Magnetic Powder Cores

ARNOLD®
THE MAGNETIC PRODUCTS GROUP OF SPS TECHNOLOGIES

ARNOLD MAGNETICS LTD
Powder Core Division

Introduction

Arnold manufactures the world's largest selection of magnetic materials. We are magnetic specialists of both hard and soft magnetic materials. This product information guide is focused on our soft magnetic powder core products; Molybdenum Permalloy Powder, SUPER-MSS™, and HI-FLUX™.

Today, electrical design engineers need to identify and compare product capabilities, performance and effectiveness for high frequency power conversion inductors, noise filters and various tuned circuit applications to meet their design objectives. To assist in this selection process, we have included the following information:

- How to order parts
- Design information
- Formulas and definitions for design calculations
- Comparative magnetic curves for performance evaluation
- Electrical and physical specifications with part numbers
- "Q" curves for Molybdenum Permalloy Powder cores

In 1995 Arnold initiated a complete upgrade of our powder core manufacturing facility providing the most advanced equipment to process, control and monitor our products. The upgrade for Molybdenum Permalloy Powder (MPP) and HI-FLUX was completed in 1996. In early 1997 the Sendust (SUPER-MSS) upgrade was completed.

To further our commitment to Magnet Materials advancement, Arnold opened the Magnetics Technology Center (MTC) in 1996. This "state-of-the-art" magnetics development laboratory is used for new product and improved process development by Arnold and their customers.

Arnold's commitment to continuous improvement and customer satisfaction is best reflected in our commitment to excellence:

Our Commitment to Excellence

Arnold is committed to providing quality products and services that conform to our customers' requirements.

We will have an environment which encourages teamwork and in which each employee learns, understands, and practices quality conformance as an integral part of his or her job function. All departments will establish goals consistent with our commitment to continuous improvement.

We will judge our performance on how well we satisfy our customers' needs and be guided by the belief that our customers will ultimately determine how successful we will be.

We appreciate your selection of our products.

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Core Part Number Construction

Part numbers for Arnold cores are constructed as shown below. For reference, MPP core part number A-206068-2 used in the example can be found on page 52. Note that the Permeability Rating is included in the Electrical Specifications Table. Likewise, Hi-Flux core part number HF-184125-2 can be found on page 74. Its Inductance Rating is included in the Electrical Specifications Table.

MPP Material

A	–	206	068	–	2	796	–	+2
Material		Catalog Number	Inductance		Finish	Lot Code		Grade

IMPORTANT: Lot Code and Grade are assigned by the factory. Standard MPP grading covers the value ranges -8 to +8.

HI-FLUX or SUPER-MSS Material

HF MS	–	184	125	–	2	796
Material		Size Designation	Permeability		Finish	Lot Code

Marking

Cores with 0.655 inch and larger nominal outside diameters are individually marked with the part number, lot code and, when specified for Molybdenum Permalloy Powder (MPP) cores, the grade. Small (0.500 inch nominal outside diameter and smaller) MPP core permeability is identified, when specified, by use of a color code stripe as shown in the table below. Otherwise, marking is on the package only.

Color Stripe Code for Small MPP Cores (Used Only When Specified at Time of Order)

Permeability	Color Code
14	White
26	Black
60	Blue
125	None
147	Yellow
160	Brown
173	Orange
205	Red
250	Green
300	Violet
350	Gray

Inductance Factor Tolerance

Arnold Molybdenum Permalloy, HI-FLUX and SUPER-MSS cores are produced to a specific inductance factor based on a 1000-turn winding. These inductance tolerances, usually + or - 8%, are shown in the Electrical Specifications Table for each core size.

Inductance Factor Grading

Arnold will supply Molybdenum Permalloy Powder cores graded into 1% or 2% inductance factor groups if specified at time of order. The deviation from nominal inductance factor will be stamped on the core for 1% grading or color dot coded on the core for 2% grading according to the table shown here:

% Deviation from nominal Inductance*	% Deviation from nominal turns	Grade Stamped on core 1% Grading	Color Dot Code 2% Grading
+8 to +7	-4 to -3.5	+8	Gray
+7 to +6	-3.5 to -3	+7	Gray
+6 to +5	-3 to -2.5	+6	Violet
+5 to +4	-2.5 to-2	+5	Violet
+4 to +3	-2 to -1.5	+4	Blue
+3 to +2	-1.5 to -1	+3	Blue
+2 to +1	-1 to -0.5	+2	Green
+1 to 0	-.5 to 0	+1	Green
0 to -1	0 to +.5	-1	Yellow
-1 to -2	+.5 to +1	-2	Yellow
-2 to -3	+1 to +1.5	-3	Orange
-3 to -4	+1.5 to +2	-4	Orange
-4 to -5	+2 to +2.5	-5	Red
-5 to -6	+2.5 to +3	-6	Red
-6 to -7	+3 to +3.5	-7	Brown
-7 to -8	+3.5 to +4	-8	Brown

** Cores ordered in 1% inductance groupings (1/2% in turns) will have the numerical value marked on the core as shown above. Packages will be marked when the core is too small to be properly marked.*

Core Finishes

Refer to the table below for the finish descriptions. Finishes are tested for dielectric strength with conductive foam pads pressed against the two flat surfaces of the core. A 60 Hz, 1250 V rms test voltage is applied between the pads for one second.

Molybdenum Permalloy, HI-FLUX and SUPER-MSS Powder Core Finishes

Nominal Outside Diameter	Finish	Appearance	Minimum Voltage Breakdown Requirement	Finish Number
0.140 to 0.183	Parylene C	Clear	None	8
0.250 to 0.380	Parylene C	Clear	500 V rms, 60 Hz	8
0.400 to 5.218	Epoxy	Blue	500 V rms, 60 Hz	2

Molybdenum Permalloy, Hi-Flux and Super-MSS Powder cores are wound with magnet wire to make transformers or inductors. Maximum allowable energy dissipation for a given value of energy storage (inductance and current) or transformation (voltage and current), guide the selection of core material and size. Energy dissipation is usually specified in terms of maximum temperature rise, minimum efficiency or minimum Q value. (Q is 2π times the ratio of peak energy stored to energy dissipated during one period of current flow.) Consider the following when choosing a core material:

1. Molybdenum Permalloy Powder (MPP) cores provide the maximum Q and lowest core loss. MPP is the most stable core with respect to temperature and AC Flux. It has the widest range of permeabilities and is considered the premium material for direct current output inductors of Switched Mode Power Supplies. It is useful into the Megahertz range of frequencies. MPP cores are an excellent choice for precision audio frequency tuned circuits, High Q Filters, Loading Coils, RFI Filters and many other precision inductor applications.
2. Hi-Flux cores are a 50% Nickel 50% Iron distributed gapped powder core. HF has up to 15,000 Gauss saturation flux density and core losses significantly lower than iron powder cores. These cores are ideal for Switching Regulator Inductors, In Line Noise Filters, Pulse and Fly-Back Transformer applications. When used in applications with high dc current, HF cores can provide a reduction in inductor size as well as total cost.
3. Super-MSS is an improved Sendust material, originally developed by Arnold Engineering. It is designed to replace iron powder by offering much lower losses, with energy storage capability higher than MPP. Super-MSS cores are an excellent choice for energy storage and filter inductor applications in Switch Mode Power Supplies. The low loss properties of Super-MSS cores minimizes the temperature rise at power frequencies to well below that of a similar sized iron powder core. The DC Bias characteristics of Super-MSS are also excellent compared to iron powder of similar permeabilities and size.

For reference, some basic electromagnetic terms and relationships used to design with magnetic powder cores are defined, followed by graphs showing typical values for material characteristics essential to transformer and inductor design. The final section of this catalogue contains data for specific core sizes and Q curves for Molybdenum Permalloy Powder (MPP) cores.

Units of Measure

For historical reasons, the Centimeter-Gram-Second (CGS) system is used in this catalog. Conversion between the System International (SI) and CGS System is simplified using the following table.

Conversion Table

Quantity	To Convert		Multiply By
	From	To	
Magnetic Flux Density B	Gausses (CGS)	Teslas (SI)	10^{-4}
Magnetizing Force H	Oersteds (CGS)	Amperes per Meter (SI)	$1000/(4\pi)$

Also, free space permeability in the CGS System has a magnitude of 1 and no dimensions. Free space permeability is $4\pi \times 10^{-7}$ henries per meter in the System International.

Inductance

Inductance (L) is calculated using the inductance factor (A_L) listed for each core.

$$L = A_L N^2 \text{ nanohenries}$$

A_L = inductance factor in mH for 1000 turns.
N = number of turns.

Therefore,

$$N = \sqrt{\frac{L}{A_L}} \text{ turns}$$

where L is in nanohenries.

Inductance can also be determined from the relative permeability (referred to in this catalog as μ, "permeability" and "perm") and the effective core parameters shown in Figure 1.

$$L = \frac{4\pi\mu A_e}{l_e} N^2 \text{ nanohenries}$$

A_e = effective core area in square centimeters.
l_e = effective magnetic path length in centimeters.
μ = relative permeability (no dimensions).

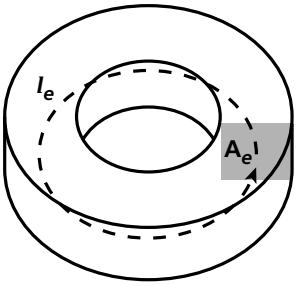


Figure 1.
Effective Core Parameters

For toroidal powder cores, the effective area is the same as the cross sectional area. By definition and Ampere's Law, the effective magnetic path length is the ratio of winding ampere-turns (NI) to the average magnetizing force across the core area from inside diameter to outside diameter. Using Ampere's Law and averaging the magnetizing force gives the formula for effective path length.

$$l_e = \frac{\pi\,(O.D. - I.D.)}{ln\left(\frac{O.D.}{I.D.}\right)}$$

O.D. = outside diameter of core.
I.D. = inside diameter of core.

Inductance factors are measured using a single layer winding with closely spaced turns. Flux densities and test frequencies are kept as low as practical, usually less than 40 gausses and 10 kHz or below. The "Normal Permeability versus Flux Density" and "Typical Permeability versus Frequency" graphs can be used as guides to define low-level test conditions for the various permeabilities and materials.

Permeability

The inductance factors listed for each core size are based on incremental relative permeabilities. With no direct current bias and at low flux densities, the normal and incremental permeabilities are the same. The incremental permeability decreases with direct current bias as indicated by Figure 2 and shown in the "Incremental Permeability versus DC Bias" graphs.

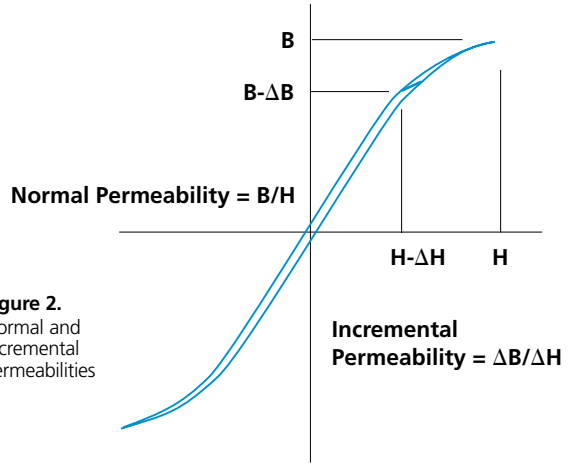


Figure 2.
Normal and Incremental Permeabilities

The "Normal Permeability versus Flux Density" graph shows normal permeability as a function of peak flux density, B.

Most design procedures involve choosing a peak operating magnetic flux density to help determine the core size. Peak operating flux density is limited by the core material saturation flux density or by the core material loss. After choosing the material and operating flux density and determining the core size, Faraday's Law (discussed below) is then used to calculate the number of turns, N. Finally, a permeability is selected to provide the required inductance.

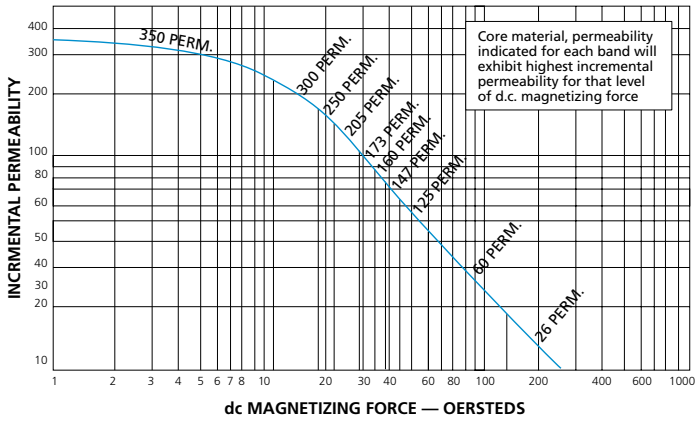
$$\mu = \frac{L\,l_e}{4\,\pi\,A_e\,N^2}$$

L = inductance in nanohenries.
l_e = effective magnetic path length in centimeters.
A_e = effective core area in square centimeters.

A wide range of permeabilities are offered to satisfy various inductance requirements.

Ampere's Law (also discussed below) gives the peak value of magnetizing force, H, based on the number of turns, peak magnetizing current (the total current of an inductor and "no-load" current in a transformer primary) and core magnetic path length. As can be seen in Figure 2, selecting the permeability sets the peak magnetic flux density so it matches the value chosen at the beginning of the design procedure. Also, for Molybdenum Permalloy Powder (MPP), the following selection chart gives the permeability that yields maximum inductance for a given magnetizing force.

Permeability Selection Chart



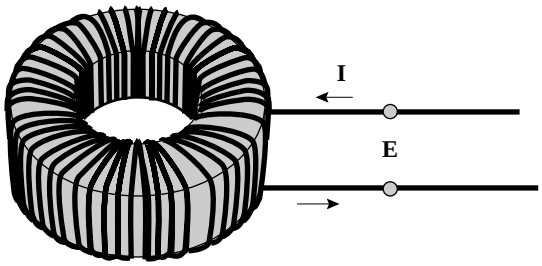
The "Normal Magnetization Curves" can be used with the "Typical Incremental Permeability versus DC Bias Curves" to estimate the direct current magnetic flux density for a chosen percentage of incremental permeability. For example, 125μ Molybdenum Permalloy Powder has 50% incremental permeability at just under 50 oersteds. The corresponding flux density is about 4500 gausses (0.45 tesla) according to the normal magnetization curve. Surveying the other permeabilities suggests that this could be used as an approximation of the DC flux density where Molybdenum Permalloy Powder has 50% of its original incremental permeability.

Magnetic Flux Density and Faraday's Law

The level of flux density (B) affects core loss and permeability. Unless otherwise noted, the data in this catalog is for sinusoidal waveforms and maximum (peak) magnetic flux densities. Using Faraday's Law:

$$B_{max} = \frac{E_{rms}\,10^8}{NA_e\sqrt{2}\pi f}$$

B_{max} = maximum (peak) flux density in gausses.
E_{rms} = sinusoidal RMS voltage across winding (V rms).
N = number of turns.
A_e = effective core area in square centimeters.
f = frequency of sinusoidal voltage in hertz.



The effective area is considered the total area of the core cross section as shown in Figure 1. The area occupied by magnetic alloy is less than this area and decreases with decreasing permeability. Catalog data for the different permeabilities include effects from the smaller magnetic alloy areas.

Also, B_{max} is an average maximum flux density value over the core cross section. The flux density is greater toward the inside diameter and smaller toward the outside diameter as shown by Ampere's Law and described in the following.

Magnetizing Force and Ampere's Law

Ampere's Law relates magnetizing force (H) to current, number of turns and magnetic path length.

$$H = \frac{0.4\,\pi\,NI}{l}$$

H = magnetizing force in oersteds.
N = number of turns.
I = current in amperes.
l = magnetic path length in centimeters.

