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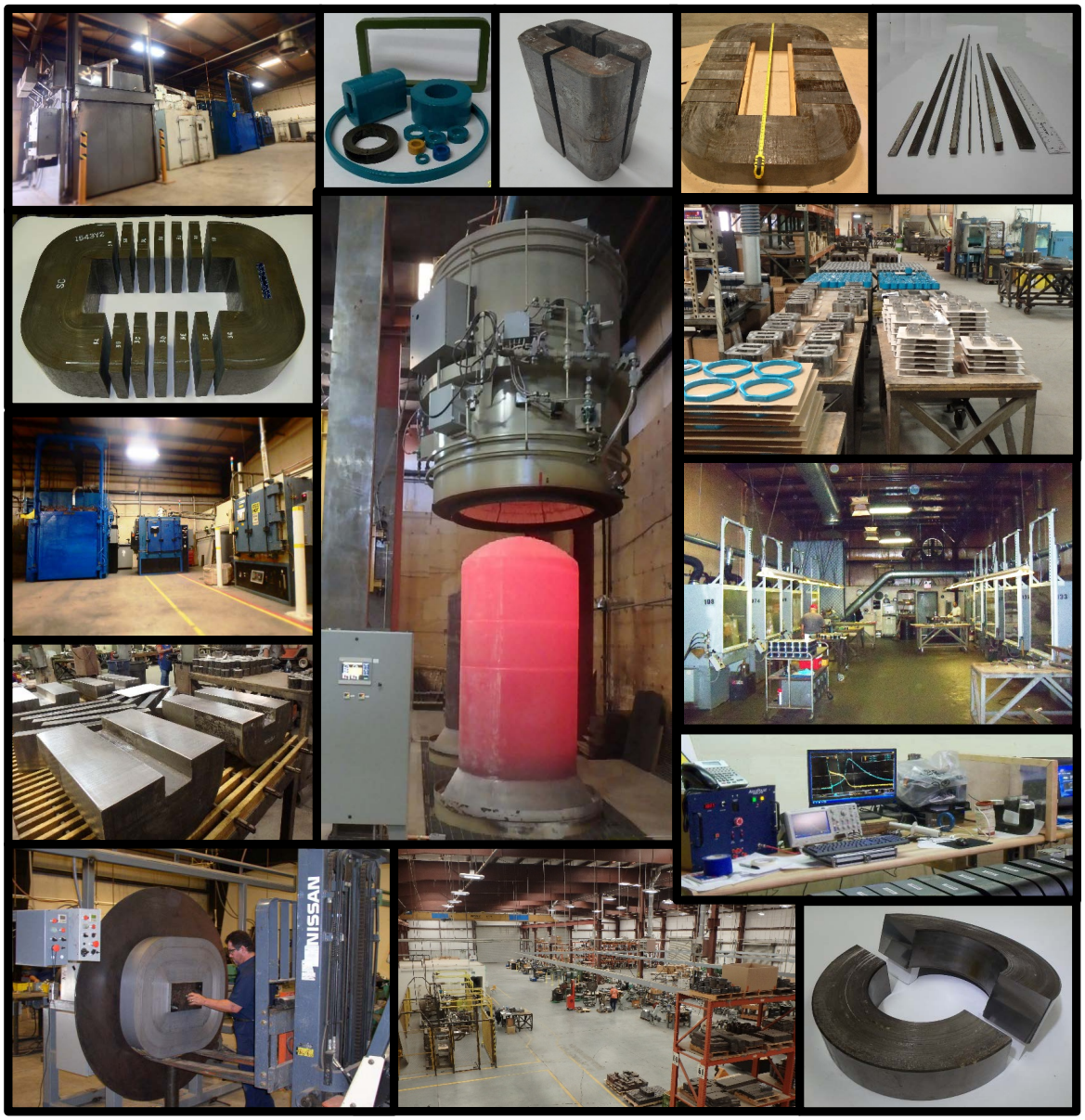
High Voltage Products. High Voltage Experts.

MK MAGNETICS

Tape Wound Core Specialists

ISO9001:2008 Registered



Proudly Made in the U.S.A.

Edition: June 2017

MK MAGNETICS
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The MK Magnetics Team was assembled to fill an industry need for high quality tape cores, both standard and highly customized.

- A modern 65,000 ft facility located in two buildings on a 10 acre campus
- Equipment and processes tailored for superior product quality and productivity
- Highly skilled Engineering, Customer Service, and Manufacturing veterans for world-class support

A comprehensive line of products manufactured from a broad range of materials:

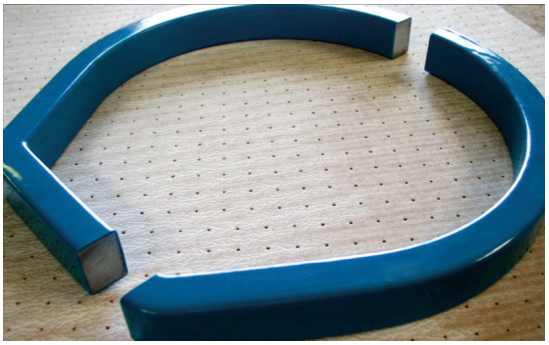
- Nanocrystalline, .0005", .0007" & .0007" x 5.6" wide Metglas® FT3-W domestically produced for lower cost
- Amorphous materials: Metglas® 2605SA1 Iron Based, 2714 Cobalt Based and others
- 3% grain-oriented silicon steel materials (GOS), .001" - .014", low & high flux versions available
- 50% & 80% nickel materials, square & round loop versions, .0005" - .004"
- Supermendur®, cobalt-iron high flux materials, square & round loop. .002" & .004"
- Other specialized materials, contact Engineering

Custom and standard core configurations:

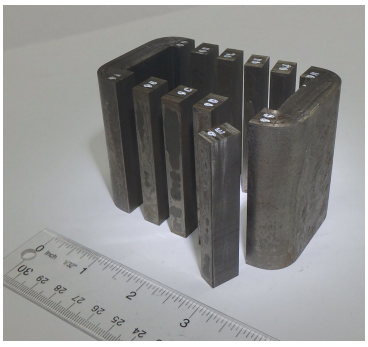
- C-cores, single phase
- E-cores, 3-phase & shell configuration
- Uncased toroids including: epoxy coated, cut in half, gapped, etc.
- Cased toroids including: machined nylon, injection molded nylon, aluminum, phenolic, etc.
- Other special configurations available
- Matched toroid sets for Mag-Amp, pairs, triplets and sextuplets
- Typcial Lead times starting 3-5 weeks, expedited deliveries available

Core sizes from small to very large, weights from .002 to 4000 lbs +, sizes up to 7½' tall & 4' wide and larger, depending on material and configuration. DFARS & ITAR compliance available.

