phase systems today, such as industrial drives, power conditioners and HVAC equipment, that these systems operate well beyond the capabilities of traditional ferrite-based EMI components. The SCF76X is specifically positioned for these high-power use cases, enabling effective conducted EMI suppression without oversizing or parallel choke solutions.

At the heart of the SCF76X is a nanocrystalline metal core, selected for its high magnetic permeability and ability to deliver high impedance in common-mode noise suppression. In practical terms, this allows SCF76X to provide strong EMI attenuation across relevant frequency ranges, even at elevated current levels. This characteristic aligns with a broader design trend in power electronics: the shift toward materials that maintain EMI performance as current density and switching activity increase.

The result is a component that supports robust EMC compliance in demanding three-phase architectures, without relying on complex multi-component filtering schemes. The SCF76X is designed for operation across a -40°C to +130°C temperature range, supporting deployment in industrial and infrastructure environments where thermal stress is a given.

The SCF76X series has several features that are said to ensure reliable and predictable performance, essential for long-life industrial applications. These include a UL 94 V-0 rated base and cap for fire safety compliance, a horizontal layout with a 76-mm core diameter for stability and high-current windings and a low dc resistance (0.24 to 0.97 m Ω) to reduce conduction losses.

Typical applications for the SCF76X chokes include power conditioners, industrial drives, inverter-based equipment, air conditioning systems, robotics and green energy platforms, where three-phase power electronics are most actively evolving.

Other specifications include a rated voltage of 800 Vac and Vdc, an inductance range of 0.35 to 0.77 mH and an operating temperature range of -40°C to +130°C For more information, see the [SCF76X](#) product brief.

Common-Mode Chokes Offer Ratings To 1250 V DC

TDK's B82722V6*B040 series of compact high-voltage, current-compensated ring-core double chokes is designed primarily for rated dc voltages of up to 1250 V (630 V ac). These compact common-mode chokes (23 x 15.5 x 24 mm) effectively suppress EMI in next-generation applications. These include power converters, industrial motor drives, and switch-mode power supplies that often deploy SiC and GaN power semiconductors and feature elevated dc bus voltages, where insulation coordination and PCB space are critical.

The series covers nominal inductance values ranging from 3.3 mH to 22 mH, with rated currents between 0.85 A and 3.0 A at a rated ambient temperature of +70°C. Multilayer solid insulation construction and testing with voltages of 3,750 V (line-to-line) ensure robust electrical isolation. Thanks to the special automated winding technique, these chokes feature high-resonance-frequency characteristics and a typical stray inductance of around 0.6%, helping to suppress symmetrical interference.

The epoxy coating of the ferrite core and the plastic header comply with UL94 V-0. The design fulfills the latest IEC 60938-2 and IEC/UL 60939-3 safety requirements for EMI chokes and filters. Suitable for wave soldering and offered in a compact vertical design, the B82722V6*B040 series enables engineers to realize 1250-V dc high-voltage architectures without increasing the PCB footprint, says the vendor. Units are RoHS-compatible.

For more information, see the Power Line Chokes [page](#).

Bobbins

Magnetic Component Supplier Adds Bobbins



From [Prem Magnetics](#), following its acquisition of Formco's assets, PREM has introduced bobbins as a new product line offering in stock, same-day shipping, with no minimum order. Its catalog includes EE, EI, UI, pot cores, round, and more. Users can download the datasheets to browse part numbers and to find the right fit for their applications.

To browse bobbins and download datasheets, click [here](#). Or contact the [company](#) to request a quote.

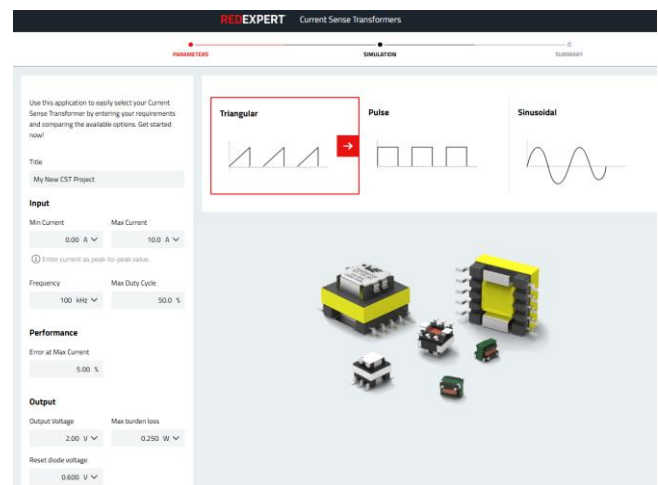
Design Tools

Selection Tool For Current Sense Transformers

[Würth Elektronik](#) has expanded its free design tool REDEXPERT to include the Current Sense Transformer Selector. It enables developers to select the appropriate current sense transformers based on parameters relevant to their application.