According to Ampere's Law, the magnetizing force is stronger toward the inside diameter (where l is shorter). The effective magnetic path length provides an average value of magnetizing force across the core cross section.

$$H_{average} = \frac{0.4\,\pi\,NI}{l_e}$$

$H_{average}$ = the average magnetizing force across the core from inside to outside diameters in oersteds.
l_e = effective magnetic path length as listed in the individual core specifications in centimeters. (See the section on inductance for the effective path length formula.)
N = number of turns.
I = current in amperes.

Average magnetizing force is used in this catalog unless noted otherwise.

The magnetizing force determines the estimate of magnetic flux density using the normal magnetization curves. See the above section on permeability. The relative permeability is, by definition:

$$\mu = \frac{B}{H}$$

μ = relative permeability.
B = magnetic flux density in gausses.
H = magnetizing force in oersteds.

The d.c. winding resistance for an average winding can be calculated by:

$$R_{dc} = \frac{l_w N r}{12000}$$

l_w = mean length of turn (in.)
N = number of turns
r = resistance of wire in ohms per 1000 feet

(see wire table on page 8.)

In addition to the normal d.c. resistance of a winding, there exists an incremental change in the winding resistance due to the skin effects of a.c. current.* This can be approximated by:

$$\frac{R_{ac}}{R_{dc}} = .96 + .0035\ x^2 - .000038\ x^3$$

where $x = d\sqrt{\frac{f}{(1 + .00393\ (°C - 20))}}$

d = wire diameter (inches)
f = frequency (HZ)
°C = operating temperature

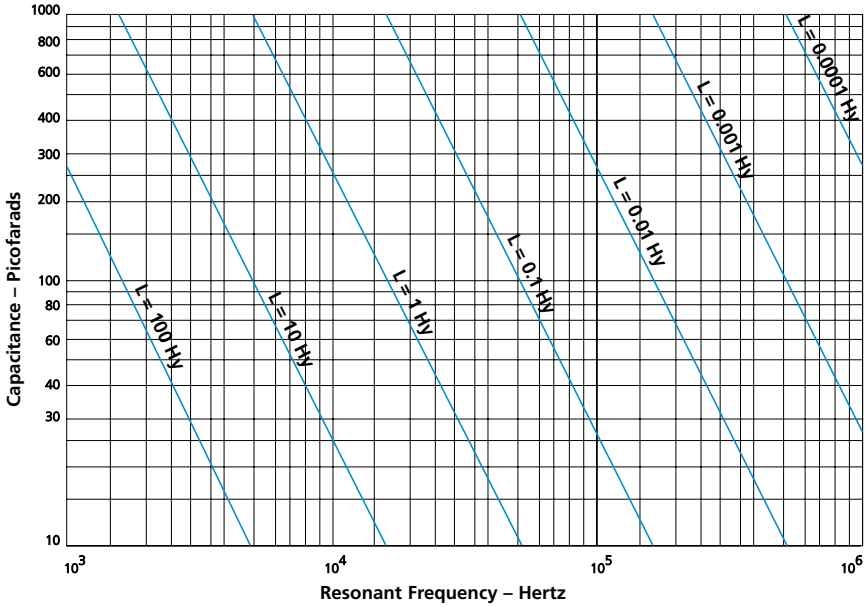
Minimizing distributed capacitance is an important core winding consideration. A toroidal winding has an effective capacitance which may be considered to be in parallel with the inductance. This is the result of the summation of capacitances from turn to turn, layer to layer, and from parts of the winding to the core. (The effect of this capacitance on the Q and the inductance of the component is discussed in the section "Notes on Molypermalloy Q Curves".) The graph below is useful for estimating self-resonant frequency. By selecting a winding technique which minimizes the voltage between turns, the distributed capacitance may be reduced. Several winding techniques are available. Dividing the winding into a number of sections, such as 2, 4, or more, or the use of a bankwound coil is effective in reducing the capacitance. In any case, the winding and inter-sector connecting technique should carefully avoid placing the first and last turns adjacent to each other - as they have the highest turn to turn potential, and thus contribute the most to the effective capacitance. Both the moisture content in the dielectric of the winding and the dielectric constant of potting and encapsulating materials increase the effective distributed capacitance.

Precision wound cores - stable with time and having reproducible temperature characteristics - must have winding strains relieved by temperature cycling. The wound cores must be cycled from room temperature to 125° C., repeating the cycle as many times as necessary to achieve reproducible results. At least one cycle should include a temperature lower than the wound core will be exposed to under operating conditions. This cycling will not only relieve strains, but also remove moisture that is present. Final adjustment of inductance value should be made after the temperature cycling process has been completed.

The wound cores should be kept dry until they are dipped, potted, or hermetically sealed. Potting and encapsulating compounds should be carefully selected as some may shrink with age or temperature change, and thus affect stability. Cushioning material on the wound cores can minimize this effect.

**Reference Data for Radio Engineers. ITT Corp. New York, NY, 4th Edition, 1956, pp. 128-132*

Inductance – Capacitance Resonance Chart



Heavy Film Magnet Wire Table (Reference NEMA MW1000)

AWG Size	Maximum Outside Diameter Over Insulation in Inches	Nominal Resistance, Ω/1000 ft. at 20°C (68°F)	Nominal Bare Wire Diameter in Mils[1]	Nominal Bare Wire Cross Sectional Area in Circular Mils[2]
10	0.1061	0.9988	101.9	10380
11	0.0948	1.26	90.7	8230
12	0.0847	1.59	80.8	6530
13	0.0757	2.00	72.0	5180
14	0.0682	2.52	64.1	4110
15	0.0609	3.18	57.1	3260
16	0.0545	4.02	50.8	2580
17	0.0488	5.05	45.3	2050
18	0.0437	6.39	40.3	1620
19	0.0391	8.05	35.9	1290
20	0.0351	10.1	32.0	1020
21	0.0314	12.8	28.5	812
22	0.0281	16.2	25.3	640
23	0.0253	20.3	22.6	511
24	0.0227	25.7	20.1	404
25	0.0203	32.4	17.9	320
26	0.0182	41.0	15.9	253
27	0.0164	51.4	14.2	202
28	0.0147	65.3	12.6	159
29	0.0133	81.2	11.3	128
30	0.0119	104	10.0	100
31	0.0108	131	8.9	79.2
32	0.0098	162	8.0	64.0
33	0.0088	206	7.1	50.4
34	0.0078	261	6.3	39.7
35	0.0070	331	5.6	31.4
36	0.0063	415	5.0	25.0
37	0.0057	512	4.5	20.2
38	0.0051	648	4.0	16.0
39	0.0045	847	3.5	12.2
40	0.0040	1080	3.1	9.61
41	0.0036	1320	2.8	7.84
42	0.0032	1660	2.5	6.25
43	0.0029	2140	2.2	4.84
44	0.0027	2590	2.0	4.00

[1]A mil is 0.001 inch.
[2]A circular mil is the area of a circle which is 1 mil in diameter.

Notes on Molybdenum Permalloy Q Curves

Note: The following information applies to frequency tuned circuit applications.

The Q formula calculates the ratio of reactance to effective resistance for an inductor and thus indicates its quality. For electrical wave filters, an increase in Q provides sharper cut-off, higher attenuation ratios, and better defined resonance. Q is affected by the distributed capacitance of an inductor's winding.

Neglecting the effects of self-resonance caused by the distributed capacitance (see paragraph 4c, below) Q can be calculated, when designing inductors, by this formula:**

$$Q = \frac{\omega L}{R_{dc} + R_{ac} + R_{cd}}$$

Q = quality factor
L = inductance (henries)
ω = 2 π X frequency (frequency in hertz)
R_{dc} = dc winding resistance (ohms)
R_{ac} = resistance due to core losses (ohms)
R_{cd} = resistance due to dielectric losses in winding (ohms)

The Q curves published in this manual are not to be construed as guaranteed minimum values. Instead they represent what might be attainable under ideal conditions. They were developed theoretically and have been checked with various core sizes and inductances to assure reasonable correspondence to the real world of wire, insulation and winding. The user's ability to get equivalent results depends in part upon his ability to duplicate the assumed conditions.
These are:

1. A "full-wound core" is defined to be one in which the minimum winding ID or residual hole left after winding is one-half of the inside diameter of the core.

2. This leaves a useful winding area which is three-quarters of the available window area. It was assumed that 70% of this space would be filled with copper wire including heavy synthetic film insulation.

3. The dc resistance of a full-wound core varies as the square of the number of turns in the same manner that the resultant inductance varies as the square of the turns. Therefore, each core size has a table of calculated ohms per millihenry based on the "full-wound core" definition above. This resistance determines the positive slope of the low frequency portion of the Q curve and is assumed to be independent of inductance.

4. Three factors affect the high frequency performance of an inductor.

   a. The most fundamental is the loss of the core material which is mostly responsible for the negative slope of the low inductance curves at frequencies above the frequency of maximum Q. This is calculated from Legg's equation (see next section).

This analysis follows Herman Blinchikoff, "Toroidal Inductor Design," ***Electro-Technology,* November, 1964.

   b. The second factor is caused by dielectric loss. Dielectric loss resistance is significant at higher frequencies and can be calculated from the equation found in Terman's Handbook.***

$$R_{cd} = d\omega^3 L^2 C_d$$

d =power factor of distributed capacitance
Values of d

125μ & over	.0118
60μ	.0417
26μ	.0750
14μ	.0900

ω = 2π X frequency in hertz
L = Inductance in henries
C_d = distributed capacitance in farads

   c. The most dramatic factor is the effect of self resonance of the distributed capacitance and the inductance. For small inductances, such as the 0.001 henry or the 0.01 henry curve for each core, the self-resonant frequency f_o is well above the normal useful frequency range of the component. Therefore, these curves tend to indicate the component performance with a negligible effect of self resonance. The distributed capacitance and the self inductance determine a self-resonant frequency according to:

$$f_o = \frac{1}{2\pi\sqrt{LC_d}} \text{ hertz.}$$

At some lower frequency, f, the value Q_f can be calculated from:

$$Q_f = Q\left[1 - \left(\frac{f}{f_o}\right)^2\right]$$

where Q is calculated from determined values of loss resistances as indicated above, and Q_f is the apparent Q, taking into account the effect of the distributed capacitance. It should be noted that when f is 20% of f_o, Q_f is 96% of its original value. However, when f is 70% of f_o, Q_f drops to 51% of its original value. The apparent value of the inductance, L_a, is also affected as follows:

$$L_a = \frac{L}{1 - \left(\frac{f}{f_o}\right)^2}$$

5. Because the distributed capacitance is determined by the winding method, the user can obtain different results from those plotted, depending on this value of the capacitance. Each Q curve is marked with the capacitance value used.

***Radio Engineer's Handbook,** F.E. Terman, McGraw-Hill, Inc., New York (1943), p. 84.

Molybdenum Permalloy Core Loss at Low Magnetic Flux Densities

LEGG'S EQUATION[1]...total core loss at low flux densities is the sum of three component losses - hysteresis, residual and eddy current. Values of typical loss coefficients are found in the following table for each permeability. The core loss in terms of ohms per henry per unit of permeability is calcuated from Legg's Equation:

$$\frac{R_{ac}}{\mu L} = aB_{max}f + cf + ef^2$$

Watts of loss from Legg's Equation may be determined by:

$$\text{Watts of Loss} = 3.98\ B^2_{max}\ Al\left[\frac{R_{ac}}{\mu L}\right]10^{-9}$$

or

$$\text{Watts of Loss} = \frac{3.98\ B^2_{max}\ Al}{\mu 10^6}\left[\text{ohms/mhy}^{**}\right]$$

** from core loss curves

R_{ac} = effective resistance due to core losses (ohms)
μ = permeability of core
L = inductance (henries)
a = hysteresis loss coefficient
B_{max} = maximum flux density (gausses)
c = residual loss coefficient
f = frequency (hertz)
e = eddy loss coefficient
A = core area (cm^2)
l = mean magnetic path (cm)

Molybdenum Permalloy Electrical Specifications and Typical Loss Coefficients

SPECIFICATIONS					TYPICAL VALUES		
Perm. μ ±8%	Maximum Core Loss $\frac{R_{ac}}{\mu L}$ ohms / Henry x μ	Test Flux Density (Gausses)	Test Frequency Hertz	Maximum Permeability Change after Magnetization†	Hysteresis Loss Coefficient a	Residual Loss Coefficient c	Eddy Current Loss Coefficient e
300	0.25	20	1800	±0.5%	1.1×10^{-6}	30.0×10^{-6}	43.0×10^{-9}
250	0.25	20	1800	±0.5%	1.2×10^{-6}	26.0×10^{-6}	37.0×10^{-9}
205	0.25	20	1800	±0.5%	1.3×10^{-6}	25.0×10^{-6}	30.0×10^{-9}
173	0.20	20	1800	±0.5%	1.4×10^{-6}	25.0×10^{-6}	25.0×10^{-9}
160	0.20	20	1800	±0.5%	1.5×10^{-6}	25.0×10^{-6}	22.0×10^{-9}
147	0.20	20	1800	±0.5%	1.6×10^{-6}	25.0×10^{-6}	20.0×10^{-9}
125	0.20	20	1800	±0.5%	1.6×10^{-6}	25.0×10^{-6}	13.0×10^{-9}
60	1.50	10	8000	±0.3%	3.2×10^{-6}	50.0×10^{-6}	10.0×10^{-9}
26	70	4	75000	±0.2%	6.9×10^{-6}	96.0×10^{-6}	7.7×10^{-9}
14	65	4	75000	±0.1%	11.4×10^{-6}	143.0×10^{-6}	7.1×10^{-9}

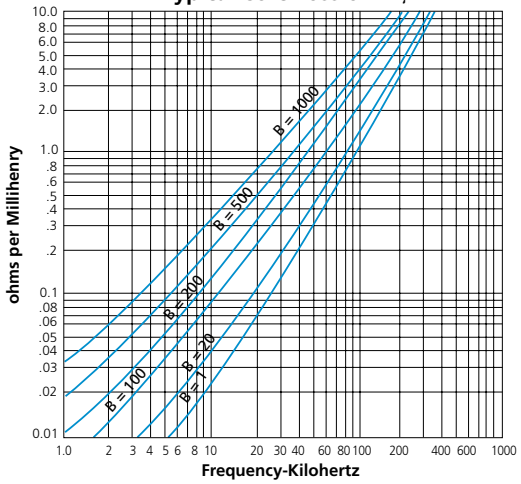
† *Measured three minutes after the application of a dc magnetizing force of 30 oersteds for 60 and higher permeabilities or 60 oersteds for 26 and 14 permeabilities.*

[1]-*Legg, V.E., "Magnetic Measurements at Low Flux Densities Using the A-C Bridge," The Bell System Technical Journal, Vol. 15, January, 1936, pp. 39-63.*

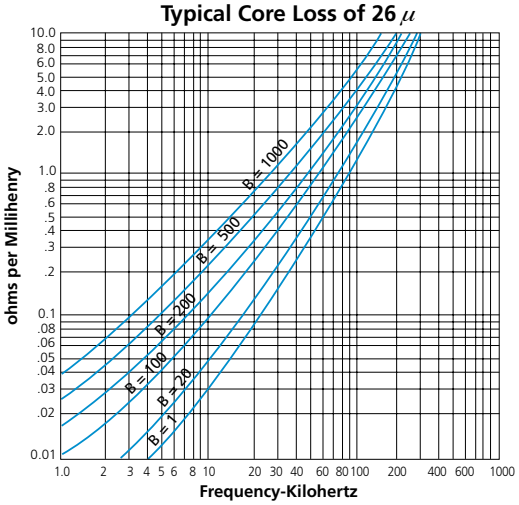
Charts showing the typical core loss resistance in ohms per millihenry for each permeability material are found on pages 11 and 12.