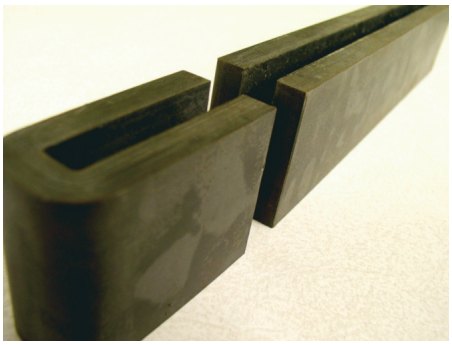
We are **"The Tape Wound Core Specialists"**



Unique Shapes & Cuts
Special Applications



Small multiple
cut cores



Large G:F Ratio
Oil Exploration

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MK Magnetics Part Numbering System

MK Magnetics	Core Type	Case Type	Core Size	Material	Thickness	Loop Type	Customer Specific
S	X	X	XXXX	X	X	X	- X

C-Core Part Number Example

Example: **SC1000M1,** **"S"** = MK Magnetics, **"C"** = C-core, **no "Case Type"** call out means no case or epoxy coating, **"1000"** = part size, **"M"** = Nanocrystalline, **"1"** = .001" thick material, **no "Loop Type"** (BH loop) call out immediately after material thickness means standard loop, not ending with a **"dash"** & **"Customer Specific"** call out means it is a standard part number

SC1000M1F, Same as above, but with non-standard **"Loop Type"** letter indicator when needed, **"F"** = flat loop

SCX1000M1F, Same as above, but with **"Case Type"** letter indicator when needed, **"X"** = epoxy coated

SC1000M1F-A, Same as above but with non-standard **"Customer Specific"** letter indicator when needed, **"A"** = customer specific part number, this letter indexes for each customer ordering this same part with a special requirement

E-Core & T-Core Part Number Example

Same as C-core, but "Core Type" becomes an **"E"** for E-core and **"T"** for toroid

Core Type Indicator

		Description	Core Dimensional Parameters			
C	=	C-core	D	E	F	G
E	=	E-core	D	2E	F	G
T	=	Toroid	D	ID	OD	
P	=	Pie/Circular core	D	IR	OR	
D	=	D-core	D	E	OR	
B	=	Bar/Block	D	E	L	

Core Material Type Indicators

A	=	Standard Grade, 3% grain-oriented silicon steel, .001", .002", .004", .009" M3, .012" M5
B	=	Z-Type, High Flux Grade, 3% grain-oriented silicon steel, .002", .004", .007" M2, .009" & .011" Domain Refined-H Hi-B
C	=	Premium-Z-Type, Super Oriented High Flux Grade, 3% grain-oriented silicon steel, .004" only
D	=	Supermalloy, 80% Nickel, Molybdenum 5.0%-6.0%, Balance Iron, .0005", .001", .002", .004", thicker on special order
E	=	Permalloy-80, 80% Nickel, Molybdenum 4.0%-5.0%, Balance Iron, .0005", .001", .002", .004", thicker on special order
F	=	Square Permalloy-80, 80% Nickel, Molybdenum 4.0%-5.0%, Balance Iron, .0005", .001", .002", .004", thicker on special order
G	=	Square 50% Nickel, 50% Nickel, Balance Iron, .0005", .001", .002", .004", thicker on special order
H	=	Round 50% Nickel 4750 alloy, Transformer Grade, 50% Nickel, Balance Iron, .001", .002", .004", thicker on special order
J	=	Supermendur®, 49% Cobalt, 49% Iron, 2% Vanadium, .002", .004", round, square loop
K	=	2V-Permendur, 49% Cobalt, Balance Iron, Special order
L	=	Amorphous Metglas® 2605SA1 .001", standard square anneal, round loop available, Optifficient Low Loss Series
M&MB	=	Nanocrystalline: Prime "M" .0007" & .0005", Grade "MB" domestically produced Finemet FT3-W @ 5.6" width. Standard round loop anneal, square & transverse available
P	=	6.5% .004" non-oriented silicon steel
S	=	M19, 3% non-oriented silicon steel, .014"
T	=	M4, 3% grain-oriented silicon steel, .011"

Other specialized materials may be available. Please contact Engineering

Thickness Indicator

.0004"-.0006"	=	5
.0007"-.001"	=	1
.002"	=	2
.004"	=	4
.007"	=	7
.009"	=	9
.011"	=	A
.012"	=	B
.014"	=	C

Special Hysteresis Loop Type Modifiers

F	=	Flat Loop Anneal, Metglas 2605SA1 only
R	=	Round Loop Anneal, std for nanocrystalline
S	=	Square Loop Anneal, std for Metglas 2605SA1
T	=	Transverse Loop Anneal, available for Nanocrystalline

Case Type Indicator For Cased Toroids

A	=	Machined nylon, silicone grease damped, unsealed
B	=	Glass filled injection molded nylon, silicone grease damped, unsealed
C	=	Phenolic case, customer specified damping, unsealed
D	=	Aluminum epoxy coated, silicone rubber damped, sealed
E	=	Anodized aluminum, silicone rubber damped, unsealed
F	=	Customer supplied case, customer specified damping
X	=	Epoxy fluidize coated

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Typical Magnetic Performance Guide

C-Cores & Uncased Toroids

Material Description	Material Type Letter	Thickness (Inches) typical	Space Factor min	Watts/lb max	VA/lb max	Test B (kG)	Test Freq (Hz)	Gap VA per inch² @ .001" max
3% Silicon Steel Silectron®1	A	.001"	.83	12.0	20.3	12.5	400	16.3
	A&B	.002"	.89	10.0	15.0	15.0	400	29.2
	A	.004"	.90	10.0	13.1	15.0	400	29.9
	B&C	.004"	.90	15.0	39.5	17.6	400	41.1
	B	.007"	.92	15.0	39.5	17.6	400	43.0
	A	.009"	.95	0.89	1.7	15.0	60	5.0
	B	.009"	.95	0.89	1.5	17.6	60	6.9
	T	.011"	.95	0.89	1.7	15.0	60	5.0
	B	.011"	.95	0.89	1.5	17.6	60	6.9
	A	.012"	.95	0.89	1.7	15.0	60	5.0
80% Nickel-Iron Supermalloy®2	D	.0005"	.65	12.0	18.0	5.0	10,000	57.7
	D	.001"	.83	14.0	21.0	5.0	10,000	70.6
	D	.002"	.89	20.0	30.0	5.0	10,000	81.2
	D	.004"	.90	15.0	22.0	5.0	5000	41.5
50% Nickel-Iron Deltamax®3	G	.0005"	.65	30.0	40.0	10.0	5000	115.3
	G	.001"	.83	37.0	47.0	10.0	5000	141.2
	G	.002"	.89	55.0	70.0	10.0	5000	162.4
	G	.004"	.90	3.5	6.0	10.0	400	13.0
50% Cobalt-Iron Supermendur®4	J	.002"	.89	20.0	72.0	20.0	400	52.0
	J	.004"	.90	19.0	66.0	21.0	400	58.6
Metglas®5 2605SA1	L	.001"	.82	16.5	N/A	2.0	20,000	
Nanocrystalline Prime	M	.0007" & .0005"	.78	5.5	N/A	2.0	20,000	
Nanocrystalline FT3-W	MB	.0007"	.78	5.5	N/A	2.0	20,000	

B (kG) is flux density in kilogauss. Watts/lb & VA/lb are power loss and excitation VA when measured at the indicated flux (B) and frequency (Hz) under sine wave excitation. Gap VA for a 0.001" total air gap was calculated using the following formula: Gap VA = $4.1 \times 10^{-4} \times B^2 \times$ frequency (Hz) $\times SF^2 \times A_g$. Cores under 25lbs use 0.001" air gap and those in excess of 25lbs use 0.002" air gap. Total core watts = material watts/lb × core wgt in lbs. Total core excitation VA = material VA/lb × core wgt in lbs + gap VA. Note: Odd or small core geometry may impact performance.