Current sense transformers for measuring alternating current offer unique advantages over other current sensing solutions: galvanic isolation, low power loss, high immunity to signal noise, and simple circuit design. Selecting the right current sensor can be a challenge depending on the application. According to the vendor, the Current Sense Transformer Selector offers a unique design tool previously not available on the market in this form.

After entering the parameters—current, frequency, signal type, and desired maximum error rate—the selector finds



all available options in Würth Elektronik's product database that match these criteria. The tool provides a list of components with the corresponding parameters and simulates both the temperature rise and the error as a function of frequency and current.

The tool also allows the direct comparison of different options in a simulation view and provides an overview page with all relevant information for the selected component. These simulations, based on actual measurements, save developers from having to conduct their own tests when selecting current sense transformers (CSTs).

As a point of reference, the company offers a description of the selection process without the REDEXPERT Current Sense Transformer Selector: First, the CST must be selected with a suitable ET constant to ensure it doesn't reach saturation even under unfavorable conditions—i.e. low frequencies and high currents. It's also important to ensure that the CST doesn't overheat at maximum current. Last but not least, the error characteristics required for the specific application must also be taken into account when selecting the component.

As datasheets for CSTs don't cover all possible application-relevant parameters—and can't realistically do so in practice—it's often necessary to test several components to make the best choice. For more information, see [Current Sense Transformer Selector](#) and [current sense transformers](#) pages.

Literature

White Paper Compares ESCC 3201 And MIL-STD-981 Space-Grade Inductors

[Exxelia's](#) white paper provides a clear and technical comparison of two major qualification frameworks—ESCC 3201 And MIL-STD-981—based on real, space-qualified magnetic components such as chip inductors, low-profile inductors and common-mode chokes. It's a practical guide designed for engineers involved in satellite, launcher and deep-space programs, helping them to make informed decisions for high-reliability designs.

This document offers a detailed comparison between ESCC 3201 and MIL-STD-981, using Exxelia's qualified MPC1, SESI, and CMC magnetic components as reference points. It examines areas where the standards converge, where they differ, and how optional testing can bridge the gap for missions requiring hybrid compliance.

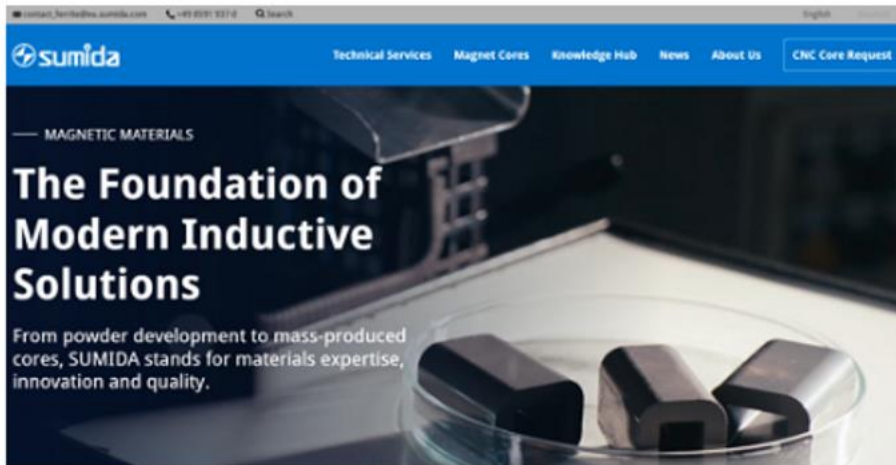
Key topics covered include:

- The qualification flow and shared test philosophies across both standards
- Differences in burn-in duration, vibration levels, mechanical shock, and environmental stress
- ESCC-specific screenings such as barometric pressure and moisture resistance tests
- MIL-STD-981 requirements that can be added upon request, including radiography and DPA
- Guidance to help design engineers align component selection with mission requirements
- Which qualification tests are equivalent between ESCC and MIL standards
- Where the main differences lie (burn-in duration, vibration levels, environmental testing...)
- Why ESCC qualification often goes further on environmental robustness
- How ESCC-qualified inductors can be adapted to MIL-STD-981 requirements through optional screenings

The goal is to offer a clear and structured overview that simplifies decision-making for satellite, launcher, and deep-space applications. Click [here](#) to download the white paper.

Website Offers Comprehensive Details On Ferrites and Other Magnetic Materials

[Sumida's](#) redesigned website features comprehensive information on ferrites, magnetic materials, standard and custom cores and other technical resources.



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