Kool Mμ® MAX Powder Cores

Kool Mμ® MAX is the next generation of sendust cores from Magnetics®. We supercharged our low core loss Kool Mμ material with 50% better DC bias performance for better power handling. Use of copper wire is minimized by maintaining inductance using less turns, resulting in savings in overall component cost. With its super low losses, Kool Mμ MAX does not mimic the temperature rise problems found in iron powder cores. Improve inductor efficiency at a fraction of the cost of High Flux with Kool Mμ MAX.

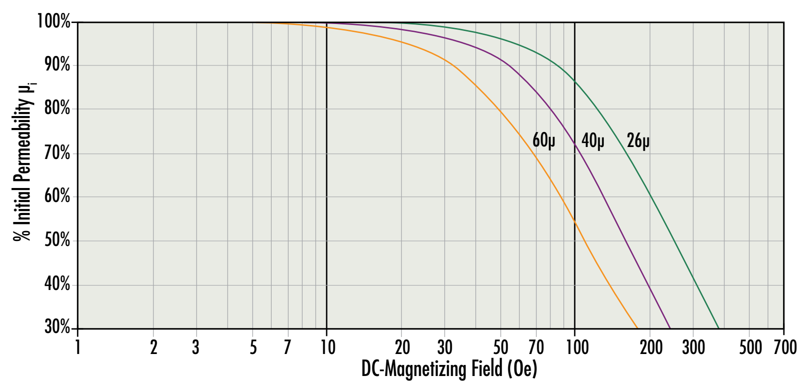
Toroids available in permeabilities 14μ, 19μ, 26μ, 40μ, 60μ, 75μ, and 90μ and sizes 13.5mm OD through 134mm OD. Blocks and E cores available in permeabilities 26μ, 40μ, and 60μ.

Material	Alloy Composition	DC Bias	Core Loss	Relative Cost	Saturation Flux Density (Tesla)	Curie Temp.	60μ Maximum Usable Frequency
Edge	FeNi	Highest	Very Low	High	1.5	500°C	20 MHz
High Flux	FeNi	High	Moderate	High	1.5	500°C	3 MHz
XFlux®	FeSi	High	High	Low	1.6	700°C	3 MHz
Kool Mμ® MAX	**FeSiAl**	**Moderate**	**Low**	**Medium**	**1.0**	**500°C**	**15 MHz**
Kool Mμ® H*f*	FeSiAl	Moderate	Lowest	Medium	1.0	500°C	30 MHz
MPP	FeNiMo	Moderate	Very Low	Highest	0.8	460°C	6 MHz
Kool Mμ®	FeSiAl	Moderate	Low	Lowest	1.0	500°C	5 MHz

Permeability vs. DC Bias Shapes

$$\% \text{ Initial Permeability} = \frac{1}{(a + bH^c)}$$

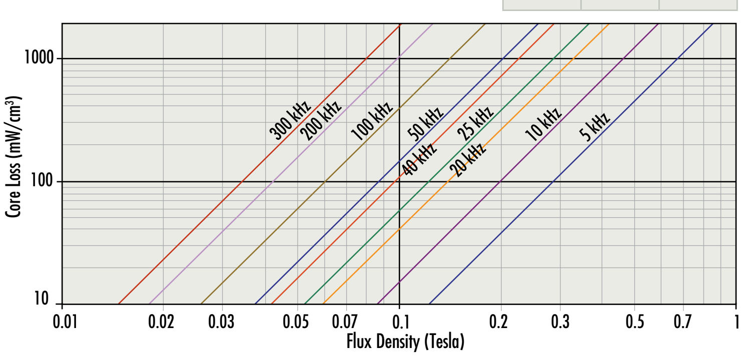
Perm	a	b	c
26μ	0.01	1.60E-07	2.000
40μ	0.01	3.91E-07	2.000
60μ	0.01	2.57E-06	1.758