E-Cores

3% Silicon Steel Silectron®1	A	.004"	.90	12.0	22.7	15.0	400	51.8
	B&C	.004"	.90	18.0	68.4	17.6	400	71.0
	B	.007"	.92	18.0	68.4	17.6	400	74.0
	B	.009"	.95	1.1	4.0	17.6	60	11.9
	A	.012"	.95	1.1	2.9	15.0	60	8.7
	T	.011"	.95	1.1	2.9	15.0	60	8.7
	B	.011"	.95	1.1	4.0	17.6	60	11.9
50% Cobalt-Iron Supermendur®4	J	.004"	.90	22.0	120.0	21.0	400	101.0

Total 3-phase core excitation VA = material VA/lb × core wgt in lbs + gap VA. VA for a total air gap of 0.0015" was calculated with the following formula: Gap VA = $6.15 \times 10^{-4} \times B^2 \times$ frequency (Hz) $\times SF^2 \times A_g$. E-cores under 25 lbs use 0.0015" total air gap, E-cores over 25lbs use total air gap of 0.003".

Note: Odd or small core geometry may impact performance.

1. *Silectron*® is a registered trademark of Allegheny Ludlum Steel Corp. 2. *Supermalloy*® is the discontinued product name of Western Electric Co. 3. *Deltamax*® is the discontinued product name of Alleghney Ludlum Steel Corp. 4. *Supermendur*® is the discontinued product name of Carpenter Technology. 5. *Metglas*® is a registered trademark of Metglas, Inc. 6. *Finemet*® is a registered trademark of Hitachi Metals Corp. 7. *Vitroperm*® is a registered trademark of Vacuumschmelze GmbH.

➢ **MK Magnetics will gladly test cores to your specific needs**

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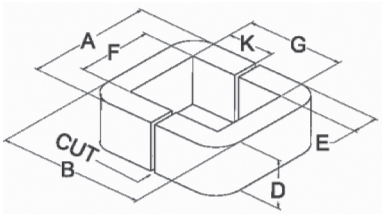

C-Core

Customizable To Meet Your Needs

- Custom sizes
- Custom shapes
- Multiple cuts
- Special air gap cuts
- Tighter tolerances
- Low noise applications
- Diamond-lapped mating surfaces
- Special high temperature heat stabilization processes
- Special edge chamfering
- Epoxy coating
- Special stack resistance requirements
- Special part marking
- Custom assemblies
- Custom grinding & machining
- Small Planar-type geometries
- Call for more details about these and other possibilities

Dimensional Tolerances for Cut C-Cores per EIA Standard RS-217

Core Dimension	Material Thickness (inches)	Allowable Tolerances (inches)
A = Outside Core Width	All	+0.031 max when A ≤ 1.500 +0.047 max when 1.500 < A ≤ 2.500 +0.062 max when 2.500 < A ≤ 3.500 +0.094 max when A > 3.500
B = Outside Core Height	0.0005, 0.001, 0.002	+0.062 max when B ≤ 2.000 +0.188 max when 2.000 < B ≤ 4.000 +0.375 max when B > 4.00
	0.004 through 0.014	+0.062 max when B < 3.000 +0.156 max when 3.000 ≤ B ≤ 4.000 +0.188 max when 4.000 < B ≤ 6.000 +0.375 max when 6.000 < B ≤ 12.000 +0.438 max when B > 12.000
D = Core Strip Width	All *	+0.031, -0 when D ≤ 1.000 +0.047, -0 when 1.000 < D ≤ 2.812 +0.062, -0 when D > 2.812 *+0.094, -0 when E > 2.500*
E = Core Leg Buildup	0.0005 through 0.004	±0.016 when E ≤ 0.250 +0.031, -0.016 when 0.250 < E ≤ 1.000 ±0.031 when E > 1.000
	0.007 through 0.014	±0.016 when E < 0.250 +0.031, -0.016 when 0.250 ≤ E < 0.562 ±0.031 when E ≥ 0.562
F = Inside Window Width	All	-0.016 minimum
G = Inside Window Height	All	-0.016 minimum
K = Cut Dimension	All	G÷2 if G < 3.750, ± 0.062 1.687 if G ≥ 3.750, ±0.062
R = Inside Window Corner Radius (Reference Only)	0.0005 through 0.004 0.007 through 0.014 All All	0.031 when F & G ≤ 2.000 0.062 when F & G ≤ 2.000 0.125 when F or G > 2.000 and F & G ≤ 5.000 0.156 when F > 5.000
Maximum Core Tilt	All	0.031 when B < 3.500 0.062 when B ≥ 3.500

A & B dimensions are held to a maximum tolerance only, negative tolerances are controlled by the F, G, & E dimensions. F & G dimensions are held to a minimum tolerance only, positive tolerances are controlled by the A, B & E dimensions.

* Nanocrystalline tolerance on the D dimension is ± the stated positive tolerance to accommodate material shrinkage during the annealing process. Other tolerances may be different depending on core geometry. Contact our engineering department for more details.

➢ **MK Magnetics will gladly manufacture cores to your specific dimensional and physical requirements such as: non-standard mechanical tolerances, multiple cuts, or diamond lapped for lowest possible excitation and/or acoustical noise.**

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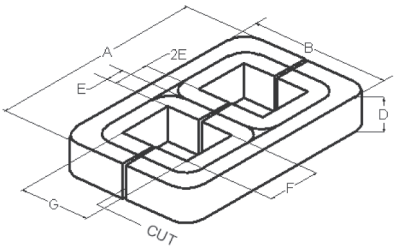
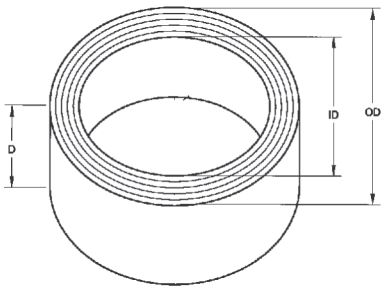


E-Core

Customizable To Meet Your Needs

- Same as C-Cores



Toroid

Customizable To Meet Your Needs

- Cut in half
- Diamond lapped if cut in half
- Epoxy coated
- Matched sets
- Gapped to meet your inductance requirements
- Air gapped for Hall sensors
- Chamfered or radiused ID & OD
- Special stack resistance requirements
- Nylon & Aluminum cased
- Call for more details about these and other possibilities
- Multiple Cuts

Dimensional Tolerances for Cut E-Cores

Core Dimension	Material Thickness (inches)	Allowable Tolerances (inches)
A = Outside Core Width	0.001 through 0.004	+0.094 max when A ≤ 5.000 +0.188 max when 5.000 < A ≤ 10.000 +0.312 max when A > 10.000
	0.007 through 0.014	+0.125 max when A ≤ 5.000 +0.250 max when 5.000 < A ≤ 10.000 +0.375 max when A > 10.000
B = Outside Core Height	0.001, 0.002, 0.004	+0.094 max when B ≤ 5.000 +0.156 max when 5.000 < B ≤ 10.000 +0.250 max when B > 10.000
	0.007 through 0.014	+0.125 max when B ≤ 5.000 +0.188 max when 5.000 < B ≤ 10.000 +0.312 max when B > 10.000
D = Core Strip Width	All *	+0.031, -0 when D < 1.000 +0.047, -0 when 1.000 ≤ D < 2.000 +0.062, -0 when D ≥ 2.000 *+0.156, -0 when 2E > 2.000*
2E = Core Leg Buildup	All	±0.031 when 2E ≤ 1.000 +0.062, -0.031 when 1.000 < 2E ≤ 2.000 ±0.062 when 2E > 2.000
F = Inside Window Width	All	-0.016 minimum
G = Inside Window Height	All	-0.016 minimum
K = Cut Dimension	All	G ÷ 2.000, ± 0.062
R = Inside Window Corner Radius (Reference Only)	0.0005 through 0.004 0.007 through 0.014 All All	0.031 when F & G ≤ 2.000 0.062 when F & G ≤ 2.000 0.125 when F or G > 2.000 and F & G ≤ 5.000 0.156 when F > 5.000
Maximum Tilt	All	0.031 when F < 2.500 0.062 when F ≥ 2.500

A&B dimensions are held to a maximum tolerance only, negative tolerances are controlled by the F, G, & 2E dimensions. F&G dimensions are held to a minimum tolerance only, positive tolerances are controlled by the A, B & 2E dimensions.

