MAGNETICS ®
A Division of Spang & Company

Specification for:

0077439A7

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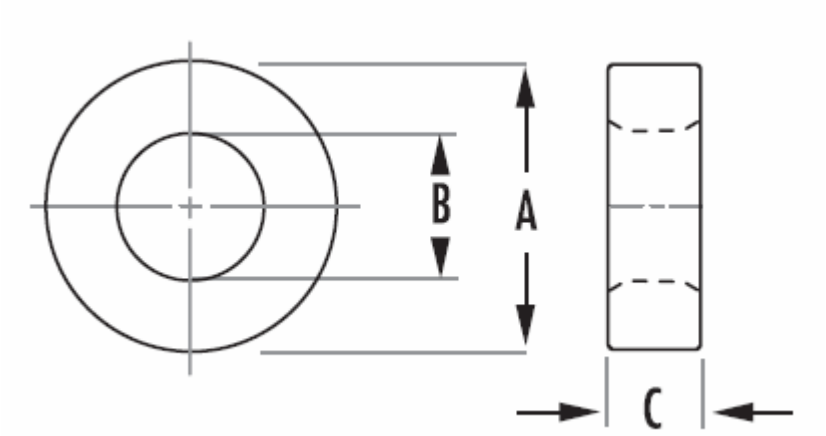
DIMENSIONS



	A (O.D.)	B(I.D.)	C(HGT.)
Max. (mm)	47.6		18.92
Min. (mm)		23.3	

MAGNETIC DATA

l_e (cm)	A_e (cm^2)	V_e (cm^3)	Window Area (cm^2)	Core Weight (gm)	WaAc (cm^4)
10.74	1.990	21.3	4.27	33.7	8.50

A_L = 135 mH/1000 turns ± 8%

Equation for Inductance L (wound Coe) = $A_L \times N^2 \times 0.001$ **+ L_{LK}**, where

A_L : is in mH per 1000 turns (or nH/turn),
L : is in μH and
L_{LK}: is the leakage inductance in μH and is dependent upon the number of turns of the winding. It should be an experimentally determined value but can be roughly estimated by calculation.
N : is the number of turns

Note:

Applied voltage and frequency must be set for below 20 Gauss drive using sinusoidal wave (V_{RMS} (mV) = 4.44 N A_e f B 10^{-5}), and frequency must be set for negligible resonance effects from capacitance in the windings.

Recommended Test Conditions:

Test Temperature	(^oC)	22-26
Test Frequency f	kHz	10
Number of Turns N	Turns	15
Excitation Voltage V_{RMS}	mV	130
Nominal Inductance L without L_{LK}	μH	30.38
Inductance Upper Limit including a possible L_{LK}	μH	42.48[1]
Inductance Lower Limit without including L_{LK}	μH	27.95

Note 1: calculated value using the formula showing in 2005 Power Catalog Page 1-5.

Excitation Voltage

$$V_{rms}\ (mV) = 4.44 \times N \times f \times A_e \times B\ (\leq 20\ gauss) \times 10^{-5}$$

$$130\ (mV) \leq 4.44 \times 15\ turns \times 10000\ Hz \times 1.990\ cm^2 \times 10\ gauss \times 10^{-5}$$

Nominal Inductance using the recommended Test Conditions;

