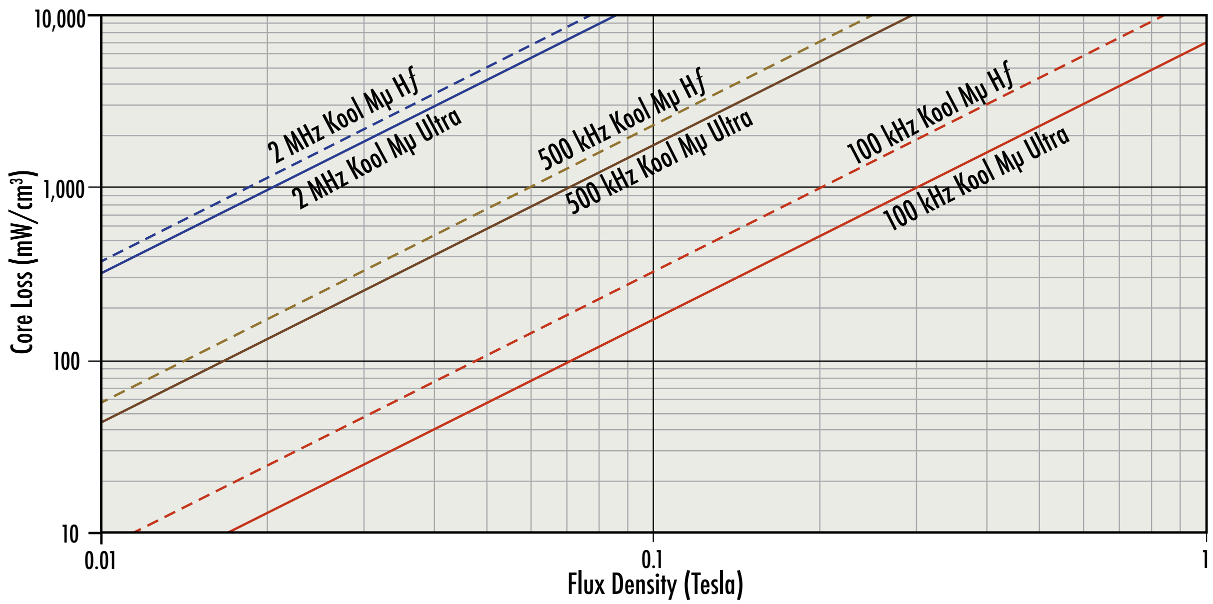
Kool Mμ® Ultra Powder Cores

Magnetics' ultra low loss powder core material, Kool Mμ® Ultra is an optimal solution for telecom and datacom applications. Kool Mμ Ultra is the best of both worlds, with losses approaching ferrite levels while maintaining powder core advantages of soft saturation, stable high temperature performance, and no gap fringing losses. Kool Mμ Ultra has DC bias superior to Kool Mμ and comparable to Kool Mμ H*f*, with core losses almost 30% below Kool Mμ H*f*.

Currently available in 26μ, 40μ, and 60μ toroids and 26μ and 40μ E cores, U cores, Blocks, and Cylinders.