* Nanocrystalline tolerance on the D dimension is ± the stated positive tolerance to accommodate material shrinkage during the annealing process. Other tolerances may be different depending on core geometry. Contact our engineering department for more details.

Dimensional Tolerances for Toroids

Core Dimension	Material Thickness (inches)	Allowable Tolerances (inches)
OD = Outside Core Width or Diameter	All	+0.031, -0.016 when OD ≤ 1.500 ±0.031 when 1.500 < OD ≤ 2.500 +0.062, -0.031 when 2.500 < OD ≤ 3.500 ±0.062 when 3.500 < OD ≤ 12.000 +0.125, -0.062 when 12.000 < OD ≤ 24.000 ±0.125 when OD > 24.000
ID = Inside Core Width or Diameter	All	±0.016 when ID ≤ 2.500 +0.031, -0.016 when 2.500 < ID ≤ 3.500 ±0.031 when 3.500 < ID ≤ 12.000 +0.062, -0.031 when 12.000 < ID ≤ 24.000 ±0.062 when ID > 24.000
D = Core Strip Width	All *	+0.031, -0 when D ≤ 1.000 +0.047, -0 when 1.000 < D ≤ 2.812 +0.062, -0 when D > 2.812
E = Core Buildup	All	±0.016 when E ≤ 0.250 +0.031, -0.016 when 0.250 < E ≤ 1.000 ±0.031 when E > 1.000

For unimpregnated cores, measurements will be made with core shaped into the most favorable position because these cores are often flexible.

For epoxy coated (cased or encapsulated) cores add .0.040" to the maximum "OD" and "D" dimensions, subtract 0.040" from the minimum "ID" dimension. "E" dimension tolerance applies before coating only.

* Nanocrystalline tolerance on the D dimension is ± the stated positive tolerance to accommodate material shrinkage during the annealing process. Other tolerances may be different depending on core geometry. Contact our engineering department for more details.

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Prime Nanocrystalline

Now Available in Thinner High Frequency .0005" Thickness & Lower Cost Sub-Prime

Nanocrystalline soft magnetic material is a fairly new development. The material composition is 82% iron with the remaining balance silicon, boron, niobium, copper, carbon, molybdenum, and nickel. The raw material is manufactured and supplied in an amorphous state. It is recrystalized into a precise mix of amorphous and Nanocrystalline phases when annealed, giving the material its unique magnetic properties. Thin .0005" for best performance at high frquencies & Sub-Prime .0007" for lower cost when higher core loss is acceptable.

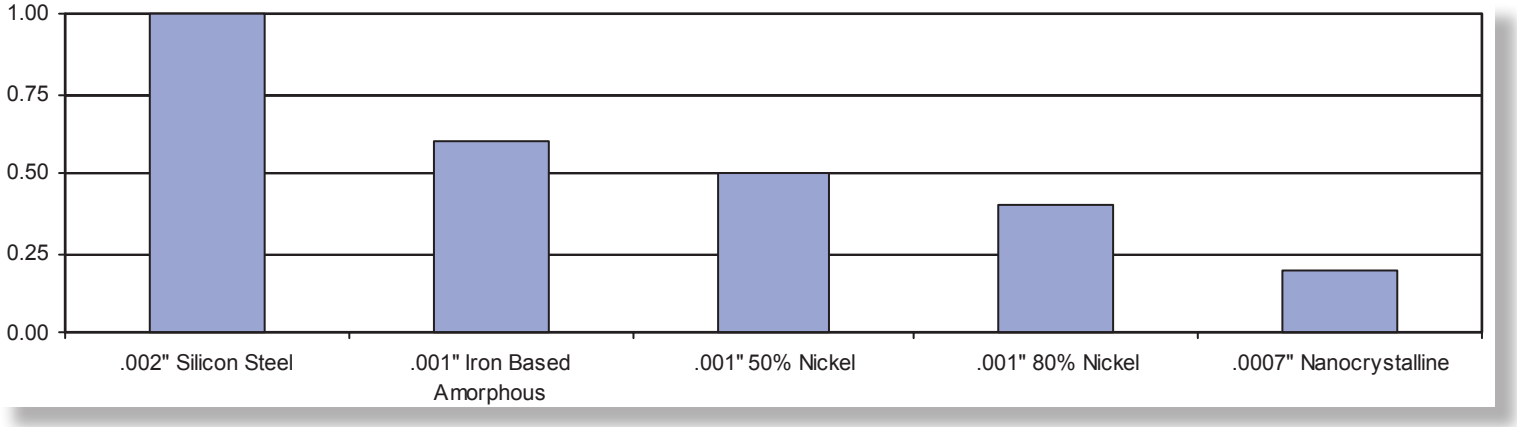
Why use Nanocrystalline material in your tape core applications?

- Typically 1/3rd the core loss of .001" 80% Nickel (Supermalloy®) cut cores, 1/6th for toroids
- Typically 1/5th the core loss of .001" 50% Nickel (Deltamax®) cut cores, 1/10th for toroids
- Typically 1/10th the core loss of .001" iron based Amorphous cut cores, 1/12th for toroids
- Typical initial permeability in excess of 60,000 @ 40 gauss, 100Hz for cased toroids, greater than .001" 80% Nickel material (Supermalloy®)
- 12,300 gauss saturation flux density
- Near zero ppm magnetostriction at up to 130°C operating temperature making it stress insensitive and low noise
- High curie temperature of approximately 570°C
- Minimal change in magnetic performance over the operating range of -50°C to +130°C, max 200°C
- High value substitution of nickel based (Supermalloy®) and iron based amorphous materials
- Size and weight reduction potential when substituting for higher loss materials
- Ferrite substitution when flux density, temperature, and shock problems are present
- 7.3 grams/cc density, 17% lighter than 80% nickel reducing effective loss per unit of volume even lower
- Typical stacking densities greater than 78%

Cores manufactured out of Nanocrystalline material, in most cases, are a drop-in replacement for cores manufactured or designed out of .001" & .002" 80% nickel (Supermalloy®) materials, and can be higher-performing. **They may also be an ideal substitute for larger ferrite cores,** when the application is in the lower frequency range for ferrites, and when flux density and performance over a wide temperature range is a must or has been a problem.

There appears to be no limitation to the types of cores that can be manufactured from Nanocrystalline material. C-cores, E-cores, Uncased Toroids, Cased Toroids, Multiple cuts, Gapped Toroids, Bars/Blocks, Stacked and Bonded Assemblies, etc.

Potential Core Weight Reductions When Operating at 2000 Gauss, 20,000 Hz



This material has the best overall performance over a broad range of frequencies when compared to other available materials, including .001" 80% nickel (Supermalloy®). It's relatively high saturation flux density, combined with its incredible low loss and high permeability through a wide frequency range, makes it useful in many applications such as, but not limited to:

- High frequency or broadband transformers to several hundred kilohertz
- Broadband current sensors into the megahertz
- High frequency filter chokes (inductors)
- Pulse transformers as narrow as 30 nsec, perfect for our new .0005" thick material. Stacked assemblies available to reduce lamination voltage stress.