MPP Core Loss (Ohms per Millihenry)

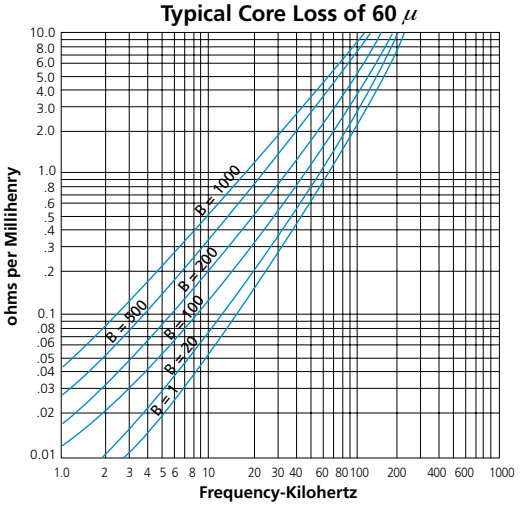
Typical Core Loss of 14 μ



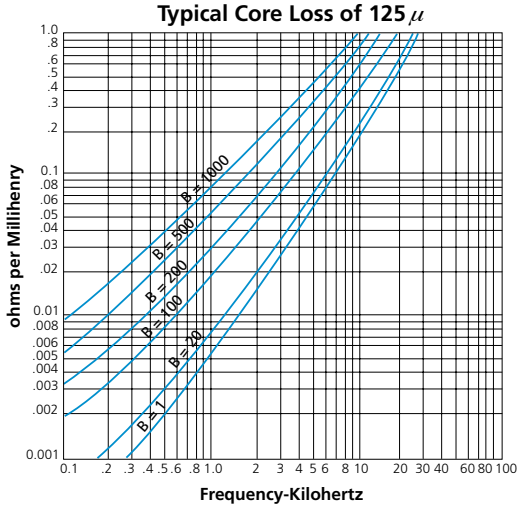
Typical Core Loss of 26 μ



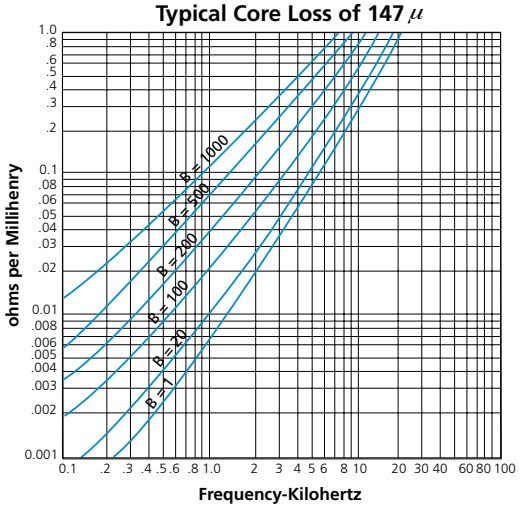
Typical Core Loss of 60 μ



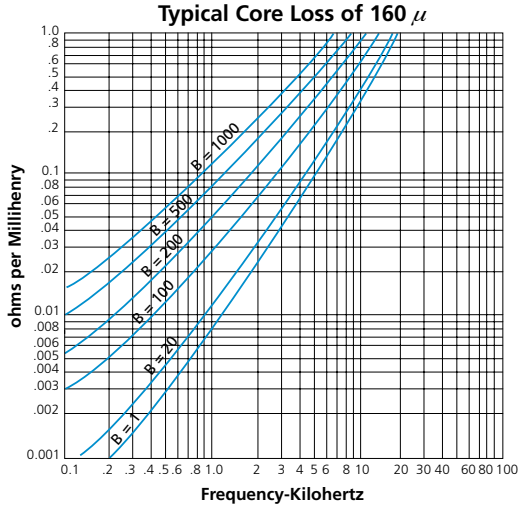
Typical Core Loss of 125 μ



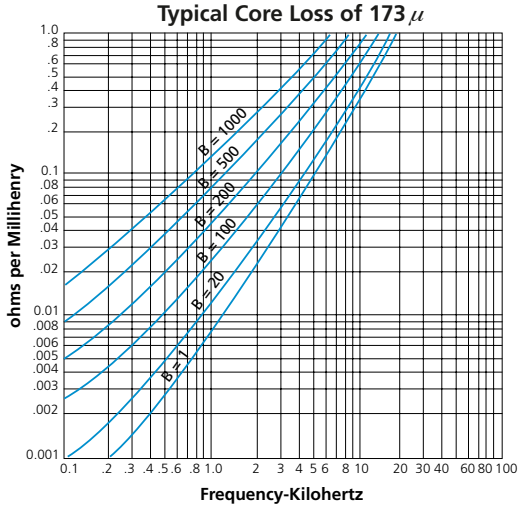
Typical Core Loss of 147 μ



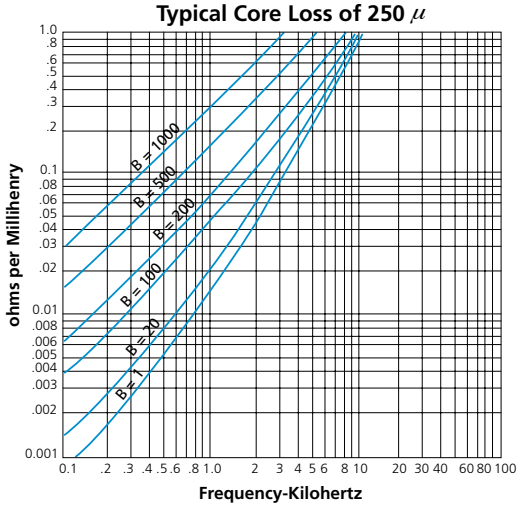
Typical Core Loss of 160 μ



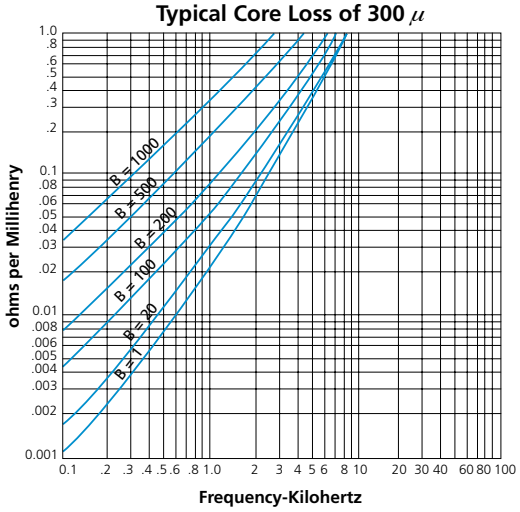
Typical Core Loss of 173 μ



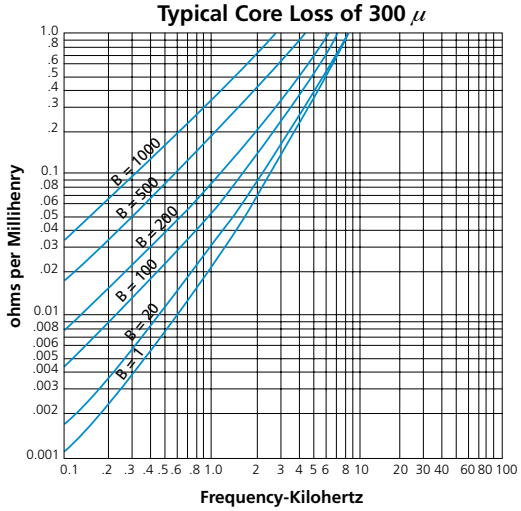
Typical Core Loss of 250 μ

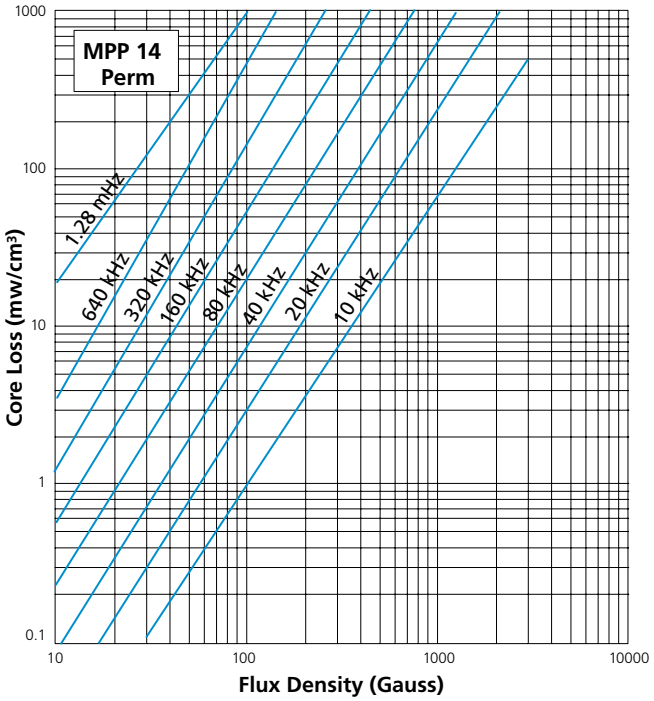


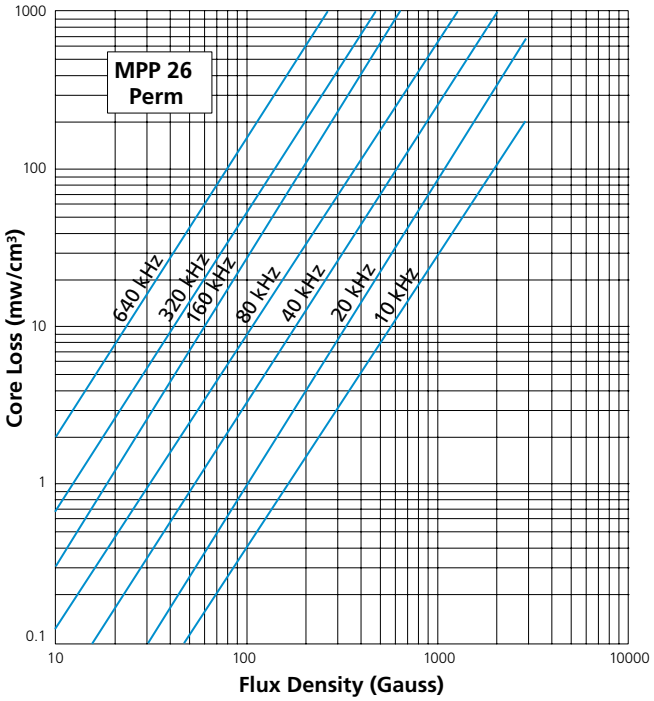
Typical Core Loss of 300 μ

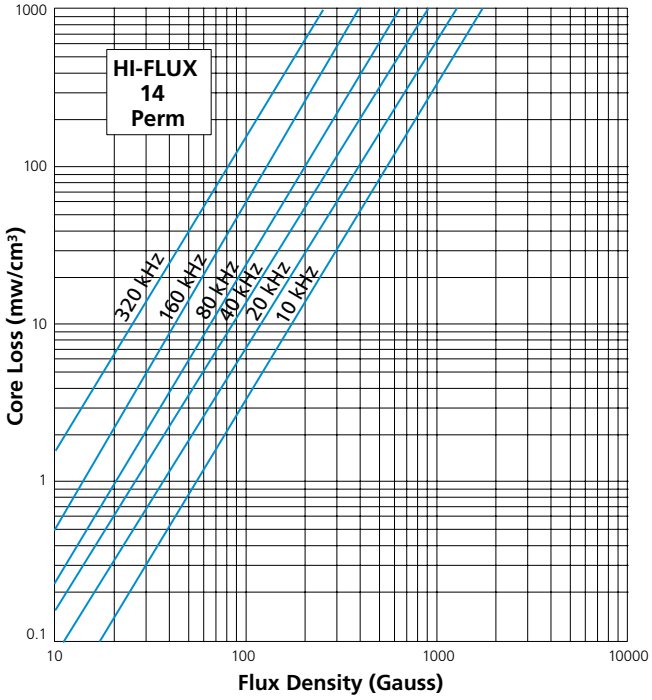


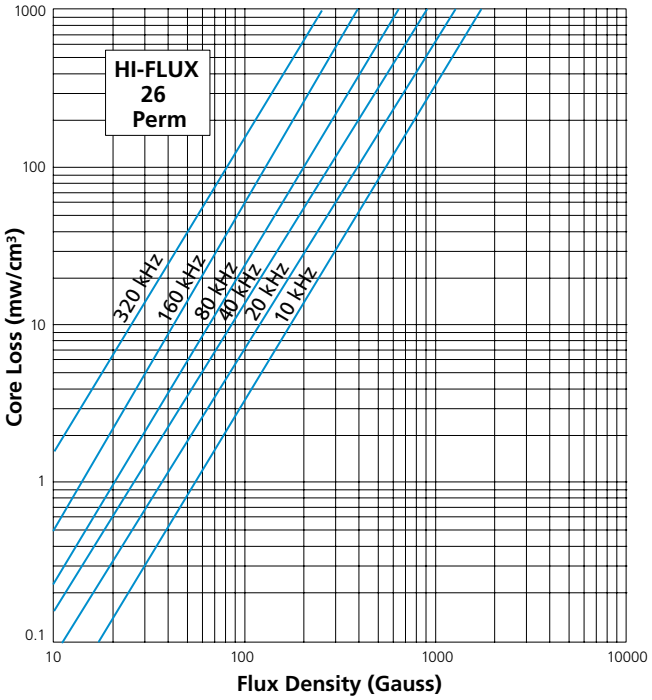
Typical Core Loss of 300 μ



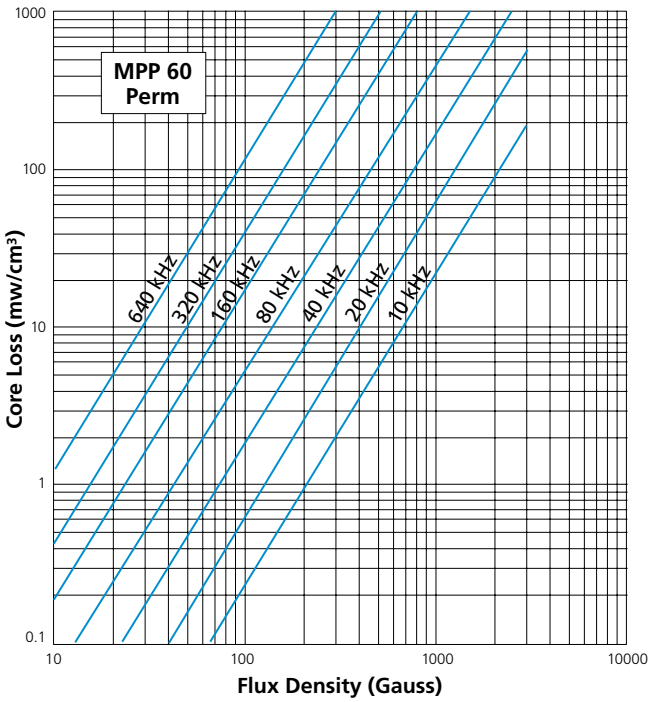

MPP 14
Perm
1000
100
10
1
0.1
Core Loss (mw/cm³)
1.28 mHz
640 kHz
320 kHz
160 kHz
80 kHz
40 kHz
20 kHz
10 kHz
10
100
1000
10000
Flux Density (Gauss)