Core Loss Density 26μ, 40μ Shapes

$$P = a(B^b)(f^c)$$

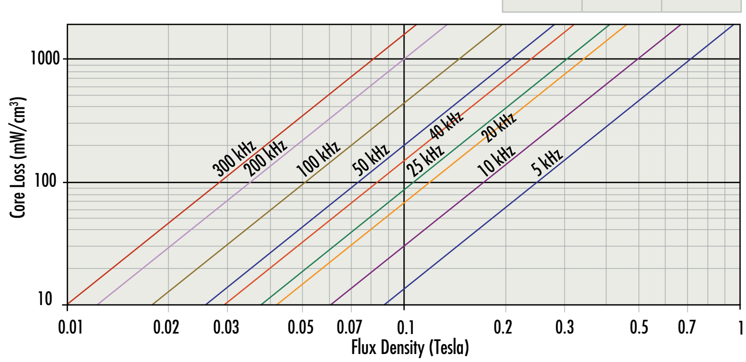
a	b	c
321.03	2.735	1.42



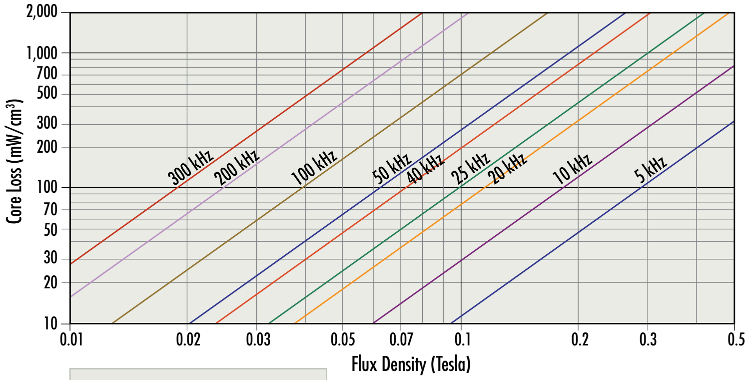
Core Loss Density 60μ Shapes

$$P = a(B^b)(f^c)$$

a	b	c
328.84	2.203	1.17

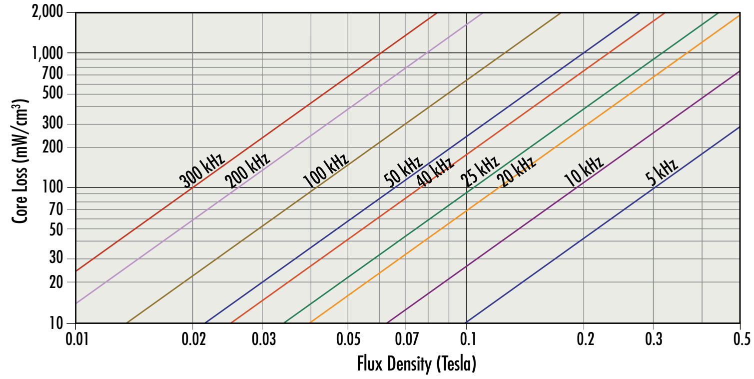


Core Loss Density 14μ Toroids



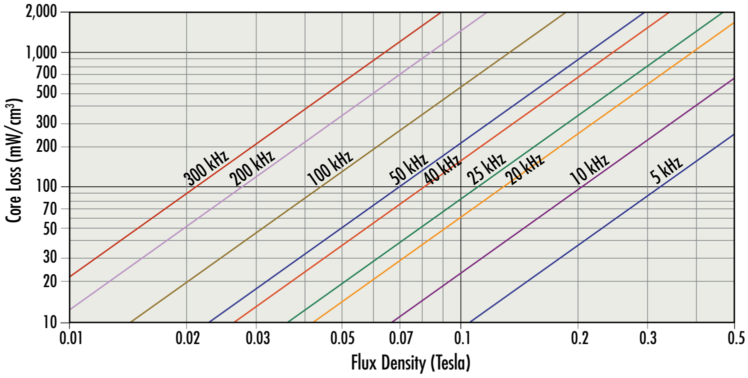
P = a(B^b) (f^c)		
a	b	c
144.49	2.072	1.379

Core Loss Density 19μ Toroids



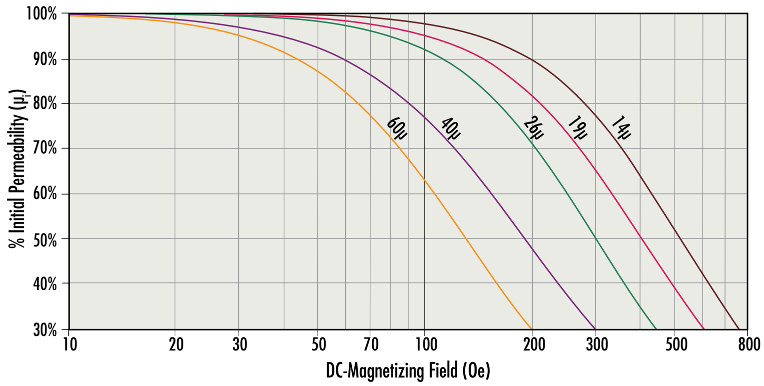
P = a(B^b) (f^c)		
a	b	c
128.84	2.072	1.379

Core Loss Density 26μ, 40μ, 60μ Toroids



P = a(B^b) (f^c)		
a	b	c
113.53	2.072	1.379

Permeability vs. DC Bias Toroids



$$\% \text{ Initial Permeability} = \frac{1}{(a + bH^c)}$$

Perm	a	b	c
14u	0.01	8.274E-09	2.239
19u	0.01	3.136E-08	2.111
26u	0.01	3.444E-08	2.205
40u	0.01	5.919E-07	1.855
60u	0.01	5.917E-07	2.000

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