$$L\ (\mu H) = A_L\ (mH) \times N^2 /1000 + L_{LK}, \text{ where}$$

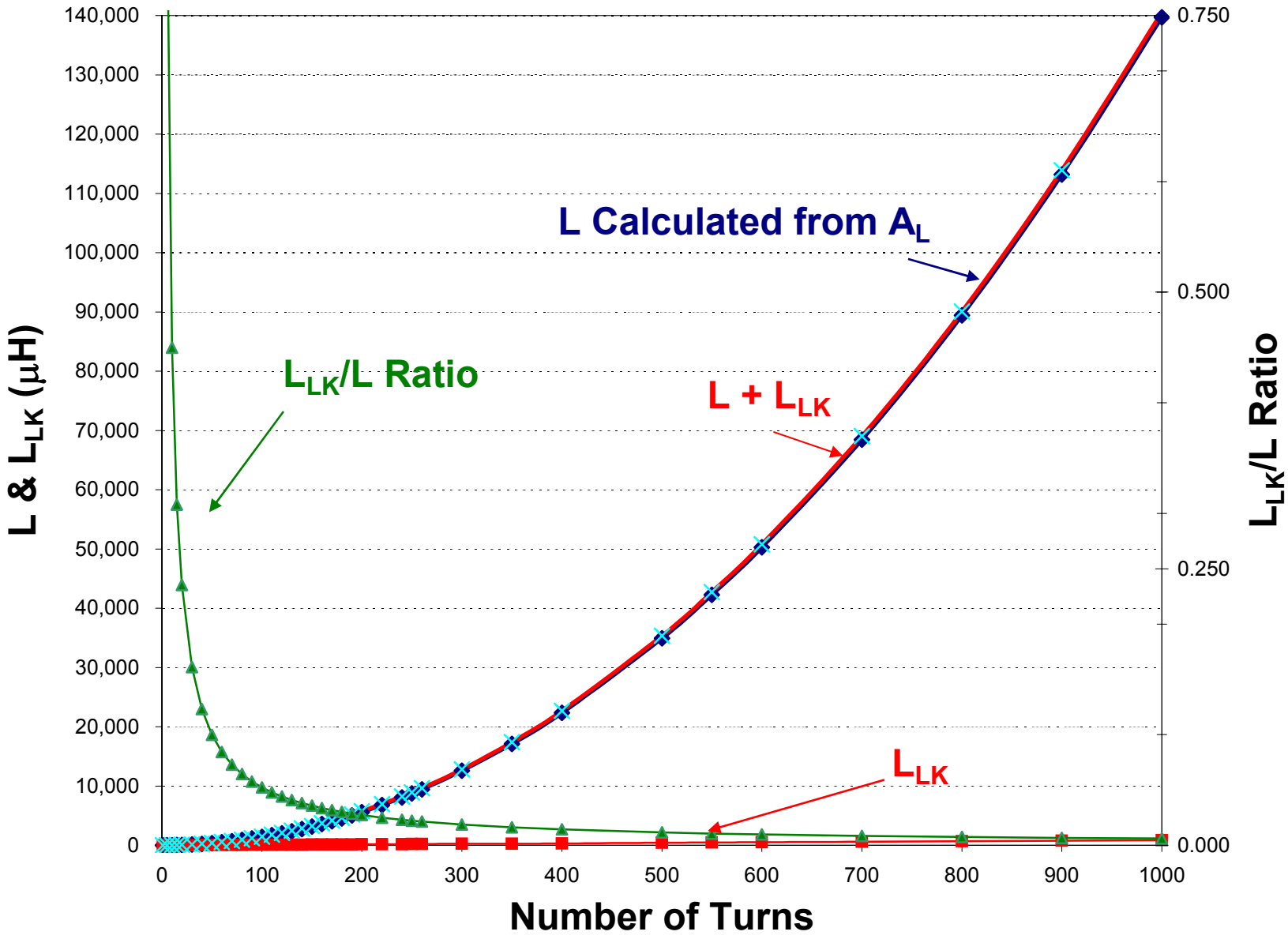
$$L_{LK}\ (\mu H) = 292 \times N^{1.065} \times A_e /(l_e \times 10^2)$$
$$= 292 \times 15^{1.065} \times 1.990 /(10.74 \times 15^2)$$
$$= 9.68\ \mu H \text{ (estimated value)}$$