60μ Core Loss Density

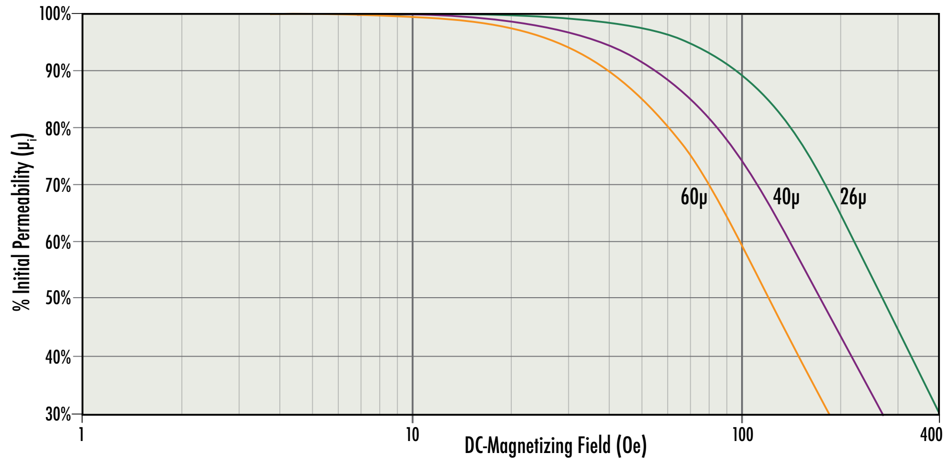


60μ	Perm vs. DC Bias (Oer)		Core Loss (mW/cm³)
	80%	50%	W 100 mT, 50 kHz
Kool Mμ® Ultra	**60**	**120**	**90**
Kool Mμ® H*f*	60	115	140
Kool Mμ®	45	95	190

Permeability vs. DC Bias Toroids

$$\frac{\mu}{\mu_i} \times 100 = \frac{1}{(a + bH^c)}$$

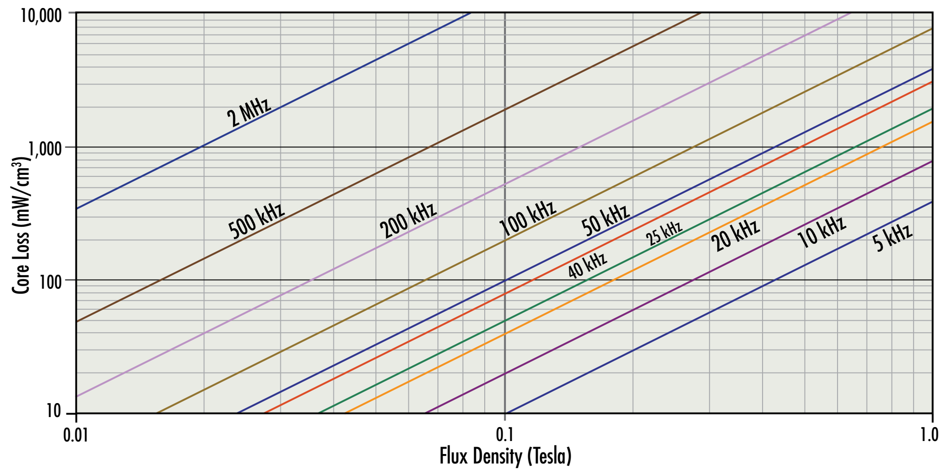
	a	b	c
26μ	0.01	7.38E-08	2.111
40μ	0.01	4.94E-07	1.920
60μ	0.01	6.94E-07	2.000



Core Loss Density 26μ & 40μ Toroids

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

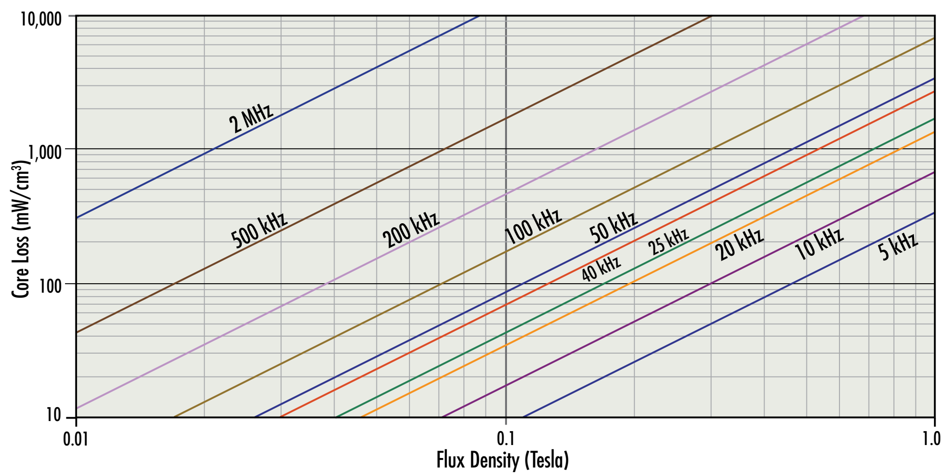
26μ & 40μ	a	b	c
<100 kHz	79.79	1.602	1.000
>100 kHz	11.83	1.602	1.414