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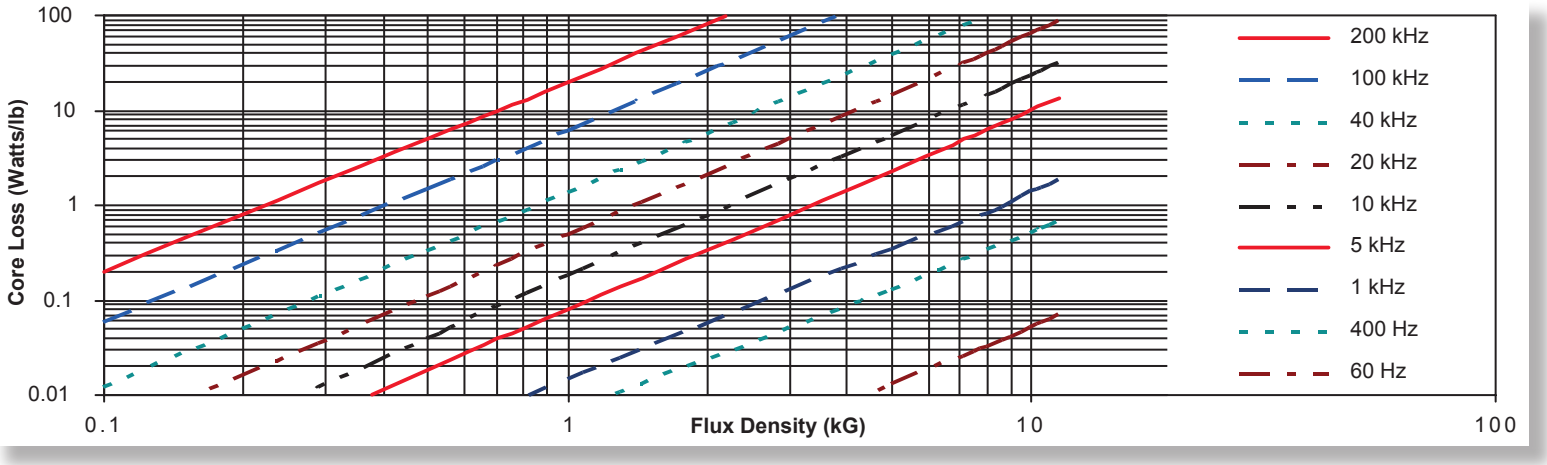
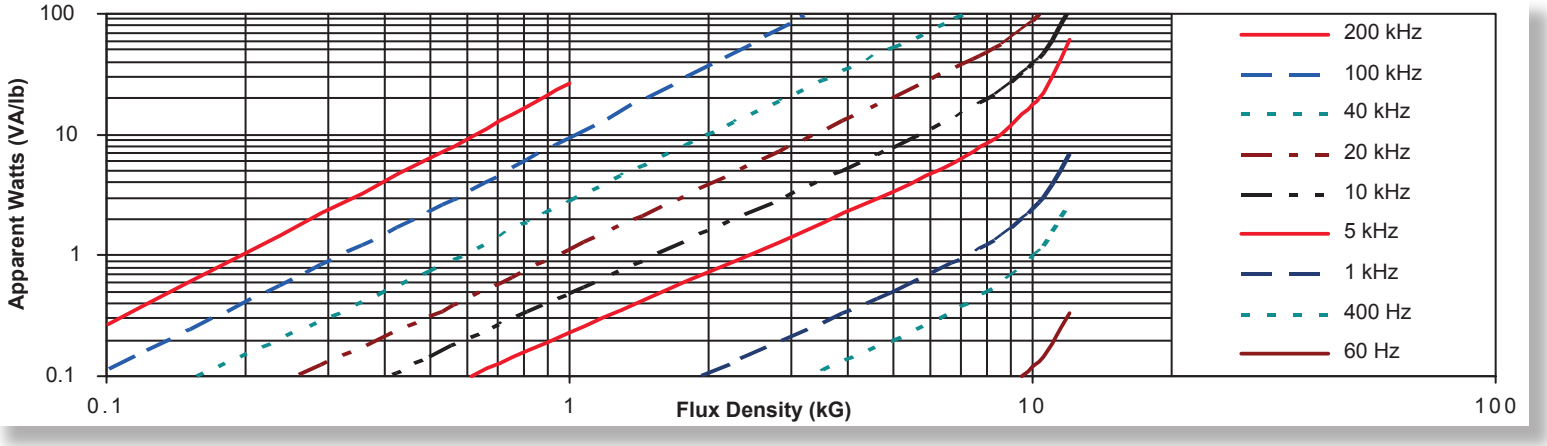
Nanocrystalline Characteristic Curves

Core Loss Vs. Flux Density
.0007" Nanocrystalline Impregnated Cores - Typical



Apparent Watts "Volt-Amps" Vs. Flux Density
.0007" Nanocrystalline Impregnated Cores - Typical



The following are some guidelines to follow when ordering Nanocrystalline cores

- Cores as large as 6.0' X 7.0'+, and weights from .002lbs - 4000lbs+.
- Cores ordered with strip widths of .375", .500" and 25mm, 30mm, 45mm, 50mm (max) eliminate the need for slitting and are less costly due to the elimination of slitting scrap and time. Smallest width available is .125", largest in M1 grade is 1.968" and MB grade is up to 5.6" without stacking cores.
- Stacked and bonded assemblies are available to meet your wide width needs. They also perform better because they have reduced eddy current losses due to reduced voltage stresses on the narrower lamination widths.
- Cores can be ordered with a very thin layer of clear high temp enamel, encapsulating the core to help improve handling by containing loose flakes of material that can get into skin and transformer oil.
- Magnetics can be optimized with special processes for the approximate frequencies of operation and/or application.
  - Low Frequency (DC-10kHz)
  - Mid Frequency (10kHz-40kHz)
  - High Frequency (40kHz-1MHz)
  - Very High Frequency (1MHz+), ideal for the new .0005" thick Nanocrystalline
  - Longitudinal field anneal for a square hysteresis loop and switching applications and transverse anneal for flat loop with more linear permeability.
  - No field anneal for a round or S-shaped hysteresis loop (MK Magnetics Standard) for minimal loss and maximum permeability , great for most impregnated and/or cut cores and toroids

High Voltage Products. High Voltage Experts.

New Product Announcement

Optifficient Core Series

Ultra Low Loss Amorphous Cores Utilizing Metglas® 2605SA1 Mat'l

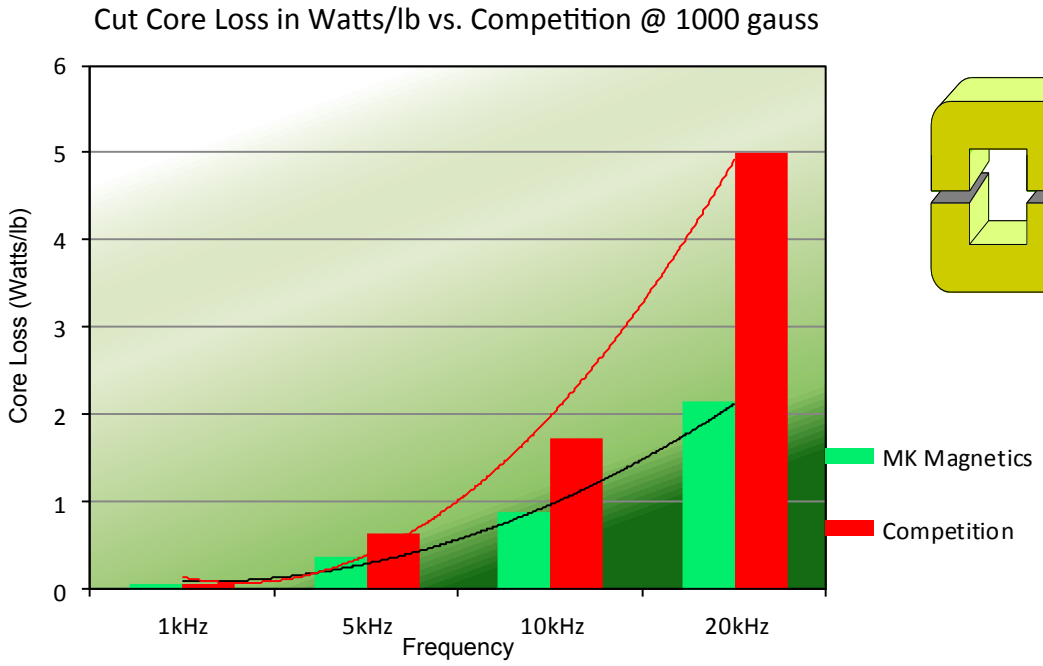
* **30%+ Lower Loss** than the Competition: MK Magnetics' uniquely processed cores: Optimized anneal, Higher interlaminar resistance, Superior bond = **Superior Performance**