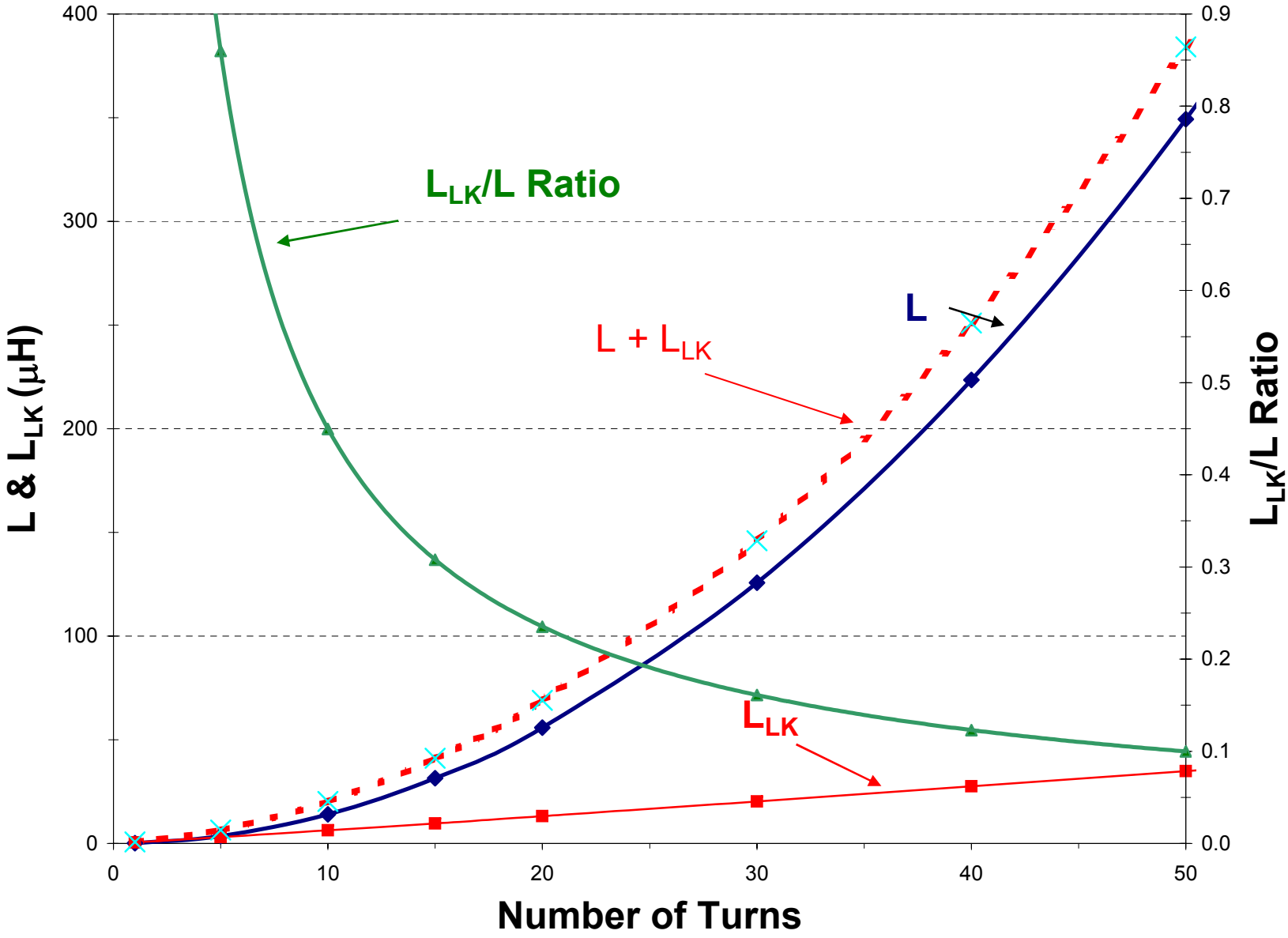
Nominal Inductance L (μH) = 135 (mH) × 15^2 /1000 = 30.38 + 9.68 μH (estimated value)

Inductance Upper Limit = 30.38 x 1.08 + 9.68 = 32.81 + 9.68^2 = 42.48 (μH)

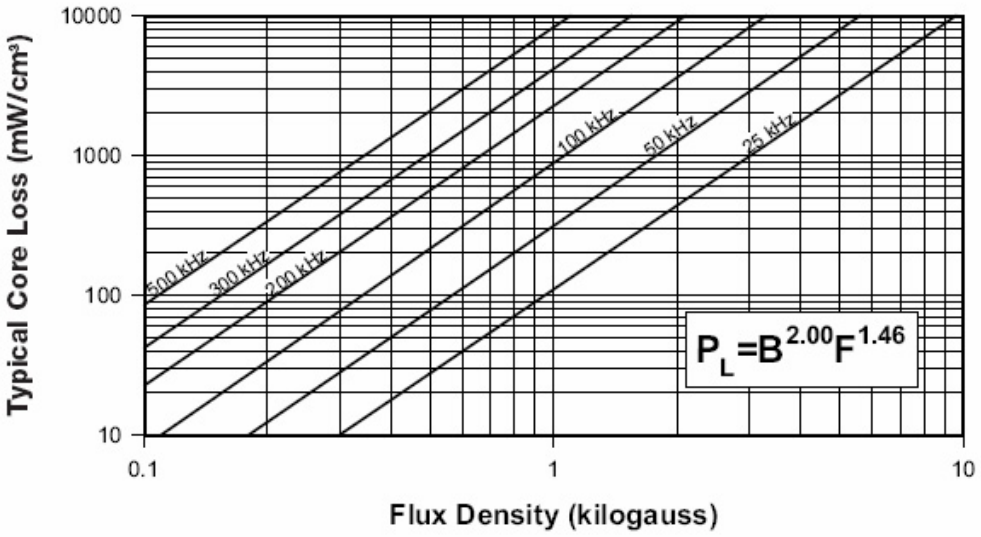
Inductance Lower Limit = 30.38 x 0.92 = 27.95 (μH)

Note 2: The actual L_{LK} needs to be determined experimentally according to the winding practices.