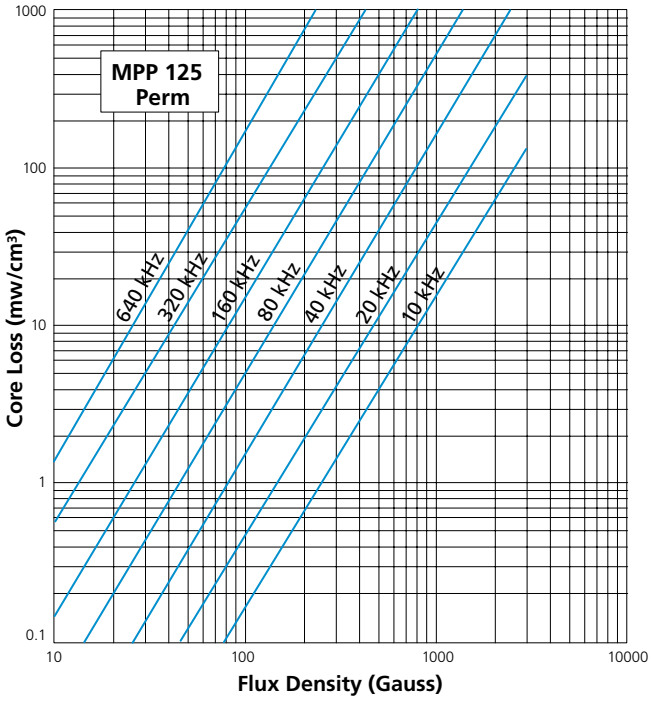

MPP 26
Perm
1000
100
10
1
0.1
Core Loss (mw/cm³)
640 kHz
320 kHz
160 kHz
80 kHz
40 kHz
20 kHz
10 kHz
10
100
1000
10000
Flux Density (Gauss)

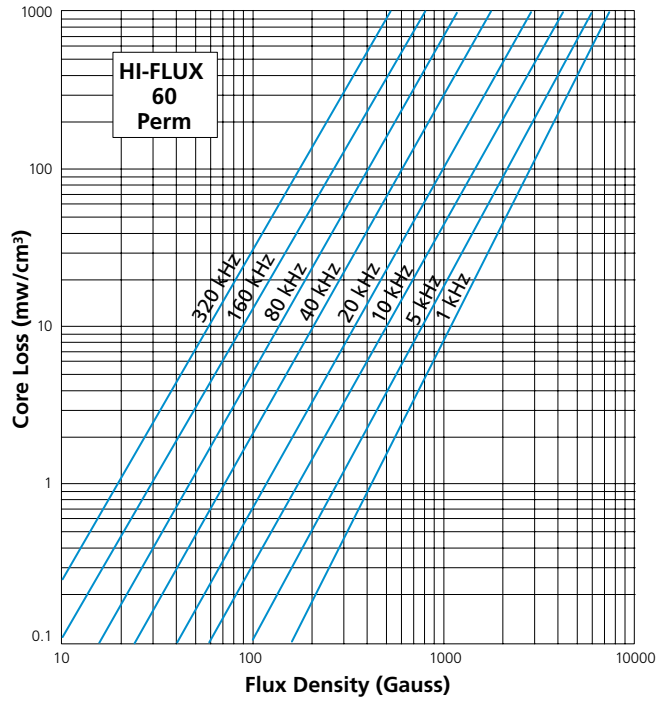

HI-FLUX
14
Perm
1000
100
10
1
0.1
Core Loss (mw/cm³)
320 kHz
160 kHz
80 kHz
40 kHz
20 kHz
10 kHz
10
100
1000
10000
Flux Density (Gauss)

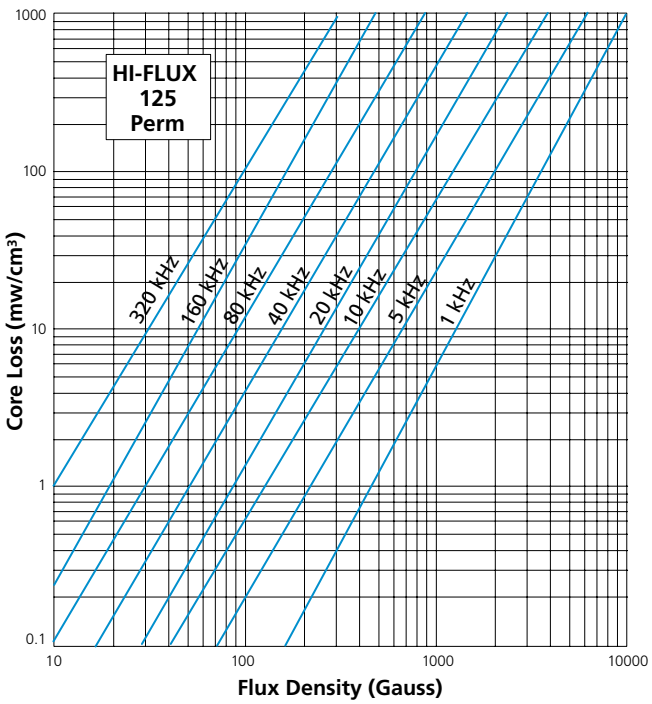

HI-FLUX
26
Perm
1000
100
10
1
0.1
Core Loss (mw/cm³)
320 kHz
160 kHz
80 kHz
40 kHz
20 kHz
10 kHz
10
100
1000
10000
Flux Density (Gauss)

