

## Experience the Power of Confidence

...the confidence of over fifty years of expertise in the research, design, manufacture and support of high quality magnetic materials and components.

A leading manufacturer of the highest performance materials in the industry including; Kool M $\mu$ <sup>®</sup>, High Flux, MPP, XFLux<sup>®</sup>, power ferrites, high permeability ferrites and tape wound cores, Magnetics products set the standard for providing consistent and reliable electrical properties for a comprehensive range of core materials and geometries.

Magnetics is the best choice for a variety of applications including switched mode power supplies for telecommunications equipment, servers, and computers; Uninterruptible Power Supplies for datacenters; and inverters in alternative energy applications.

Magnetics backs its products with unsurpassed technical expertise and support. Magnetics' Sales Engineers offer the experience necessary to assist the designer from the initial design phase through prototype approval. Knowledgeable Sales Managers provide dedicated account management. Skilled Customer Service Representatives are easily accessible to provide exceptional sales support. In addition, Magnetics offers MyMagnetics, the industry's only self-service site that provides 24-hour secure access to price, inventory availability, tracking, account information, and online purchasing. This support, combined with a global presence via a worldwide distribution network, including a Hong Kong distribution center, makes Magnetics a premier supplier to the international electronics industry.



## Ferrites

Magnetics has developed and produces the leading MnZn ferrite materials for power transformers, power inductors, wideband transformers, common mode chokes, and many other applications. In addition to offering the leading materials, other advantages of ferrites from Magnetics include: the full range of standard planar E and I cores; the widest range of toroid sizes in power and high permeability materials; standard gapping to precise inductance or mechanical dimension; and a wide range of coil former and assembly hardware available.

### POWER MATERIALS

Five low loss materials are engineered for optimum frequency and temperature performance in power applications. Magnetics' P, R, F, L and T materials provide superior saturation, high temperature performance, low losses and product consistency.

*SHAPES* – Toroids 2 mm to 140 mm (0.079" to 5.510"), E, ER, Planar E, I, EFD, ETD, EER, EC, U,I, UR, PQ, Pot Cores, RS (round-slab), DS (double-slab), RM, EP, Special Shapes.

*APPLICATIONS* – Power Supplies, DC-DC Converters, Telecomm Data Interfaces, Impedance Matching Transformers, Handheld Devices, High Power Control (gate drive), Computer Servers, Distributed Power (DC-DC), EMI Filters.

### HIGH PERMEABILITY MATERIALS

Two high permeability materials (5,000 $\mu$  J material and 10,000 $\mu$  W material) are engineered for optimum frequency and impedance performance in signal, choke and filter applications. These Magnetics' materials provide superior loss factor, frequency response, temperature performance, and product consistency.

*SHAPES* – Toroids 2 mm to 140 mm (0.079" to 5.510"), E, EFD, U, Pot cores, RS (round-slab), DS (double slab), RM, EP, Special Shapes.

*APPLICATIONS* – Common Mode Chokes, EMI Filters, Other Filters, Current Sensors, Telecomm Data Interfaces, Impedance Matching Interfaces, Handheld Devices, Spike Suppression, Gate Drive Transformers.



## Tape Wound Cores

Tape wound cores are made from high permeability alloys of nickel-iron, grain oriented silicon-iron. The alloys are known as Orthonol®, Alloy 48, Square Permalloy 80, Supermalloy and Magnesil®. Cores are available in more than 50 standard sizes. For a wide range of frequency applications, materials are produced in thicknesses from 0.013 mm (1/2 mil) through 0.356 mm (14 mils). Cases are robust nylon boxes, rated for 200° C continuous operation and 2,000 voltage minimum breakdown.

*APPLICATIONS* – Magnetic Amplifiers, Reactors, Regulators, Static Magnetic Devices and Current Transformers.

Miniature Tape Wound Bobbin Cores are manufactured from Permalloy 80 and Orthonol ultra-thin tape (0.000125" to 0.001" thick). They are available in widths from 0.031" to 0.250" (wider on special request). Wound on non-magnetic stainless steel bobbins, core diameters are available down to 0.050", with flux capacities as low as several maxwells. Magnetics' sophisticated pulse test equipment reproduces most test programs and can measure accurately in the millivolt-microsecond region.

*APPLICATIONS* – Magnetometers, Flux Gates, Oscillators, Inverters and Magnetic Amplifiers.



## Molypermalloy, High Flux, Kool M $\mu$ <sup>®</sup> and XFlux<sup>®</sup> Powder Cores

Magnetics' powder cores are excellent as low loss inductors for switched-mode power supplies, switching regulators and noise filters. Notable characteristics of Magnetics' powder core materials are high resistivity, low hysteresis and eddy current losses and excellent inductance stability under both DC and AC conditions. In addition, Magnetics powder core materials are not pressed with an organic binder, therefore, there is no thermal aging. A variety of materials, sizes and types are available.