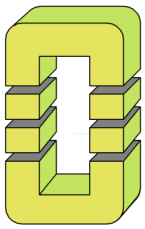
Ideal for Renewable Energy Applications: PV & Wind Power

* Optimized for Low Loss, High Frequency Gapped Filters: **Inverters & Converters**

Features

* Single & Multi-gapped C&E-Cores
* Single & Multi-gapped Toroids
* AMCC-size equivalents
* Custom shapes & sizes, to 1000's/lbs
* One-off to millions/year
* 4 week typical starting lead times
* Expedited Prototypes available
* Engineering design support





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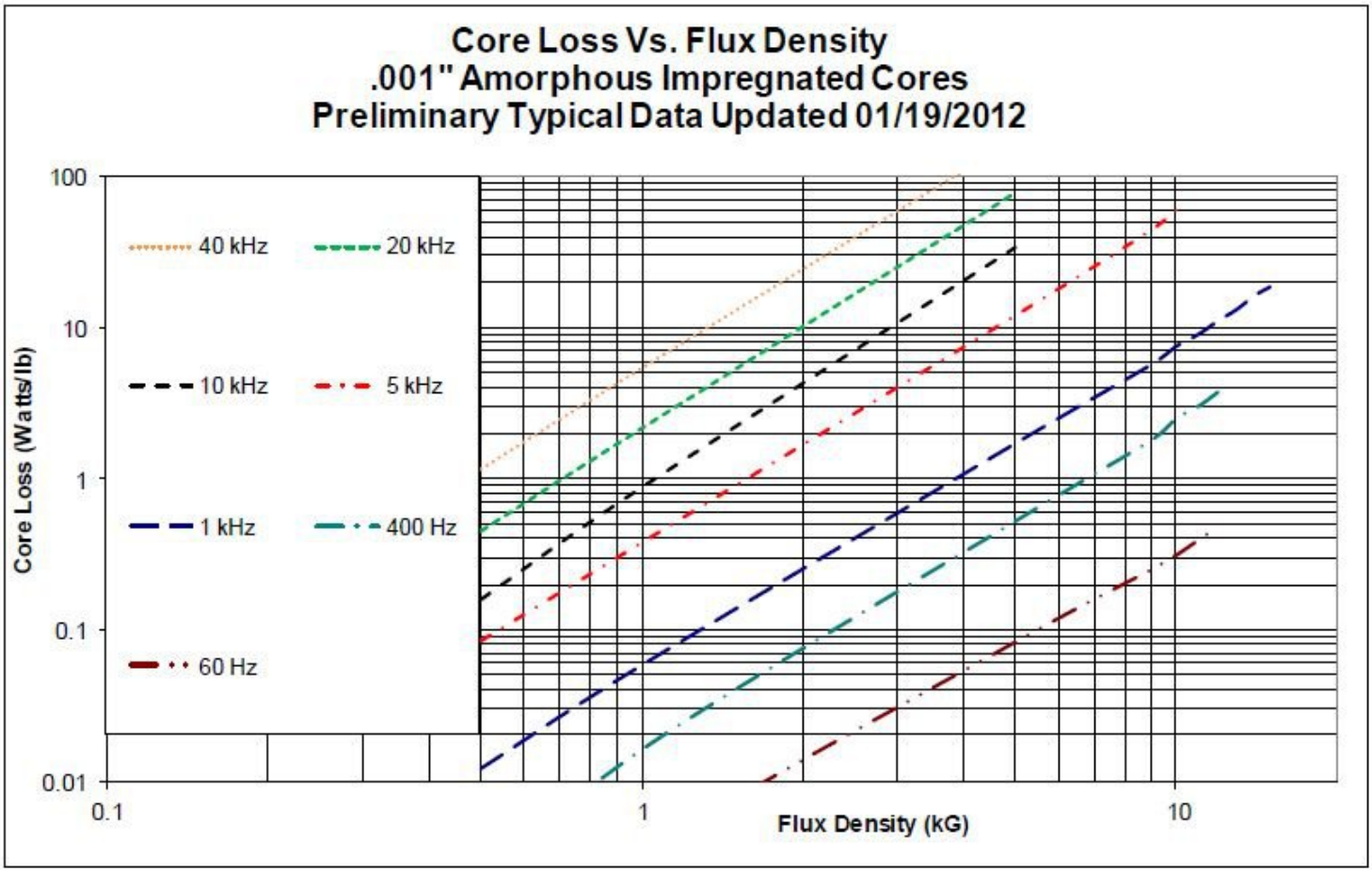

Release Date: 01/19/2012

Note: Actual loss may vary due to core size and geometry

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Metglas® is a registered trademark of Metglas Inc.

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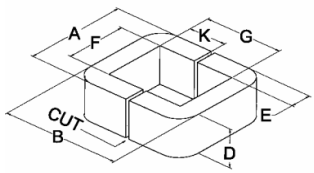
Metglas Inc. "AMCC" to MK Magnetics Inc. Dimensional Tolerances (in mm)