Core Loss Density 60μ Toroids

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

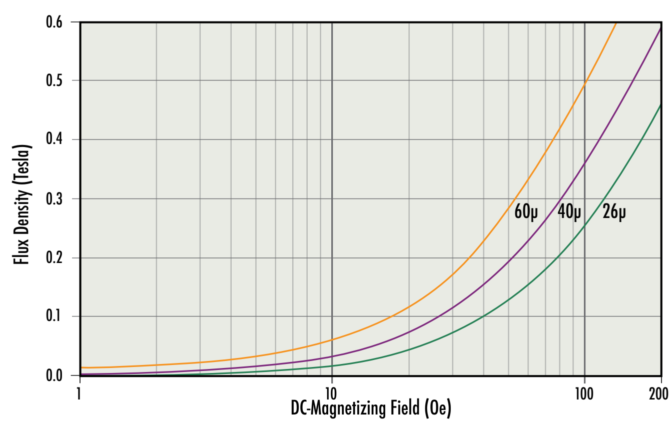
60μ	a	b	c
<100kHz	67.08	1.602	1.000
>100 kHz	9.50	1.602	1.425



DC Magnetization Toroids

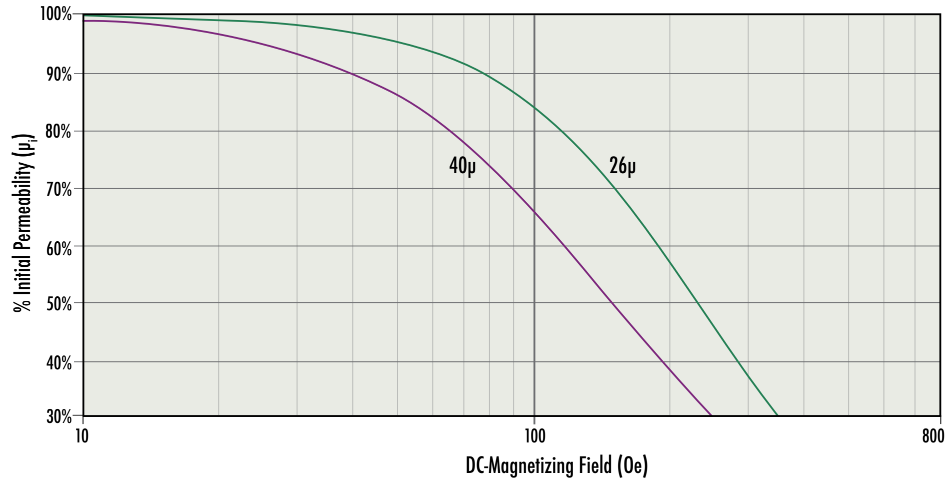
$$B = \left[\frac{a + bH + cH^2}{1 + dH + eH^2}\right]^x$$ Units: B in Tesla, H in Oe

Perm	a	b	c	d	e	x
26μ	2.167E-02	1.082E-02	1.351E-04	3.187E-02	1.136E-04	1.770
40μ	2.664E-02	1.000E-02	1.508E-04	2.735E-02	1.239E-04	1.504
60μ	3.785E-02	1.424E-02	6.078E-04	6.109E-02	5.442E-04	1.471