Typical Core Loss Curves

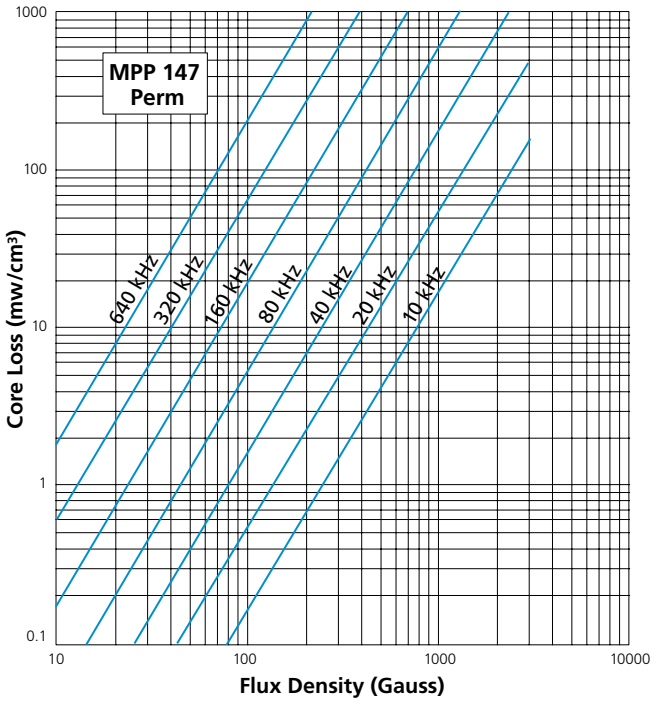


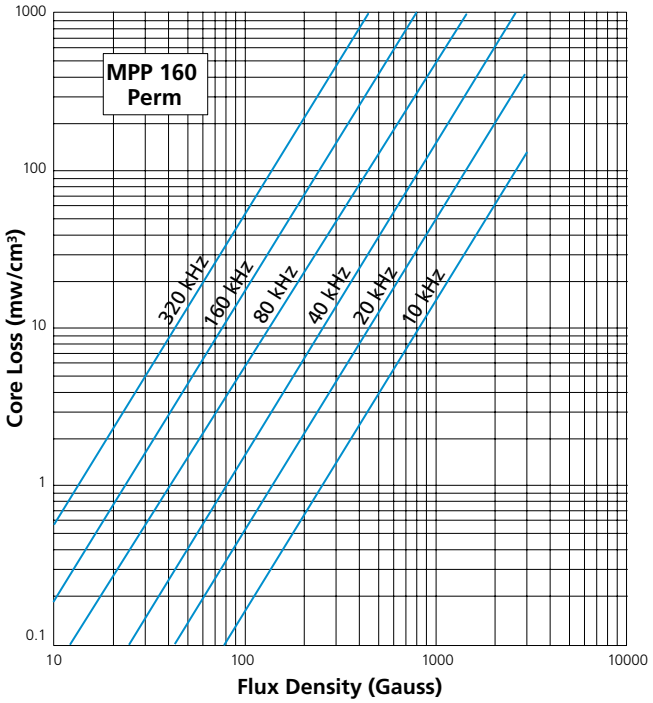


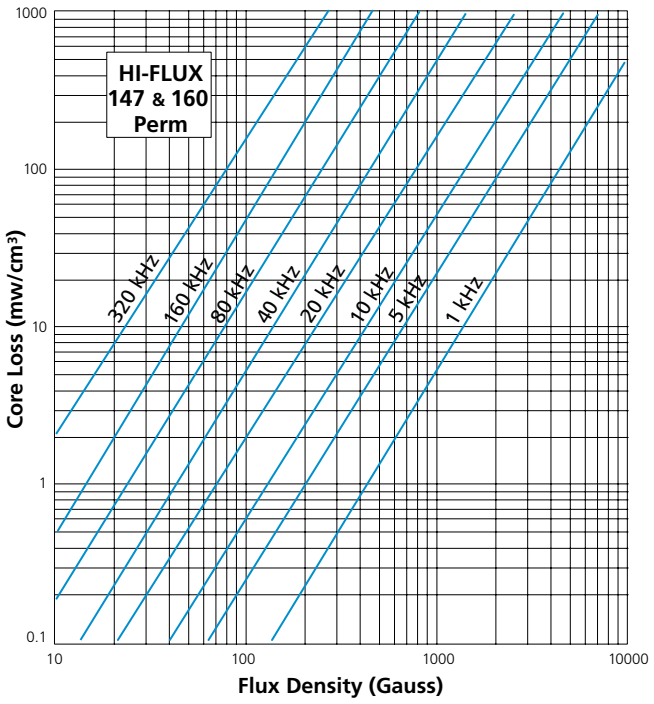


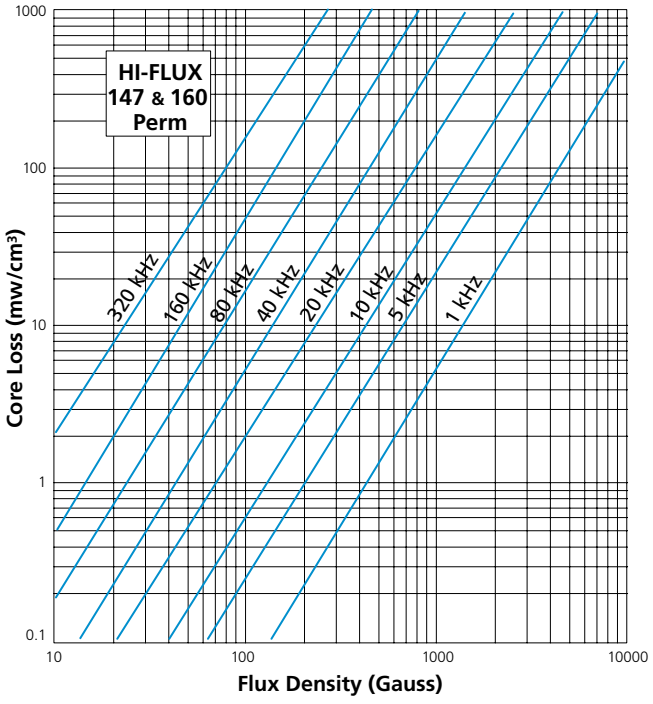


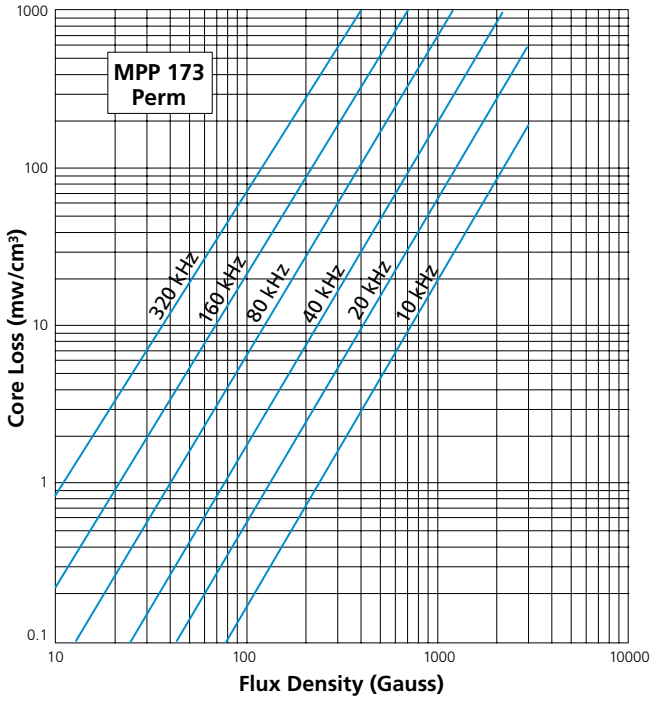
Typical Core Loss Curves

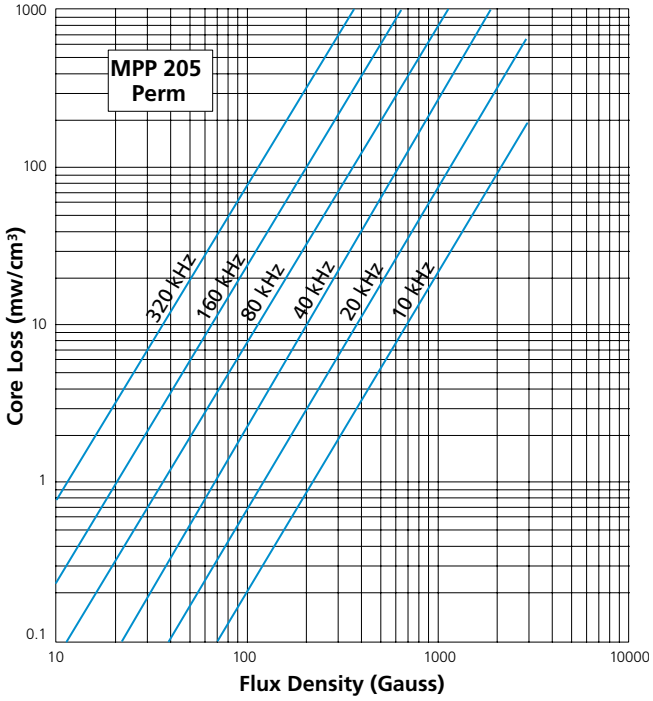




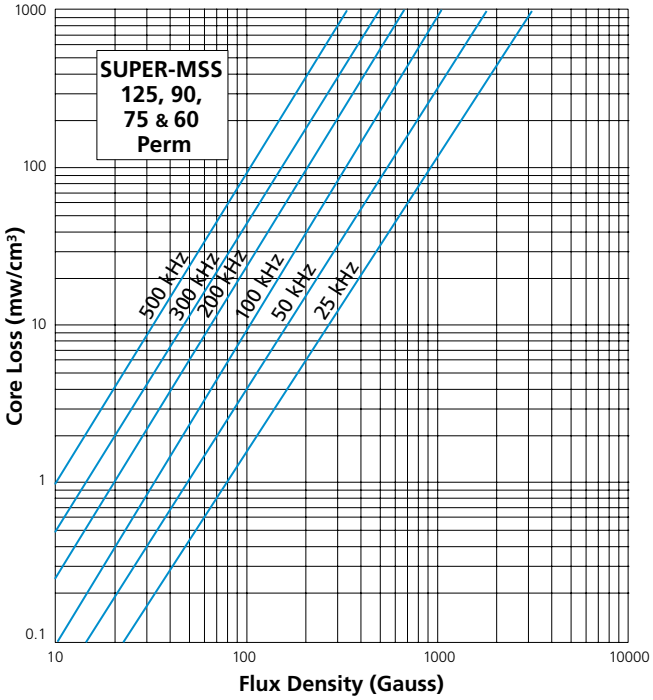


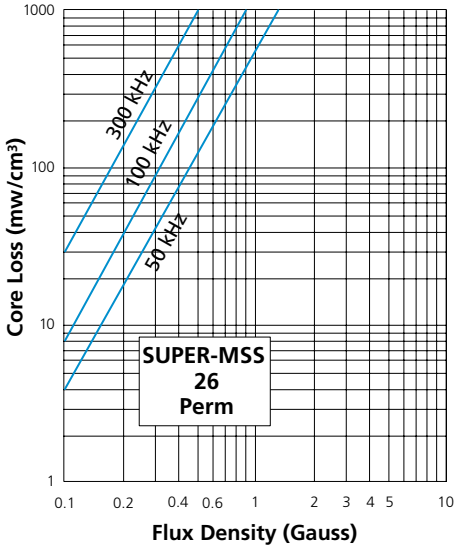




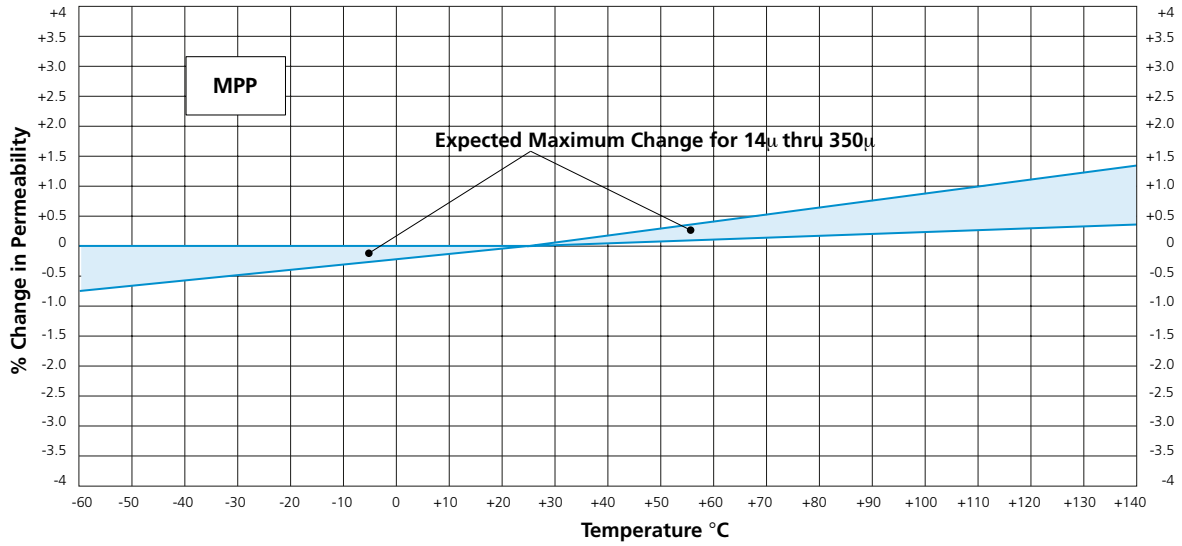


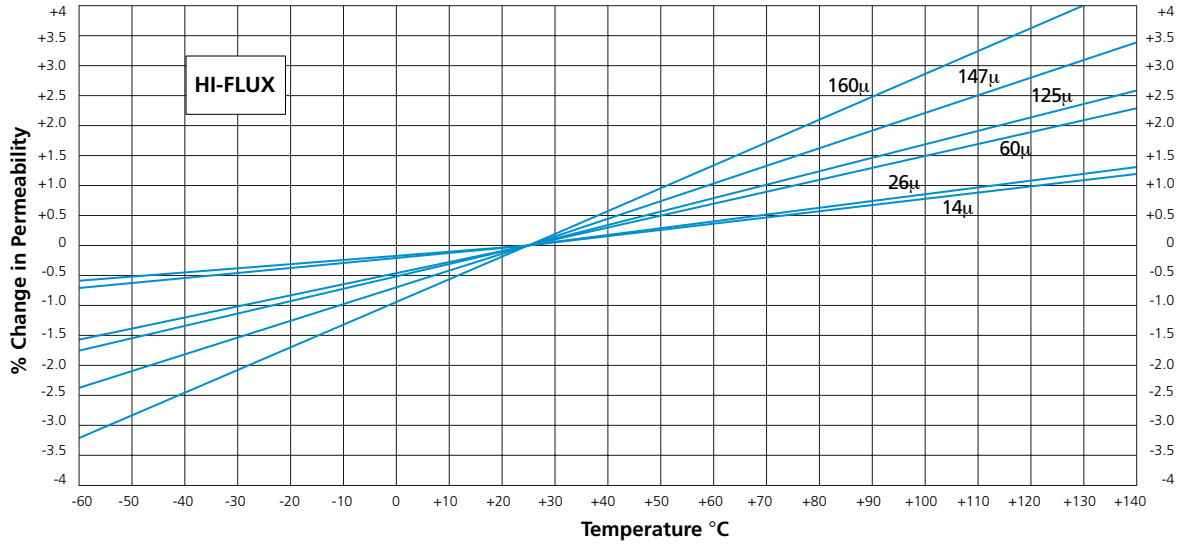
These Permeabilities do not apply to HI-FLUX.



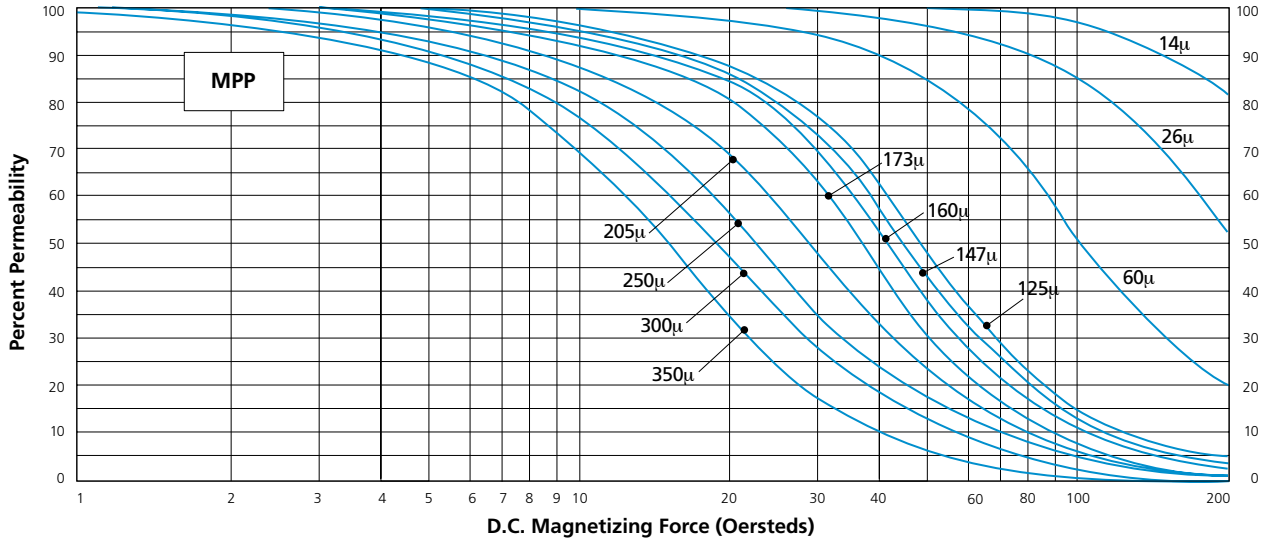


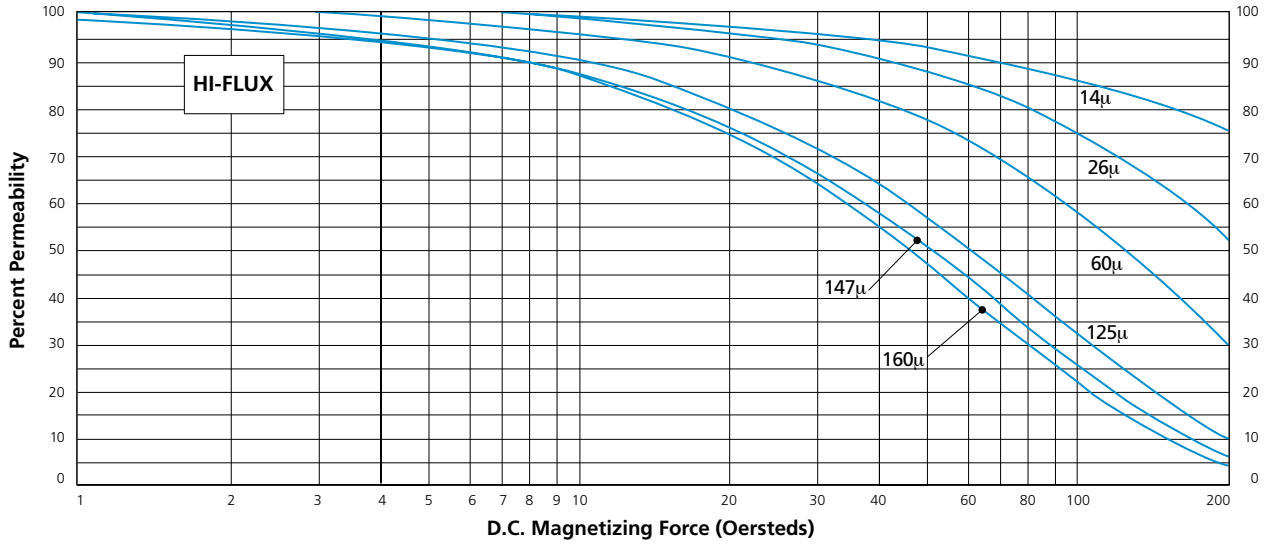
Typical Permeability vs. Temperature

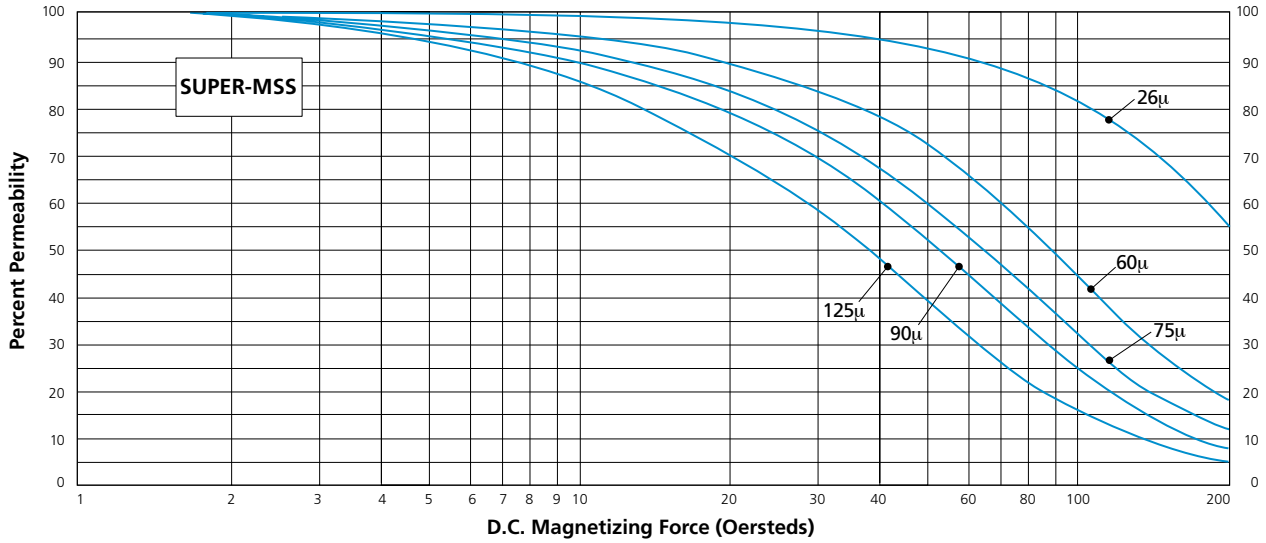


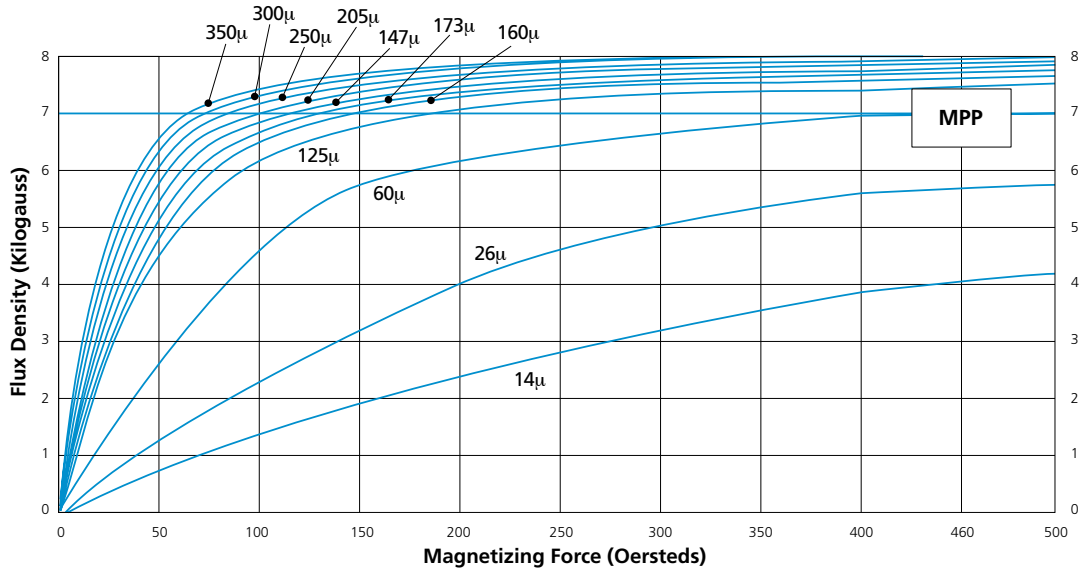


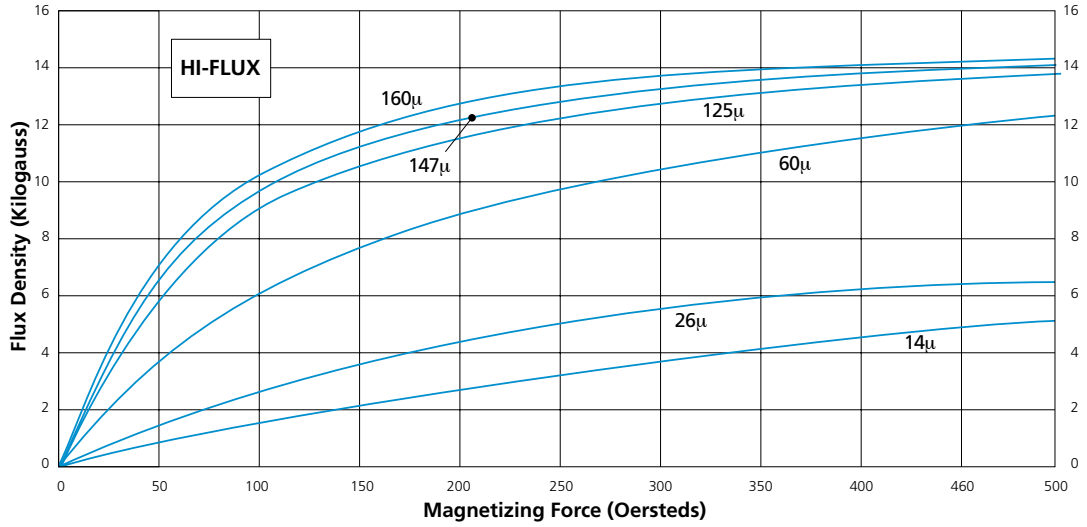
Typical Incremental Permeability vs. D.C. Bias