**MPP** – Molypermalloy powder cores (MPP) have the lowest core losses of any powder core material and a saturation flux density of .75 Tesla. Temperature stabilized (as wide as -65°C to 125°C) and linear stabilized cores are available for those applications requiring guaranteed temperature performance. MPP cores are available in eight permeabilities ranging from 14 $\mu$  through Magnetics' exclusive 550 $\mu$ , and have guaranteed inductance limits of  $\pm$ 8%. Over thirty sizes include O.D.s from 3.56 mm (0.140") to 165 mm (6.496").

**APPLICATIONS** – Chokes, Converters, EMI/RFI Filters, Flyback Transformers, Inverters for Alternative Energy, Load Coils, Power Factor Correction, Switched Mode Power Supplies, Switching Regulators.

MPP THINZ<sup>®</sup>, extremely low height (<1 mm) self-shielded power inductor cores, allow finished inductor heights in the 1.5 mm to 2 mm range. THINZ come in 5 sizes with O.D.s ranging from 3.1 mm (0.120") through 7.9 mm (0.310") and four permeabilities: 125 $\mu$ , 160 $\mu$ , 200 $\mu$  and 250 $\mu$ .

**APPLICATIONS** – POL DC/DC Converters, Portable Electronic Devices.

**HIGH FLUX** – High Flux cores have certain advantages that make them quite useful for applications involving high power, high DC bias, or high AC bias at high power frequencies. High Flux cores have a saturation flux density of 1.5 Tesla. In addition, the core loss of High Flux powder cores is significantly lower than that of powdered iron cores. High Flux powder cores have a much higher energy storage capacity than MPP cores and are available in six permeabilities from 26 $\mu$  through 160 $\mu$ . High Flux cores are available in sizes identical to MPP cores.

**APPLICATIONS** – Chokes, Converters, Inductors, Inverters, Pulse Transformers and Switching Regulators.

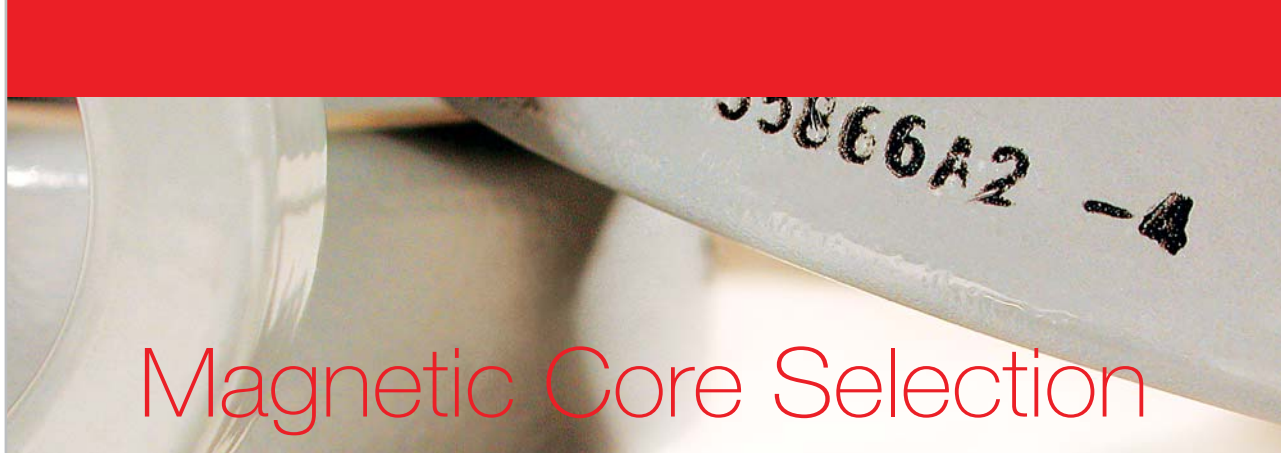
**KOOL M $\mu$**  – The 1.05 Tesla saturation level of Kool M $\mu$  provides a higher energy storage capability than MPP cores or gapped ferrites. In addition, Kool M $\mu$  offers lower losses than High Flux. Ranging in permeabilities from 26 $\mu$  through 125 $\mu$ , Kool M $\mu$  is available in a variety of core types for maximum flexibility. Toroids offer compact size and self-shielding. E cores and U cores afford lower cost of winding, use of foil inductors, and ease of fixturing. Very large cores and structures are available to support very high current applications. These include toroids and racetrack shapes up to 165 mm (6.496"); large E cores (up to 160 mm); stacked shapes; and blocks.

Kool M $\mu$  toroids are available with outside diameters ranging from 4 mm (0.157") to over 165 mm (6.496"). E cores range in size from 13 mm (0.512") to 160 mm (6.299") and are available in 26 $\mu$  through 90 $\mu$ . U cores range in size from 55 mm (2.165") through 80 mm (3.150") (available permeabilities are size dependent).