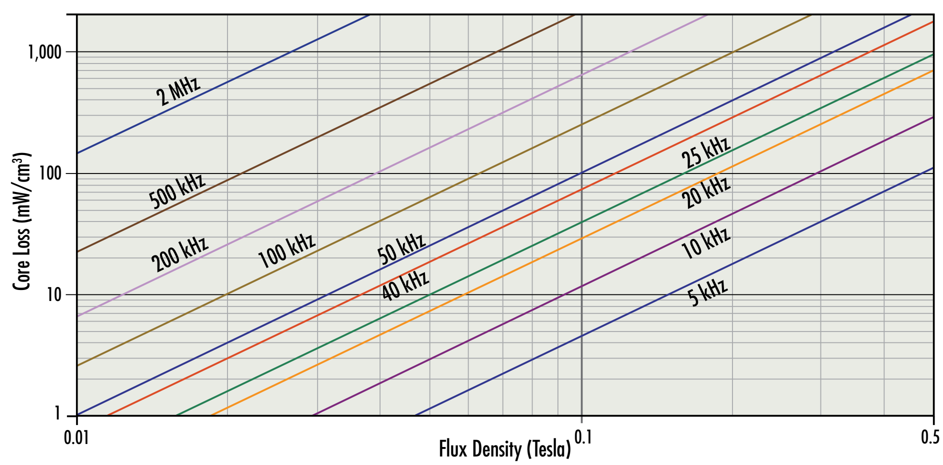
Permeability vs. DC Bias
E Cores & U Cores

$\frac{\mu}{\mu_i} \times 100 = \frac{1}{(a + bH^c)}$			
	a	b	c
26µ	0.01	1.890E-07	2.000
40µ	0.01	2.469E-06	1.658



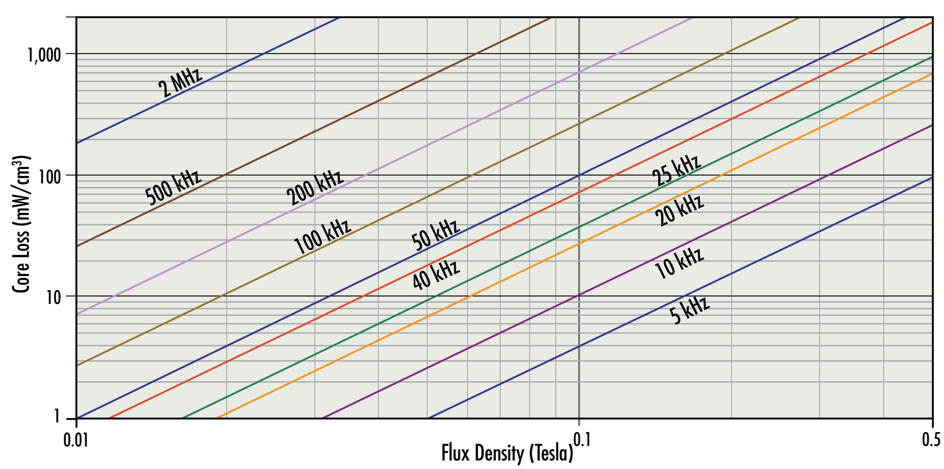
Core Loss Density
26µ E Cores & U Cores

$P = a(B^b)(f^c)$			
	a	b	c
26µ	52.58	1.988	1.334



Core Loss Density
40µ E Cores & U Cores

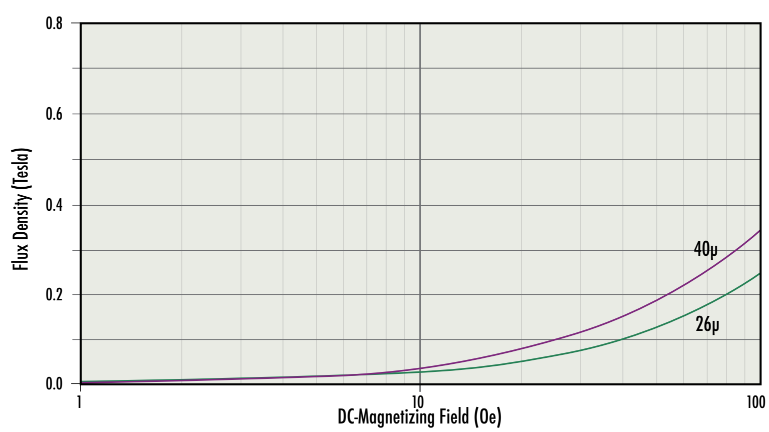
$P = a(B^b)(f^c)$			
	a	b	c
40µ	40.84	1.988	1.399