Metglas Inc. 2605SA1®	MK Magnetics 2605SA1®	MK Magnetics Nanocrystalline	E	±	F	ref	G	ref	D	±	A	±	B	±
AMCC-4	SC2105L1	SC2105M1 & MB	9.0	0.5	10.0	-	32.8	-	15.0	0.5	28.0	1.5	50.8	1.3
AMCC-6.3	SC2043L1	SC2043M1 &MB	10.0	0.5	11.0	-	33.0	-	20.0	0.5	31.0	1.0	53.0	2.0
AMCC-8	SC2044L1	SC2044M1 &MB	11.0	0.8	13.0	-	30.0	-	20.0	0.5	35.0	1.0	52.0	2.0
AMCC-10	SC2045L1	SC2045M1 &MB	11.0	0.8	13.0	-	40.0	-	20.0	0.5	35.0	1.0	62.0	2.0
AMCC-16A	SC2047L1	SC2047M1 &MB	11.0	0.8	13.0	-	40.0	-	25.0	0.5	35.0	1.0	62.0	2.0
AMCC-16B	SC2048L1	SC2048M1 &MB	11.0	0.8	13.0	-	50.0	-	25.0	0.5	35.0	1.0	72.0	2.0
AMCC-20	SC2049L1	SC2049M1 &MB	11.0	0.8	13.0	-	50.0	-	30.0	0.5	35.0	1.0	72.0	2.0
AMCC-25	SC2051L1	SC2051M1 &MB	13.0	0.8	15.0	-	56.0	-	25.0	0.5	41.0	1.0	82.0	2.0
AMCC-32	SC2052L1	SC2052M1 &MB	13.0	0.8	15.0	-	56.0	-	30.0	0.5	41.0	1.0	82.0	2.0
AMCC-40	SC2053L1	SC2053M1 &MB	13.0	0.8	15.0	-	56.0	-	35.0	0.5	41.0	1.0	82.0	2.0
AMCC-50	SC2054L1	SC2054M1 &MB	16.0	1.0	20.0	-	70.0	-	25.0	0.5	52.0	1.0	102.0	3.0
AMCC-63	SC2055L1	SC2055M1 &MB	16.0	1.0	20.0	-	70.0	-	30.0	0.5	52.0	1.0	102.0	3.0
AMCC-80	SC2056L1	SC2056M1 &MB	16.0	1.0	20.0	-	70.0	-	40.0	1.0	52.0	1.0	102.0	3.0
AMCC-100	SC2057L1	SC2057M1 &MB	16.0	1.0	20.0	-	70.0	-	45.0	1.0	52.0	1.0	102.0	3.0
AMCC-125	SC2058L1	SC2058M1 &MB	19.0	1.0	25.0	-	83.0	-	35.0	1.0	63.0	1.0	121.0	3.0
AMCC-160	SC2059L1	SC2059M1 &MB	19.0	1.0	25.0	-	83.0	-	40.0	1.0	63.0	1.0	121.0	3.0
AMCC-200	SC2060L1	SC2060M1 &MB	19.0	1.0	25.0	-	83.0	-	50.0	1.0	63.0	1.0	121.0	3.0
AMCC-250	SC2061L1	SC2061M1 &MB	19.0	1.0	25.0	-	90.0	-	60.0	1.0	63.0	1.0	128.0	3.0
AMCC-320	SC2062L1	SC2062M1 &MB	22.0	1.0	35.0	-	85.0	-	50.0	1.0	79.0	1.0	129.0	4.0
AMCC-400	SC2063L1	SC2063M1 &MB	22.0	1.0	35.0	-	85.0	-	65.0	1.0	79.0	1.0	129.0	4.0
AMCC-500	SC2064L1	SC2064M1 &MB	25.0	1.0	40.0	-	85.0	-	55.0	1.0	90.0	1.0	135.0	4.0
AMCC-630	SC2065L1	SC2065M1 &MB	25.0	1.0	40.0	-	85.0	-	70.0	1.0	90.0	1.0	135.0	4.0
AMCC-800A	SC2066L1	SC2066M1 &MB	25.0	1.0	40.0	-	85.0	-	85.0	1.5	90.0	1.0	135.0	4.0
AMCC-800B	SC2067L1	SC2067M1 &MB	30.0	1.0	40.0	-	95.0	-	85.0	1.5	100.0	1.0	155.0	4.0
AMCC-1000	SC2068L1	SC2068M1 &MB	33.0	1.0	40.0	-	105.0	-	85.0	1.5	106.0	1.0	171.0	5.0

Stock may be available for immediate shipment-contact Customer Service

MK Magnetics dimensional standard



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Tape Wound Core Specialists

Metglas Inc. "AMCC" to MK Magnetics Inc. Part Number Cross Reference

Hitachi Metglas	MK Magntics part numbers			MK Magnetics Dimensioning (in.)				Hitachi-Metglas Dimensioning (mm)			
2605SA1 Metglas®	2605SA1 Metglas®	Nanocryst-alline M1	Nanocryst-alline MB	D (strip)	E (build)	F (window width)	G (window height)	d (strip)	a (build)	b (window width)	c (window height)
AMCC-4	SC2105L1	SC2105M1	SC2015MB	0.590	0.354	0.394	1.291	15.0	9.0	10.0	32.8
AMCC-6.3	SC2043L1	SC2043M1	SC2043MB	0.787	0.394	0.433	1.299	20.0	10.0	11.0	33.0
AMCC-8	SC2044L1	SC2044M1	SC2044MB	0.787	0.433	0.512	1.181	20.0	11.0	13.0	30.0
AMCC-10	SC2045L1	SC2045M1	SC2045MB	0.787	0.433	0.512	1.575	20.0	11.0	13.0	40.0
AMCC-16A	SC2047L1	SC2047M1	SC2047MB	0.984	0.433	0.512	1.575	25.0	11.0	13.0	40.0
AMCC-16B	SC2048L1	SC2048M1	SC2048MB	0.984	0.433	0.512	1.969	25.0	11.0	13.0	50.0
AMCC-20	SC2049L1	SC2049M1	SC2049MB	1.181	0.433	0.512	1.969	30.0	11.0	13.0	50.0
AMCC-25	SC2051L1	SC2051M1	SC2051MB	0.984	0.512	0.591	2.205	25.0	13.0	15.0	56.0
AMCC-32	SC2052L1	SC2052M1	SC2052MB	1.181	0.512	0.591	2.205	30.0	13.0	15.0	56.0
AMCC-40	SC2053L1	SC2053M1	SC2053MB	1.378	0.512	0.591	2.205	35.0	13.0	15.0	56.0
AMCC-50	SC2054L1	SC2054M1	SC2054MB	0.984	0.630	0.787	2.756	25.0	16.0	20.0	70.0
AMCC-63	SC2055L1	SC2055M1	SC2055MB	1.181	0.630	0.787	2.756	30.0	16.0	20.0	70.0
AMCC-80	SC2056L1	SC2056M1	SC2056MB	1.575	0.630	0.787	2.756	40.0	16.0	20.0	70.0
AMCC-100	SC2057L1	SC2057M1	SC2057MB	1.771	0.630	0.787	2.756	45.0	16.0	20.0	70.0
AMCC-125	SC2058L1	SC2058M1	SC2058MB	1.378	0.748	0.984	3.268	35.0	19.0	25.0	83.0
AMCC-160	SC2059L1	SC2059M1	SC2059MB	1.575	0.748	0.984	3.268	40.0	19.0	25.0	83.0
AMCC-200	SC2060L1	SC2060M1	SC2060MB	1.969	0.748	0.984	3.268	50.0	19.0	25.0	83.0
AMCC-250	SC2061L1	SC2061M1	SC2061MB	2.362	0.748	0.984	3.543	60.0	19.0	25.0	90.0
AMCC-320	SC2062L1	SC2062M1	SC2062MB	1.969	0.866	1.378	3.346	50.0	22.0	35.0	85.0
AMCC-400	SC2063L1	SC2063M1	SC2063MB	2.559	0.866	1.378	3.346	65.0	22.0	35.0	85.0
AMCC-500	SC2064L1	SC2064M1	SC2064MB	2.165	0.984	1.575	3.346	55.0	25.0	40.0	85.0
AMCC-630	SC2065L1	SC2065M1	SC2065MB	2.756	0.984	1.575	3.346	70.0	25.0	40.0	85.0
AMCC-800A	SC2066L1	SC2066M1	SC2066MB	3.346	0.984	1.575	3.346	85.0	25.0	40.0	85.0
AMCC-800B	SC2067L1	SC2067M1	SC2067MB	3.346	1.181	1.575	3.740	85.0	30.0	40.0	95.0
AMCC-1000	SC2068L1	SC2068M1	SC2068MB	3.346	1.299	1.575	4.134	85.0	33.0	40.0	105.0

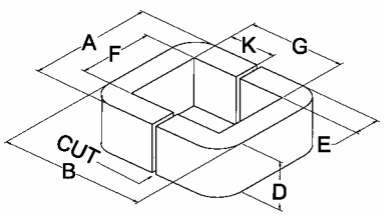
MK Magnetics Amorphous 2605SA1 & Nanocrystalline cut cores—a step above the rest:

- Superior bond strength.
- 180c continuous operating temperature
- Proprietary processes peak magnetic performance and increased interlaminar resistance for minimal high frequency losses
- Drop in replacement for Metglas Inc cores. Manufactured to meet or exceed Metglas Inc.'s standards.
- **Custom Core lead times typically 3-4 weeks! Full line of Metglas AMCC equivalent sized parts usually in stock.**

Customizable To Meet Your Needs

- Available in c-cores, e-cores, toroids, bars, etc..
- Custom shapes & sizes, from several grams to 1800kg+
- **Multiple cuts when airgap distribution is required**
- Tighter dimensional tolerances and magnetics when required
- Call for more details about these and other possibilities

MK Magnetics dimensional standard



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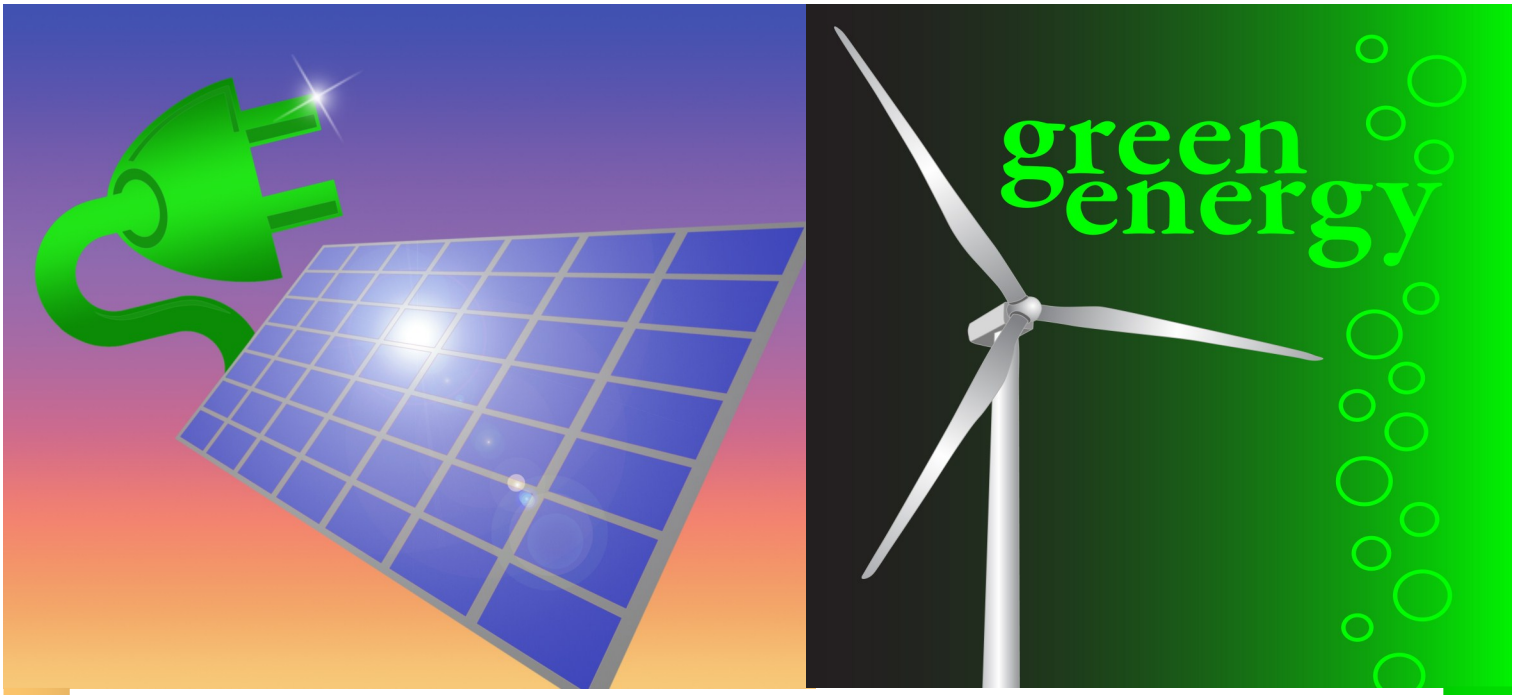
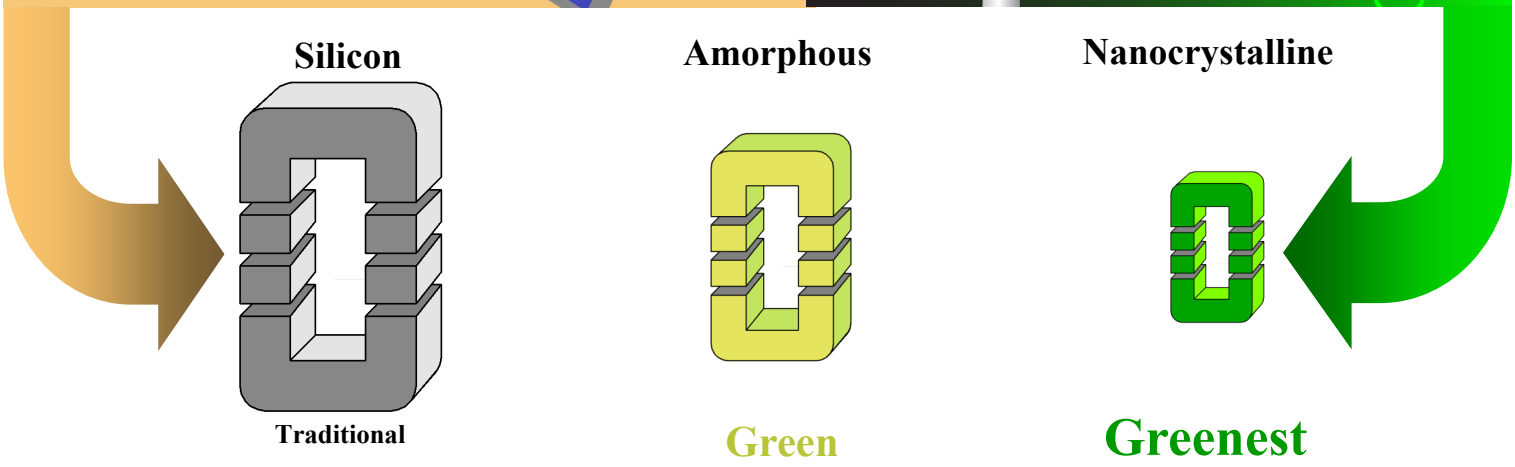
Your Green Link To: Inverter Core Technology





Highly Efficient Tape Core Inverter Products For

* High Power Output Filters Chokes 1kw—1Mw++
* High Power Step Up Transformers 1kw—1Mw++

State of the Art Tape Core Materials

* Nanocrystalline——-Smallest & ***Most Efficient***
* Iron Based Amorphous Metglas 2605SA1——***Increase Efficiency***
* Thin Gage Silicon Steel——***Low Cost & Least Efficient***

Configurations

* Single & Multi gapped C&E-Cores
* Single & Multi Gapped Toroids
* Custom Shapes & Sizes

High Voltage Products. High Voltage Experts.

Tape Wound Core Specialists

QUALITY POLICY STATEMENT

MK Magnetics is committed to satisfying its' customers expectations through product and customer service excellence and compliance with MK Magnetics' Quality Management System.

CORE VALUES

- **Team oriented satisfied employees**
- **Pride in workmanship**
- **Engineering & Customer Service excellence**
- **Employees promote the long term success of MK Magnetics and its customers**