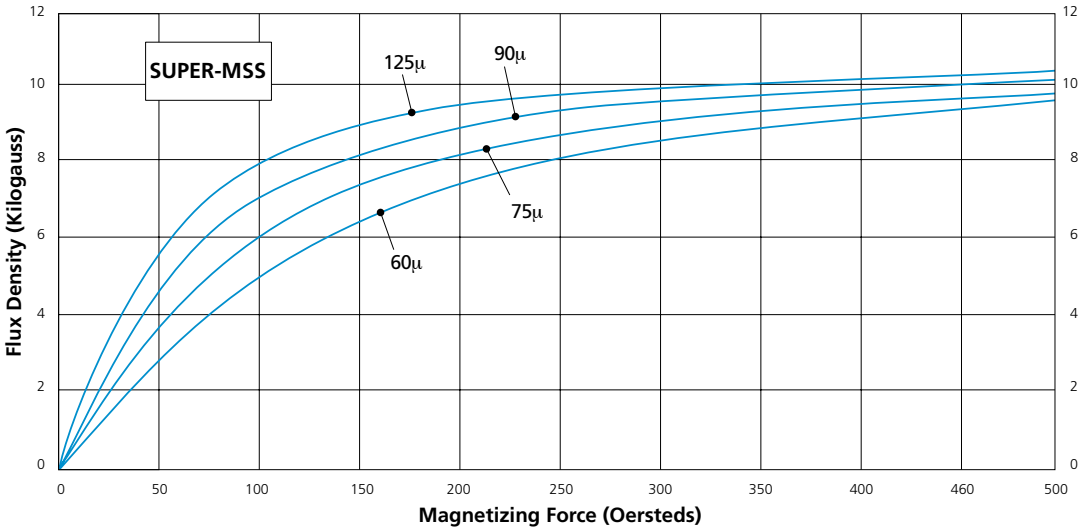


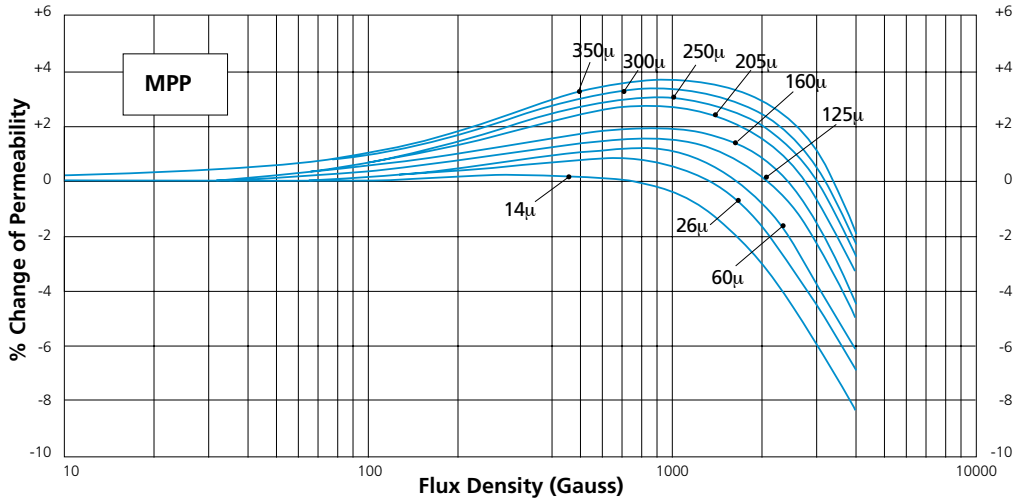


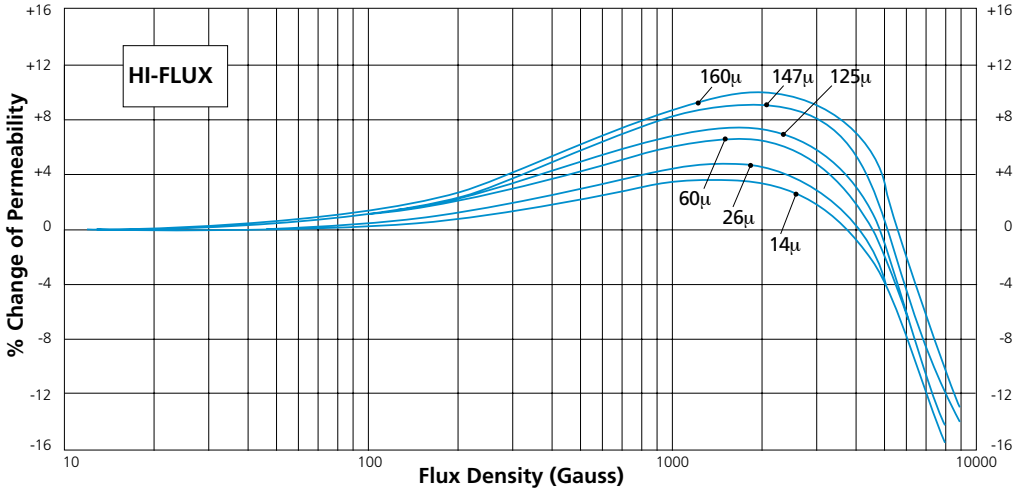


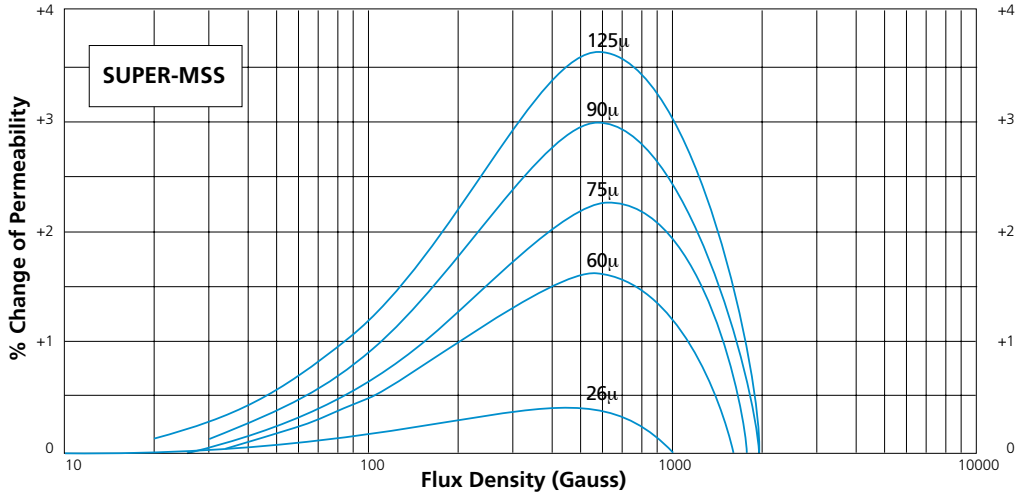

350µ
300µ
250µ
205µ
147µ
173µ
160µ
MPP
125µ
60µ
26µ
14µ
Flux Density (Kilogauss)
Magnetizing Force (Oersteds)
0 50 100 150 200 250 300 350 400 460 500
0 1 2 3 4 5 6 7 8

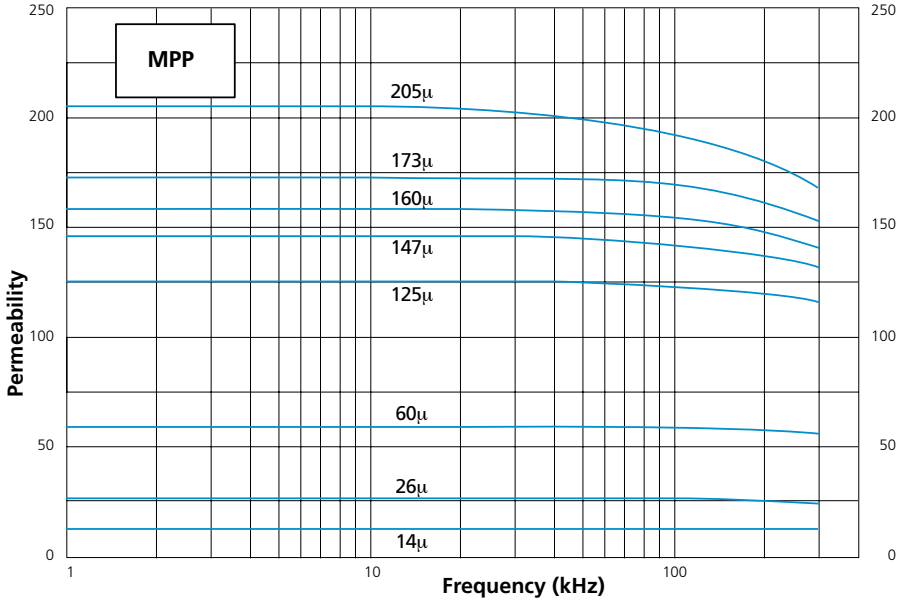

HI-FLUX
160µ
147µ
125µ
60µ
26µ
14µ
Flux Density (Kilogauss)
Magnetizing Force (Oersteds)
0 50 100 150 200 250 300 350 400 460 500
0 2 4 6 8 10 12 14 16

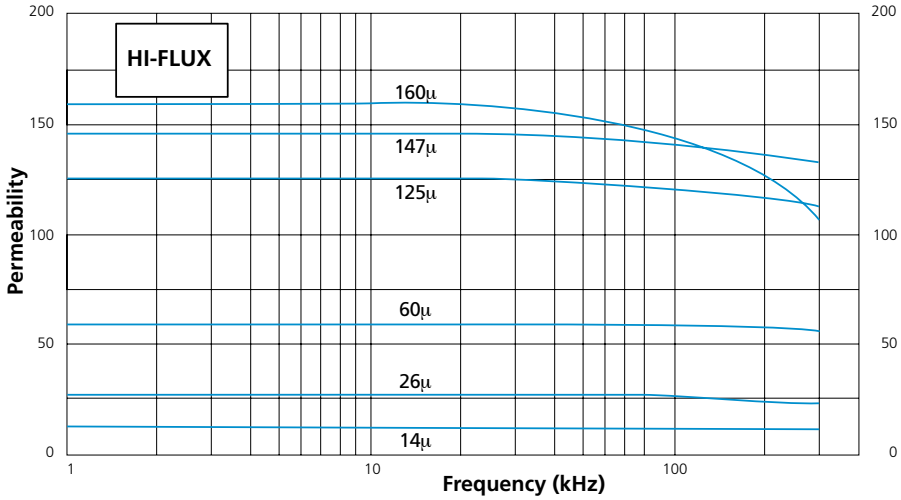

SUPER-MSS
125µ
90µ
75µ
60µ
Flux Density (Kilogauss)
Magnetizing Force (Oersteds)
0 50 100 150 200 250 300 350 400 460 500
0 2 4 6 8 10 12

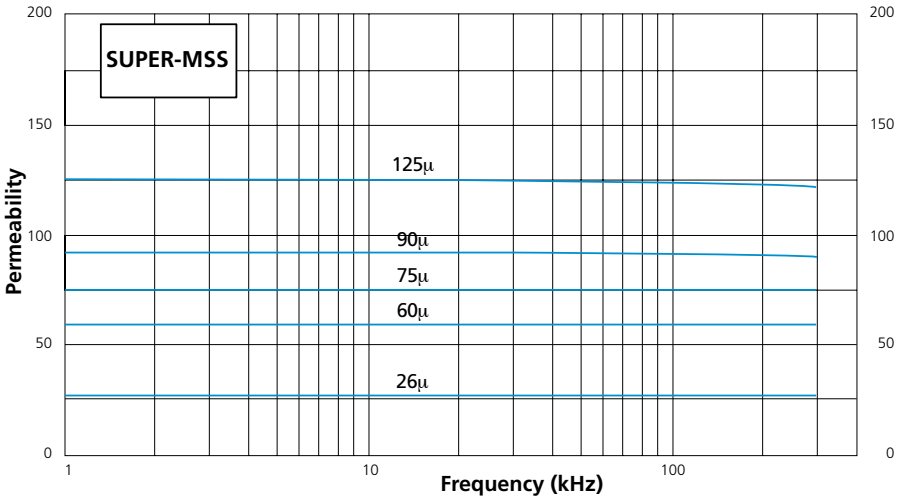

MPP
350µ
300µ
250µ
205µ
160µ
125µ
14µ
26µ
60µ
% Change of Permeability
+6
+4
+2
0
-2
-4
-6
-8
-10
10
100
1000
10000
Flux Density (Gauss)

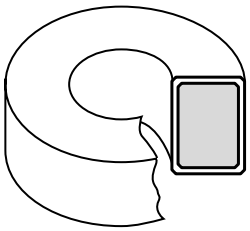

HI-FLUX
160µ
147µ
125µ
60µ
26µ
14µ
% Change of Permeability
+16
+12
+8
+4
0
-4
-8
-12
-16
10
100
1000
10000
Flux Density (Gauss)


SUPER-MSS
125µ
90µ
75µ
60µ
26µ
% Change of Permeability
+4
+3
+2
+1
0
10
100
1000
10000
Flux Density (Gauss)


MPP
205µ
173µ
160µ
147µ
125µ
60µ
26µ
14µ
Permeability
Frequency (kHz)
250
200
150
100
50
0
1
10
100


HI-FLUX
160µ
147µ
125µ
60µ
26µ
14µ
Permeability
Frequency (kHz)
200
150
100
50
0
1
10
100


SUPER-MSS
125µ
90µ
75µ
60µ
26µ
Permeability
Frequency (kHz)
200
150
100
50
0
1
10
100



CORNERS:
Tumbled

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	0.140 in 3.56 mm	0.070 in 1.78 mm	0.060 in 1.52 mm
After Coating (Parylene C)	0.148 in Max. 3.76 mm Max.	0.060 in Min. 1.52 mm Min.	0.068 in Max. 1.73 mm Max.

Physical Specifications

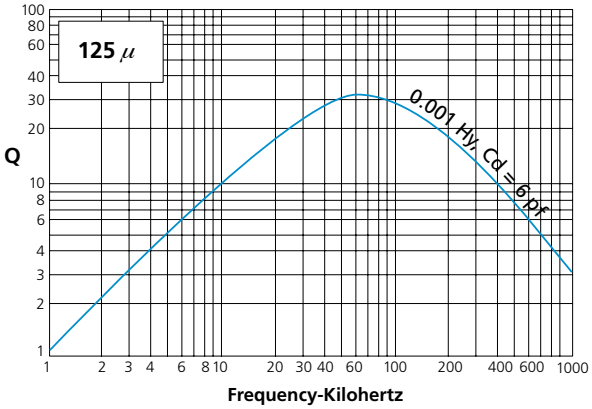
Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.0021 in^2 0.0137 cm^2	0.317 in 0.817 cm	0.000656 in^3 0.010746 cm^3	0.002827 in^2 0.018241 cm^2 3,600 cmil	0.000187 lbs 0.085 g	0.22 in 0.56 cm

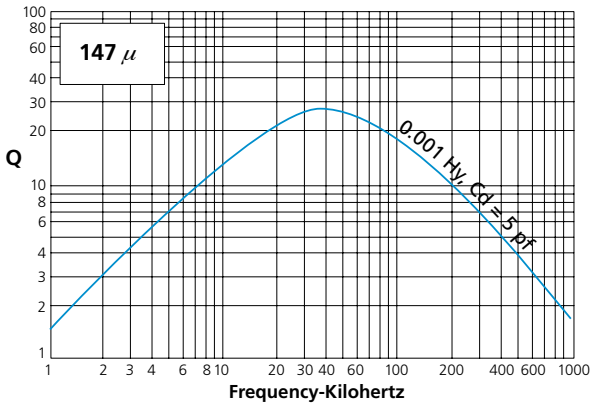
Electrical Specifications

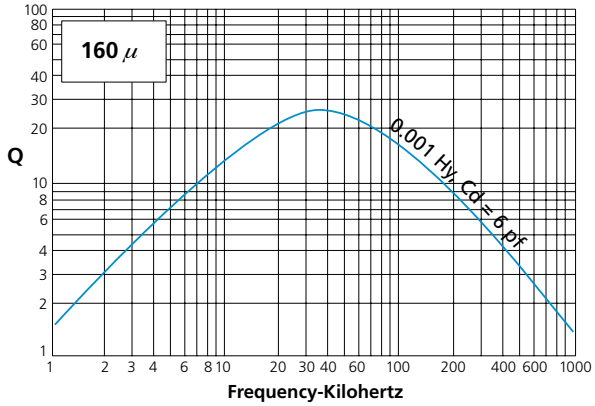
Nominal Permeability	Inductance Factor, mH +/- 8% (+/- 15% for SUPER-MSS) for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers (The finish voltage breakdown requirement does not apply.)		
			Molypermalloy	HI-FLUX	SUPER-MSS
60µ	13	11	—	HF-014060-8	MS-014060-8
75µ	16	9.1	—	—	MS-014075-8
90µ	19	7.7	—	—	MS-014090-8
125µ	26	5.9	A-479026-8	HF-014125-8	MS-014125-8
147µ	31	4.7	A-480031-8	HF-014147-8	—
160µ	33	4.4	A-481033-8	HF-014160-8	—
173µ	36	4.0	A-482036-8	—	—
205µ	43	3.7	A-522043-8	—	—
250µ	52	2.8	A-483052-8	—	—