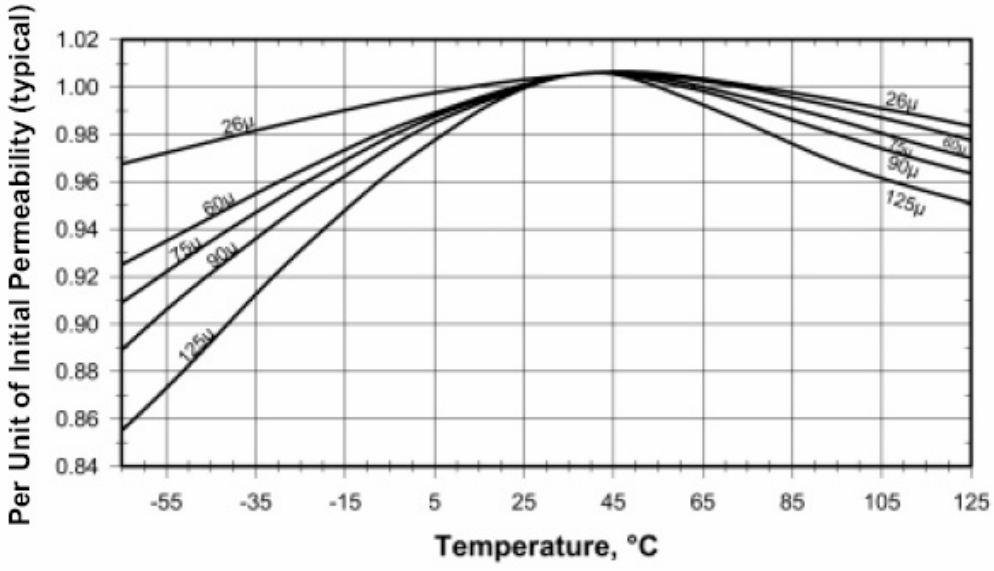

140,000
130,000
120,000
110,000
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
0.750
0.500
0.250
0.000
0
100
200
300
400
500
600
700
800
900
1000
L & L_LK (µH)
L_LK/L Ratio
Number of Turns
L Calculated from A_L
L_LK/L Ratio
L + L_LK
L_LK


400
300
200
100
0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
0
10
20
30
40
50
L & LLK (µH)
LLK/L Ratio
Number of Turns
LLK/L Ratio
L
L + LLK
LLK

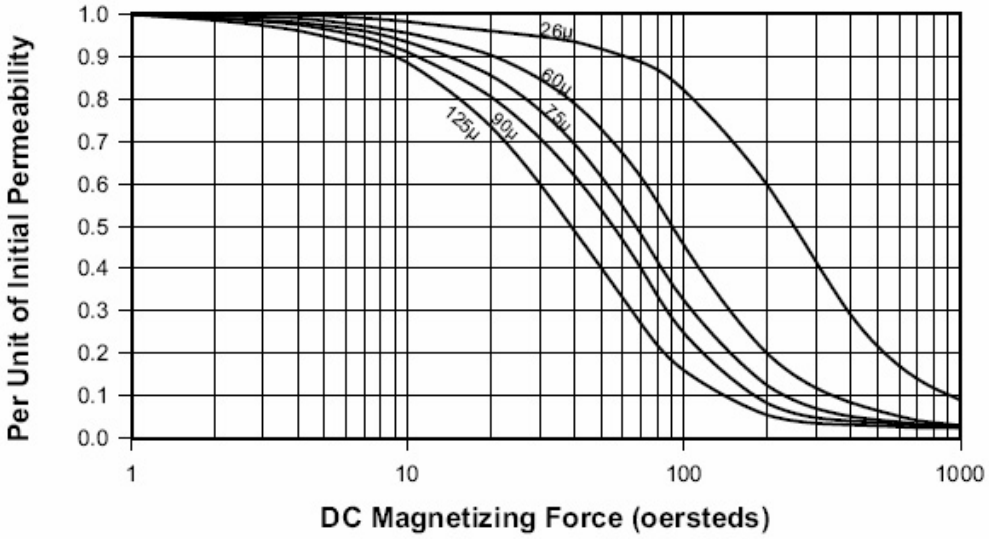
Core Loss Density Curves, Kool Mμ® 60μ - 125μ