DC Magnetization
E Cores & U Cores

$$B = \left[\frac{a + bH + cH^2}{1 + dH + eH^2}\right]^x$$ Units: B in Tesla, H in Oe

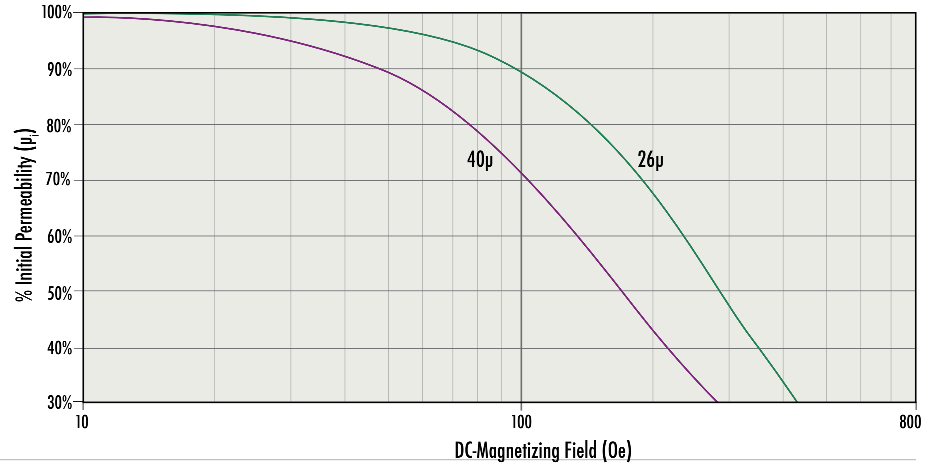
Perm	a	b	c	d	e	x
26µ	5.054E-02	1.010E-02	2.437E-04	4.643E-02	2.296E-04	1.707
40µ	1.191E-02	1.787E-02	2.041E-04	5.023E-02	1.274E-04	1.688



Permeability vs. DC Bias
Blocks, Round Blocks & Cylinders

$$\frac{\mu}{\mu_i} \times 100 = \frac{1}{(a + bH^c)}$$

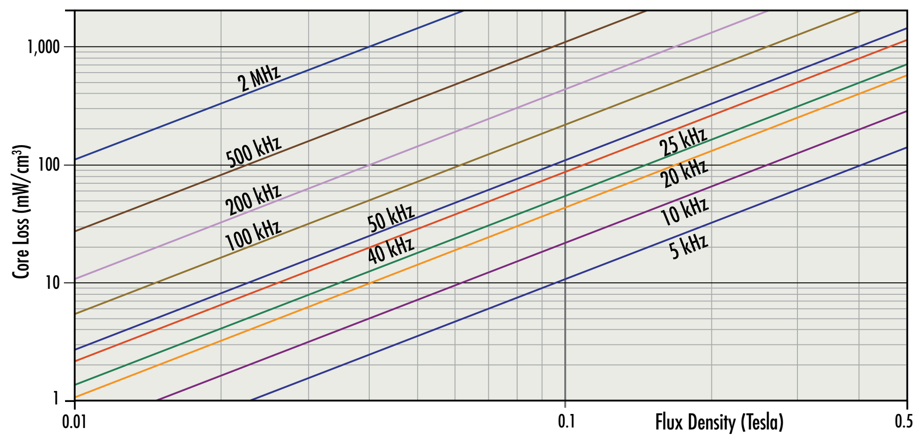
	a	b	c
26µ	0.01	9.203E-08	2.051
40µ	0.01	1.665E-06	1.694