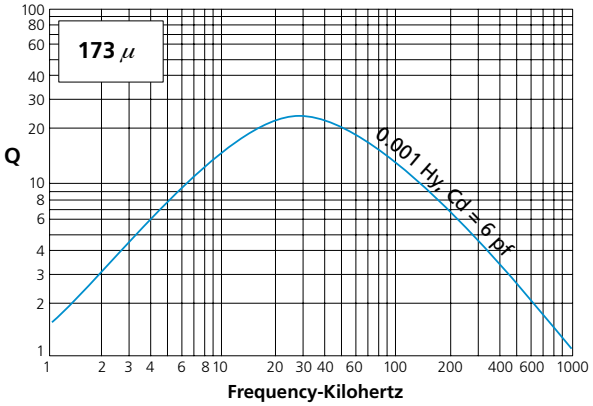
Heavy Film Magnet Wire Winding Data (Approximate)

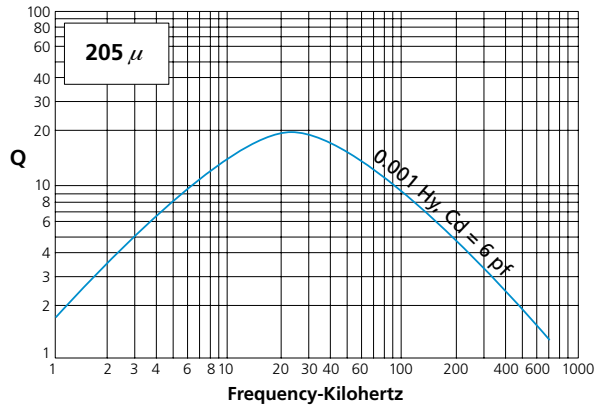
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding with 1 inch Leads		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, in.
28	10	0.01368	9	0.0237	4.4
29	12	0.0208	10	0.0314	4.6
30	15	0.0330	11	0.0431	5.0
31	19	0.0515	13	0.0581	5.3
32	24	0.0774	14	0.0768	5.7
33	30	0.1221	16	0.105	6.1
34	38	0.1929	19	0.146	6.7
35	47	0.303	21	0.200	7.3
36	59	0.471	24	0.272	7.9
37	73	0.712	27	0.363	8.5
38	93	1.132	30	0.503	9.3
39	121	1.916	35	0.727	10
40	148	2.97	40	1.02	11
41	186	4.52	44	1.37	12
42	238	7.23	50	1.90	14
43	294	11.48	56	2.67	15
44	344	16.16	60	3.45	16



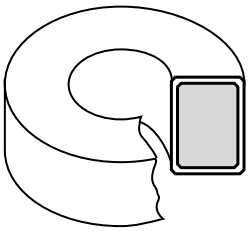








Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:
Tumbled

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	0.155 in 3.94 mm	0.087 in 2.21 mm	0.100 in 2.54 mm
After Coating (Parylene C)	0.163 in Max. 4.14 mm Max.	0.079 in Min. 2.01 mm Min.	0.108 in Max. 2.74 mm Max.

Physical Specifications

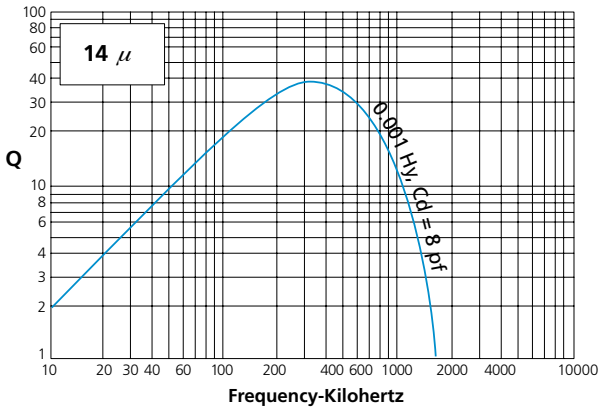
Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.003245 in^2 0.0211 cm^2	0.370 in 0.942 cm	0.001200 in^3 0.019670 cm^3	0.004902 in^2 0.031624 cm^2 6,241 cmil	0.000365 lbs 0.166 g	0.30 in 0.76 cm

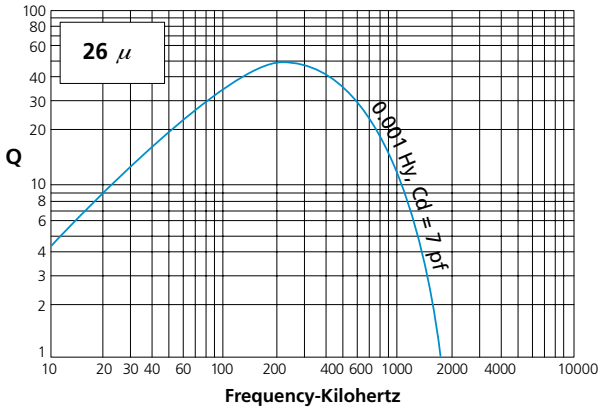
Electrical Specifications

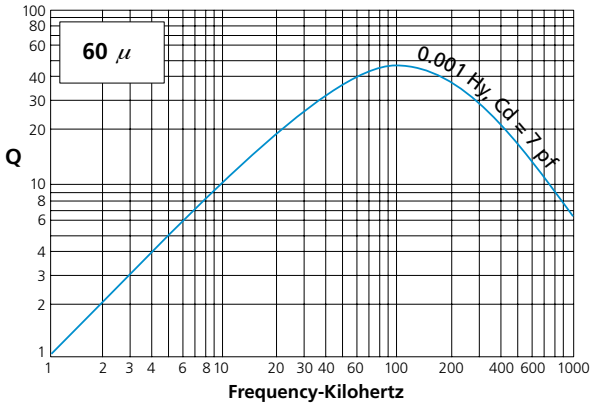
Nominal Permeability	Inductance Factor, mH +/- 8% (+/- 15% for SUPER-MSS) for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers (The finish voltage breakdown requirement does not apply.)		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	4	32	A-467004-8	HF-015014-8	—
26µ	7	15	A-468007-8	HF-015026-8	—
60µ	17	6.5	A-469017-8	HF-015060-8	MS-015060-8
75µ	21	5.8	—	—	MS-015075-8
90µ	25	4.9	—	—	MS-015090-8
125µ	35	3.5	A-470035-8	HF-015125-8	MS-015125-8
147µ	41	2.6	A-471041-8	HF-015147-8	—
160µ	45	2.5	A-472045-8	HF-015160-8	—
173µ	48	2.4	A-473048-8	—	—
205µ	57	2.2	A-474057-8	—	—
250µ	70	1.7	A-475070-8	—	—

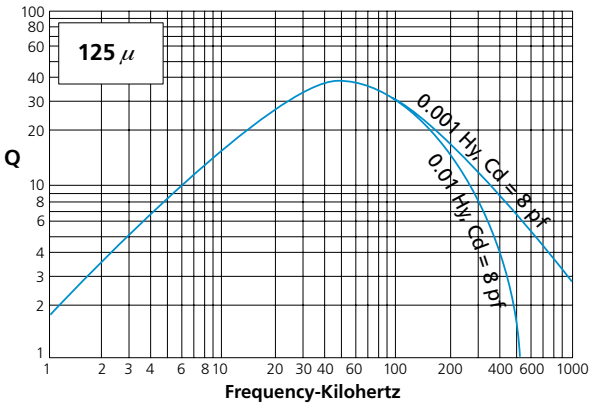
Heavy Film Magnet Wire Winding Data (Approximate)

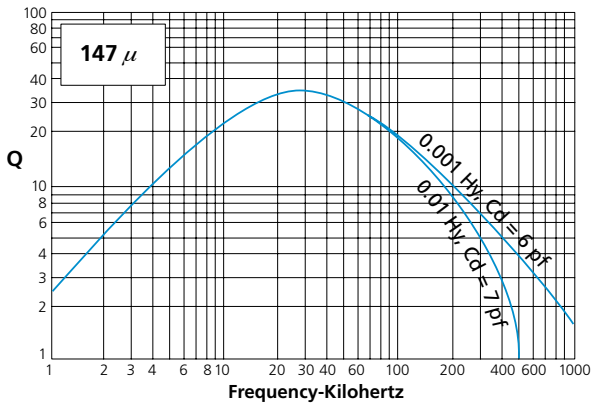
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding with 1 inch Leads		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, in.
26	11	0.01265	9	0.0184	5.4
27	13	0.01950	11	0.0248	5.8
28	17	0.0307	12	0.0342	6.3
29	21	0.0465	14	0.0458	6.8
30	26	0.0740	16	0.0638	7.4
31	33	0.1154	18	0.0869	8.0
32	40	0.1735	20	0.116	8.6
33	51	0.274	23	0.161	9.4
34	64	0.433	26	0.226	10
35	80	0.681	29	0.313	11
36	100	1.059	33	0.430	12
37	124	1.604	36	0.579	14
38	156	2.55	41	0.807	15
39	205	4.33	47	1.18	17
40	250	6.71	53	1.67	19
41	312	10.23	59	2.25	20
42	401	16.40	67	3.15	23
43	496	26.1	74	4.45	25
44	578	36.7	80	5.76	27

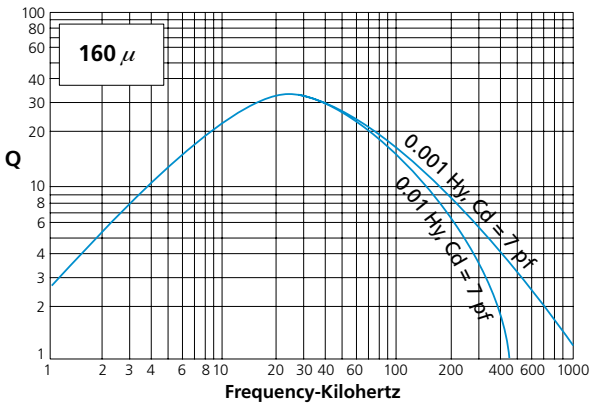


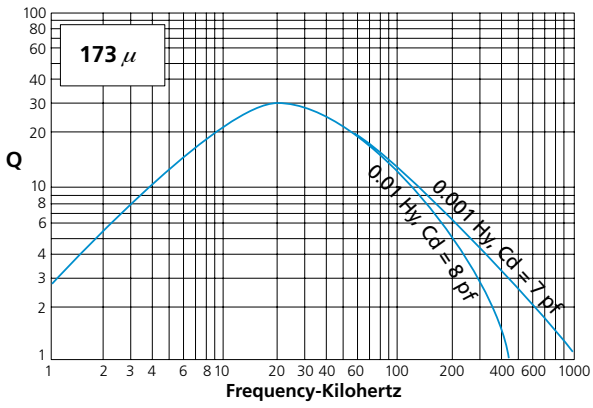


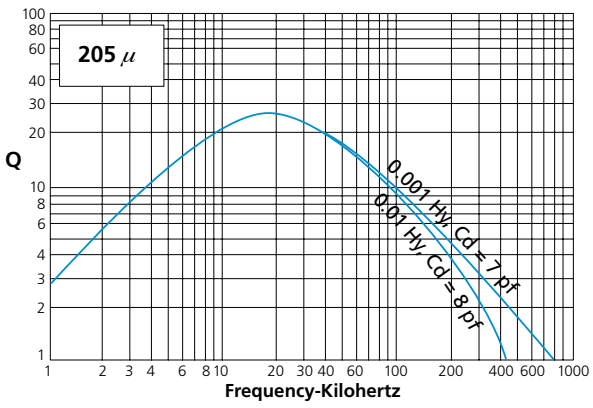




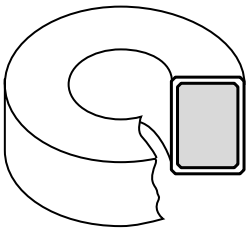








Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:
Tumbled

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	0.183 in 4.65 mm	0.093 in 2.36 mm	0.100 in 2.54 mm
After Coating (Parylene C)	0.205 in Max. 5.21 mm Max.	0.076 in Min. 1.93 mm Min.	0.130 in Max. 3.30 mm Max.

Physical Specifications

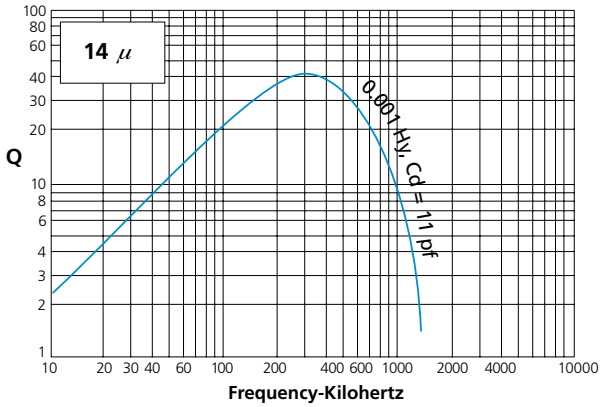
Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.00442 in^2 0.0285 cm^2	0.418 in 1.061 cm	0.001837 in^3 0.0302 cm^3	0.004536 in^2 0.029267 cm^2 5,776 cmil	0.0007 lbs 0.3 g	0.37 in 0.95 cm

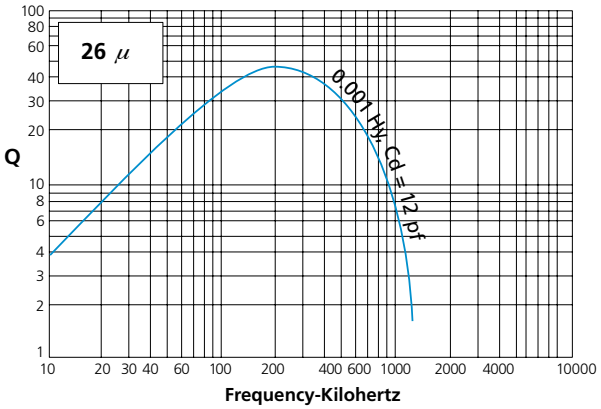
Electrical Specifications

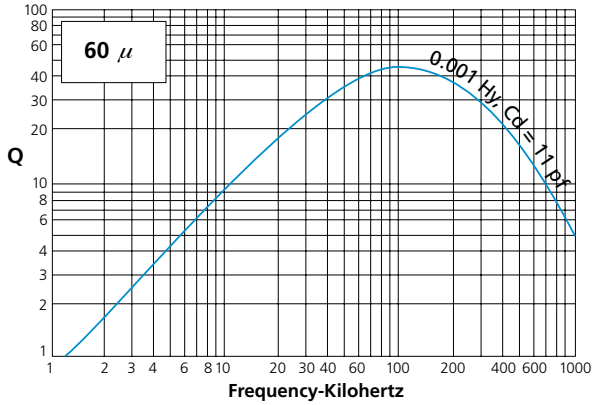
Nominal Permeability	Inductance Factor, mH +/- 8% (+/- 15% for SUPER-MSS) for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers (The finish voltage breakdown requirement does not apply.)		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	5	25	A-350005-8	HF-018014-8	—
26µ	9	14	A-351009-8	HF-018026-8	—
60µ	20	6.3	A-352020-8	HF-018060-8	MS-018060-8
75µ	25	5.0	—	—	MS-018075-8
90µ	30	4.2	—	—	MS-018090-8
125µ	42	3.0	A-353042-8	HF-018125-8	MS-018125-8
147µ	49	2.6	A-354049-8	HF-018147-8	—
160µ	53	2.4	A-355053-8	HF-018160-8	—
173µ	57	2.2	A-356057-8	—	—
205µ	68	1.9	A-357068-8	—	—
250µ	83	1.5	A-358083-8	—	—