**APPLICATIONS** – PFC Chokes, Boost/Buck Regulators, Inductors, Output Inductors, Flyback Transformers and Inverters for Alternative Energy.

**XFLUX** – XFLUX cores offer an economical high saturation (1.6 Tesla) solution for use in low and medium frequency inductors and chokes. The high saturation is advantageous in applications where inductance under load is critical. XFLUX offers lower losses than powder iron cores and superior DC Bias performance.

**APPLICATIONS** – Inverters for Alternative Energy, Power Factor Correction (PFC) Boost, Uninterruptible Power Supplies (UPS).



# Magnetic Core Selection

Application	Kool M $\mu$ <sup>®</sup> Cores	MPP Cores	High Flux Cores	XFlux <sup>®</sup> Cores	Ferrite Cores	Tape Cores	Bobbin Cores
Ballasts	•	•	•	•	•		
Chokes	•	•	•	•	•		
Common Mode Noise Filters					•		
Converters	•	•	•	•	•	•	•
Current Transformers					•	•	
Differential Filter Inductors	•	•	•	•	•		
EMI/RFI Filters	•	•	•	•	•		
Flyback Transformers	•	•			•		
Gate Drive Transformers					•	•	•
Ground Fault Interrupters					•	•	
Hall Effect Devices		•			•		
High Frequency Power Transformers					•		
High Temperature Magnetics	•	•	•	•		•	•
Inductors – SMPS	•	•	•	•	•		
Inductors – High Q Filters		•			•		
In-Line Filters	•	•	•	•	•		
Inverters	•		•	•	•	•	•
Load Coils		•					
Low Frequency Power Transformers						•	•
Low Height Power Inductors	•	•			•		
Magnetic Amplifiers						•	•
Magnetometers						•	•
Noise Filters	•	•	•	•	•		
Oscillators						•	•
Planar Transformers					•		
Power Factor Correction	•	•	•	•	•		
Power Inductors	•	•	•	•	•		
Power Transformers					•	•	
Proximity Devices/Sensors					•		
Pulse Transformers	•		•		•		•
Saturating Transformers						•	•
Static Magnetic Devices						•	•
Step Gap Inductors					•		
Switching Regulators	•	•	•	•	•	•	•
Thyristor or SCR Protection						•	•
Transformers	•	•	•	•	•	•	•
Tunable Inductors					•		
Voltage Regulators	•	•	•	•	•		
Wide Band Transformers					•		



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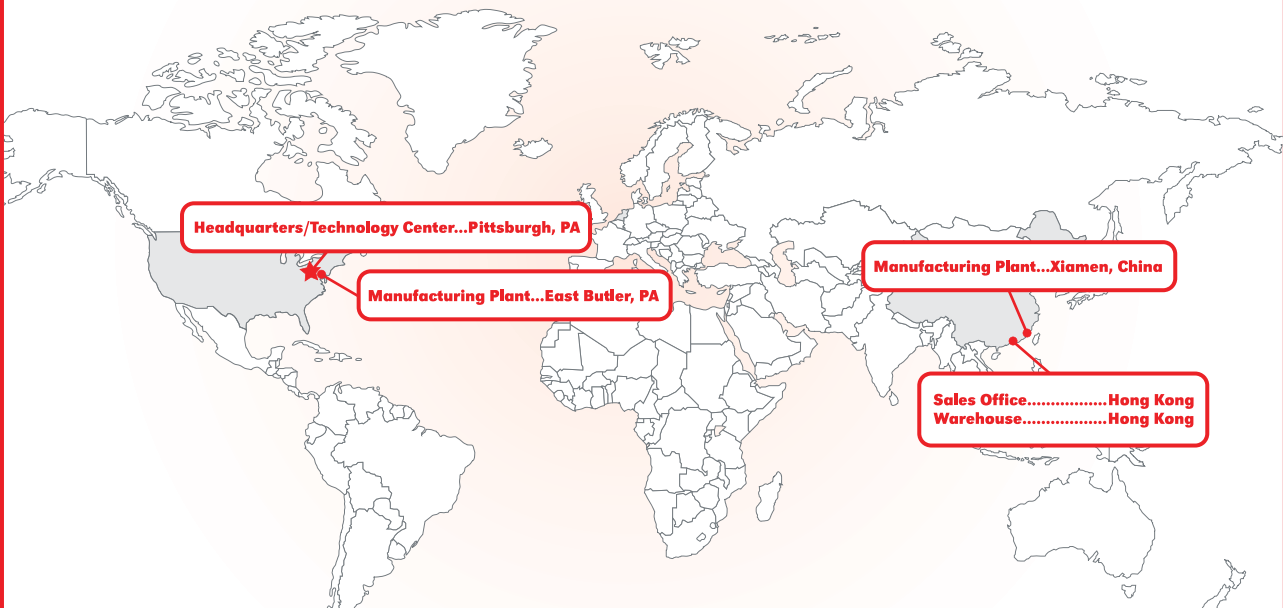
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