Core Loss Density
26µ Blocks, Round Blocks & Cylinders

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

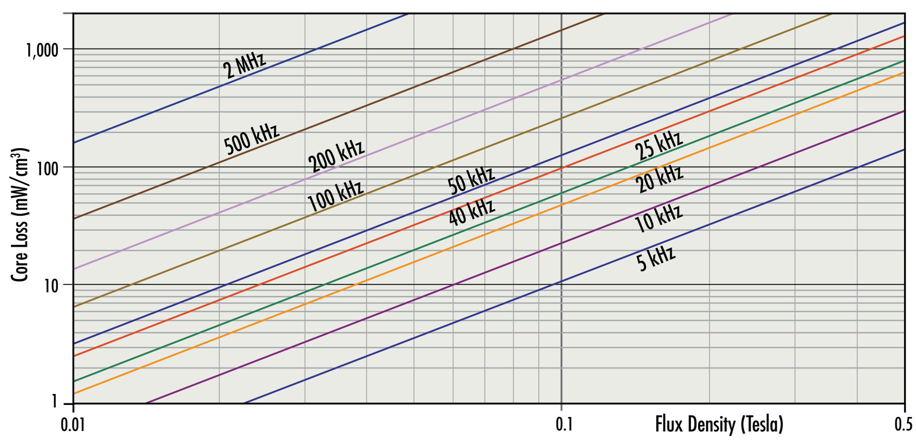
	a	b	c
26µ	87.50	1.602	1.000



Core Loss Density
40µ Blocks, Round Blocks & Cylinders

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

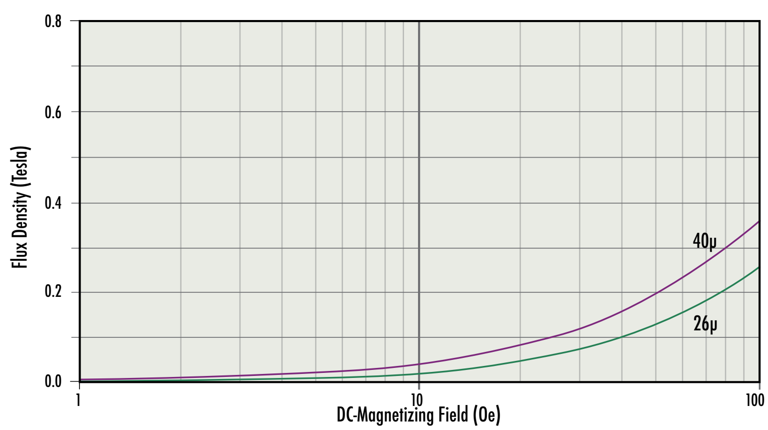
	a	b	c
40µ	77.97	1.602	1.064



DC Magnetization
Blocks, Round Blocks & Cylinders

$$B = \left[\frac{a + bH + cH^2}{1 + dH + eH^2}\right]^x$$ Units: B in Tesla, H in Oe

Perm	a	b	c	d	e	x
26µ	1.203E-02	1.259E-02	2.015E-04	4.373E-02	1.665E-04	1.797
40µ	1.266E-02	1.000E-02	2.211E-04	3.994E-02	1.786E-04	1.405



MAGNETICS®

HEADQUARTERS
110 Delta Drive
Pittsburgh, PA 15238
(p) 1.412.696.1333 magnetics@spang.com
1.800.245.3984 www.mag-inc.com

MAGNETICS INTERNATIONAL
13/F 1-3 Chatham Road South
Tsim Sha Tsui, Kowloon, Hong Kong
(p) +852.2731.9700 asiasales@spang.com
+86.139.1147.1417 www.mag-inc.com