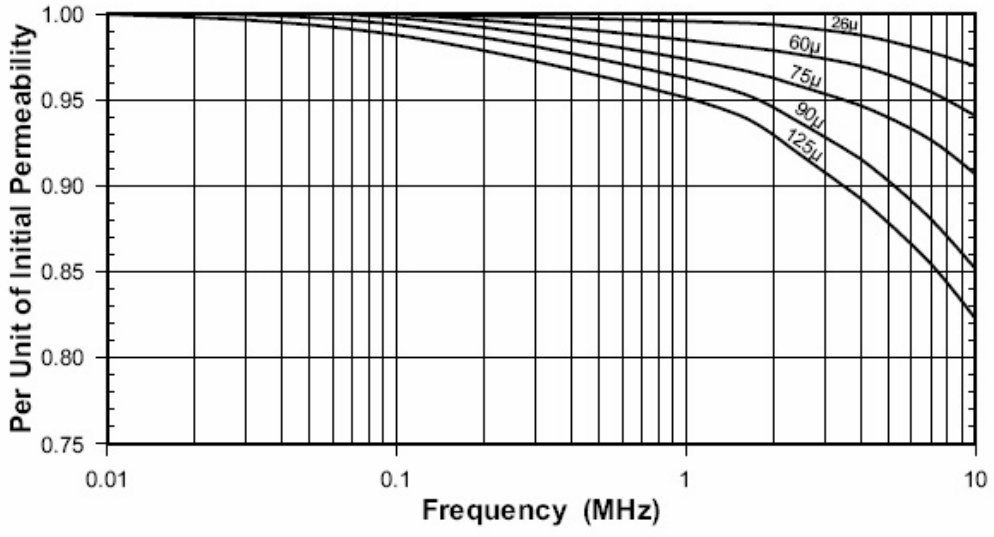
Permeability versus Temperature Curves, Kool Mμ



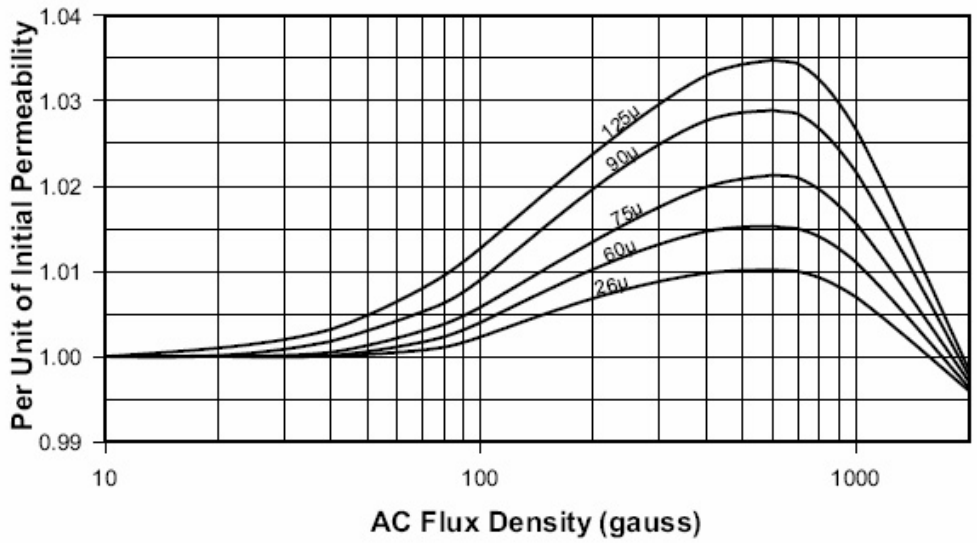
Permeability versus DC Bias Curves, Kool Mμ®



Permeability versus Frequency Curves, Kool Mμ®



Permeability versus AC Flux Curves, Kool Mμ®



Normal Magnetization Curves, Kool Mμ®