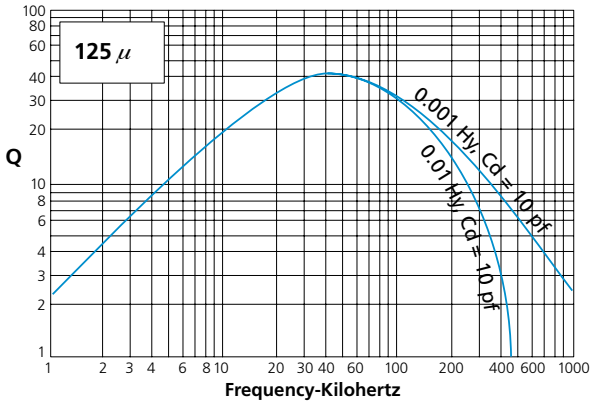
Heavy Film Magnet Wire Winding Data (Approximate)

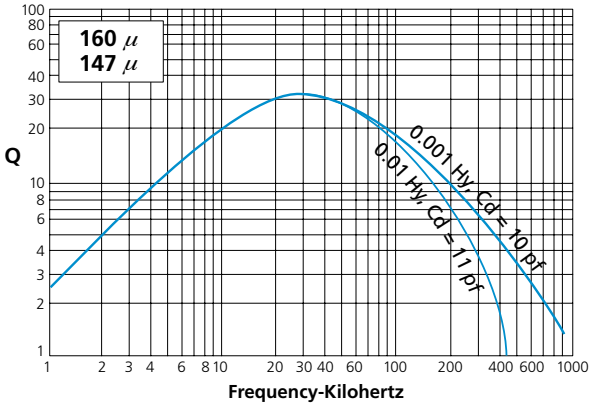
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding with 1 inch Leads		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, in.
26	12	0.01535	9	0.0205	6.0
27	14	0.0237	10	0.0280	6.5
28	18	0.0373	12	0.0388	7.1
29	22	0.0566	13	0.0524	7.7
30	28	0.0902	15	0.0734	8.5
31	35	0.1406	17	0.101	9.2
32	42	0.2117	19	0.135	10
33	53	0.334	22	0.188	11
34	67	0.529	25	0.266	12
35	84	0.834	28	0.371	14
36	104	1.297	31	0.511	15
37	129	1.967	35	0.691	16
38	163	3.14	39	0.968	18
39	213	5.32	45	1.42	20
40	260	8.25	51	2.02	22
41	324	12.59	57	2.73	25
42	417	20.2	64	3.83	28
43	514	32.1	71	5.42	30
44	600	45.2	77	7.03	33

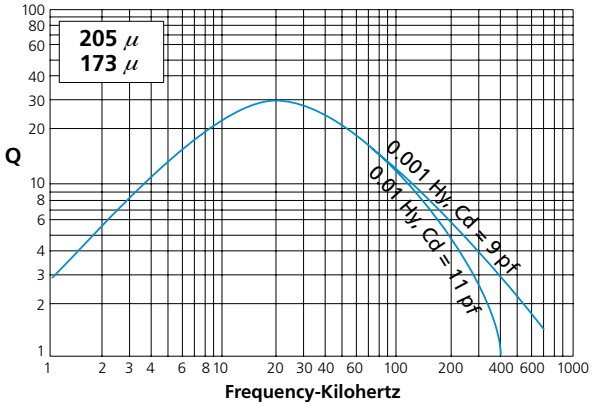




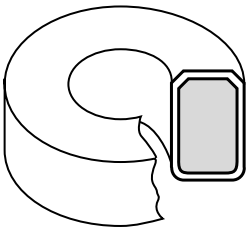








Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:

0.016 Approx. Radius Bottom, Chamfer Top

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	0.250 in 6.35 mm	0.110 in 2.79 mm	0.110 in 2.79 mm
After Coating (Parylene C)	0.275 in Max. 6.99 mm Max.	0.090 in Min. 2.29 mm Min.	0.135 in Max. 3.43 mm Max.

Physical Specifications

Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.00738 in^2 0.0476 cm^2	0.536 in 1.363 cm	0.003919 in^3 0.064219 cm^3	0.006362 in^2 0.041043 cm^2 8,100 cmil	0.0013 lbs 0.6 g	0.46 in 1.17 cm

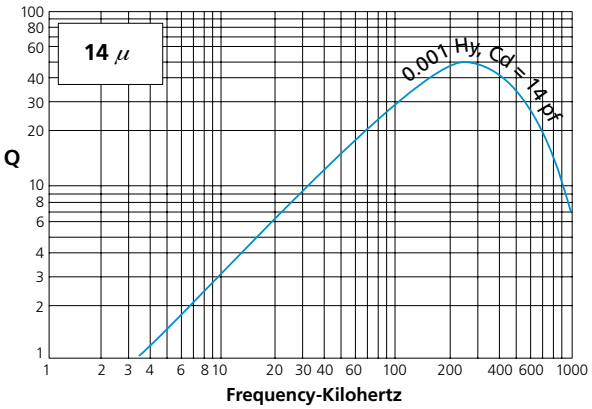
Electrical Specifications

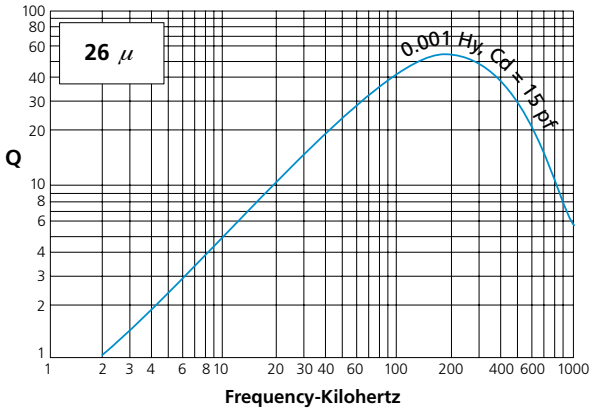
Nominal Permeability	Inductance Factor, mH +/- 8% (+/- 12% for SUPER-MSS) for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	6	17	A-531006-8	HF-025014-8	—
26µ	10	9.2	A-530010-8	HF-025026-8	—
60µ	24	4.0	A-529024-8	HF-025060-8	MS-025060-8
75µ	30	3.2	—	—	MS-025075-8
90µ	36	2.7	—	—	MS-025090-8
125µ	52	1.9	A-520052-8	HF-025125-8	MS-025125-8
147µ	58	1.7	A-528058-8	HF-025147-8	—
160µ	64	1.5	A-527064-8	HF-025160-8	—
173µ	69	1.4	A-526069-8	—	—
200µ	—	—	—	—	—
205µ	82	1.2	A-512082-8	—	—
250µ	100	0.97	A-525100-8	—	—
300µ	120	0.81	A-521120-8	—	—
350µ	140	0.69	A-543140-8	—	—

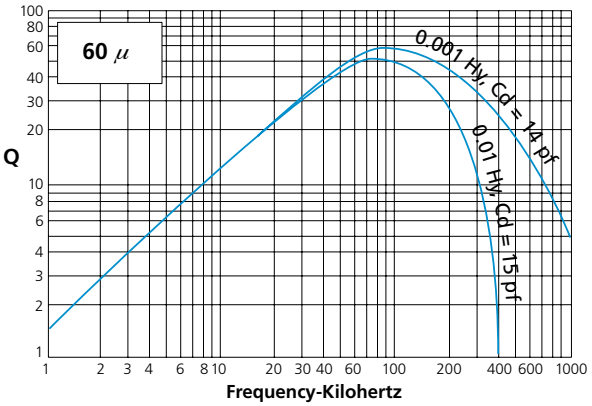
Heavy Film Magnet Wire Winding Data (Approximate)

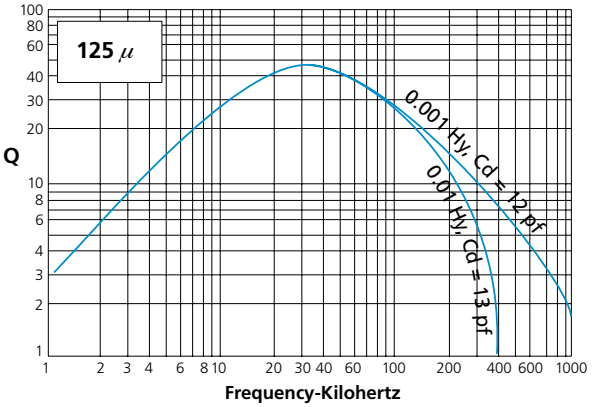
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding with 1 inch Leads		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, in.
24	10	0.01038	8	0.0132	6.2
25	13	0.01619	10	0.0183	6.8
26	16	0.0255	11	0.0253	7.4
27	20	0.0392	13	0.0346	8.1
28	25	0.0618	14	0.0482	8.9
29	31	0.0937	16	0.0653	9.7
30	39	0.1493	19	0.0918	11
31	48	0.233	21	0.126	12
32	59	0.351	23	0.170	13
33	74	0.554	26	0.238	14
34	93	0.878	30	0.337	16
35	116	1.385	34	0.470	17

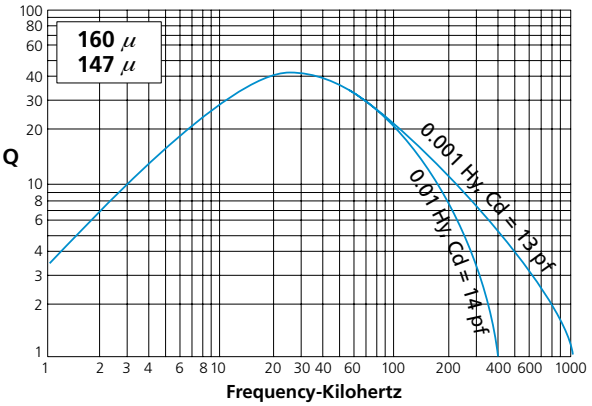
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, in.
36	145	2.15	38	0.650	19
37	180	3.27	42	0.880	21
38	227	5.21	47	1.24	23
39	297	8.85	54	1.82	26
40	363	13.74	61	2.59	29
41	454	21.0	68	3.50	32
42	583	33.7	77	4.92	36
43	720	53.5	85	6.98	39
44	840	75.4	91	9.05	42

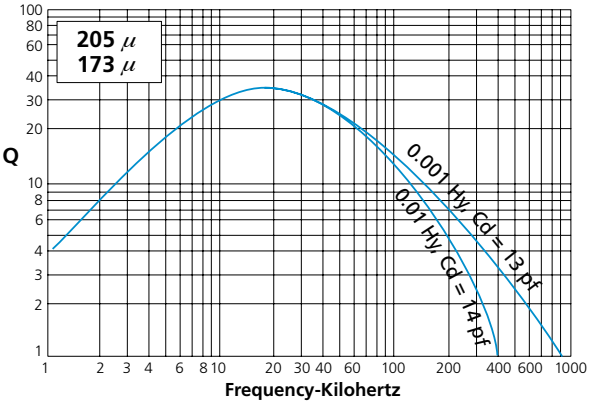




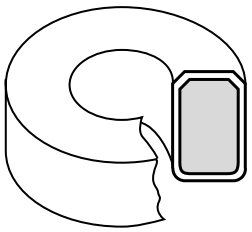








Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:

0.016 Approx. Radius Bottom, Chamfer Top

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	0.260 in 6.60 mm	0.105 in 2.67 mm	0.100 in 2.54 mm
After Coating (Parylene C)	0.285 in Max. 7.24 mm Max.	0.090 in Min. 2.29 mm Min.	0.125 in Max. 3.18 mm Max.

Physical Specifications

Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.00738 in^2 0.0476 cm^2	0.537 in 1.363 cm	0.003904 in^3 0.063971 cm^3	0.006362 in^2 0.041043 cm^2 8,100 cmil	0.0015 lbs 0.7 g	0.44 in 1.11 cm

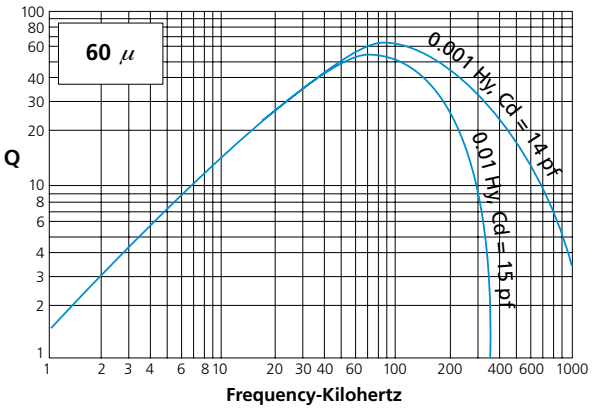
Electrical Specifications

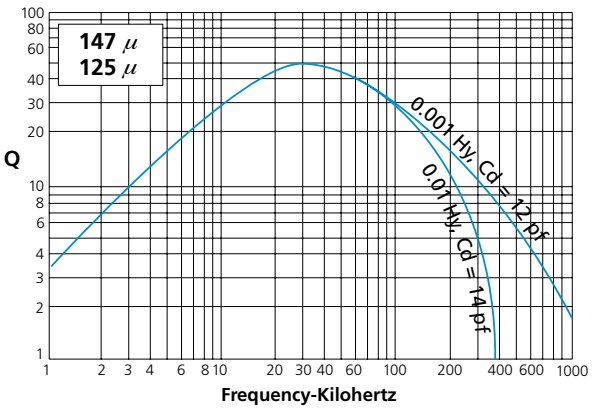
Nominal Permeability	Inductance Factor, mH +/- 8% (+/- 12% for SUPER-MSS) for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	6.05	19	A-674006-8	HF-027014-8	—
26µ	11.2	11	A-675011-8	HF-027026-8	—
60µ	26	4.5	A-460026-8	HF-027060-8	MS-027060-8
75µ	32	3.7	—	—	MS-027075-8
90µ	39	3.1	—	—	MS-027090-8
125µ	54	2.2	A-331054-8	HF-027125-8	MS-027125-8
147µ	64	1.8	A-464064-8	HF-027147-8	—
160µ	69	1.7	A-461069-8	HF-027160-8	—
173µ	75	1.6	A-465075-8	—	—
205µ	89	1.3	A-462089-8	—	—
250µ	108	1.1	A-362108-8	—	—
300µ	130	0.90	A-384130-8	—	—
350µ	151	0.77	A-406151-8	—	—

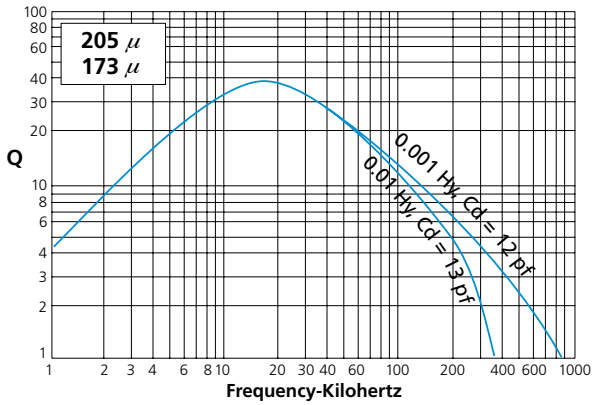
Heavy Film Magnet Wire Winding Data (Approximate)

AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding with 1 inch Leads		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, in.
25	12	0.01516	10	0.0180	6.7
26	15	0.0239	11	0.0249	7.3
27	19	0.0368	13	0.0341	8.0
28	23	0.0579	14	0.0474	8.7
29	29	0.0878	16	0.0642	9.5
30	36	0.1399	19	0.0902	10
31	45	0.218	21	0.124	11
32	55	0.329	23	0.167	12
33	69	0.519	26	0.233	14
34	86	0.823	30	0.330	15
35	108	1.298	34	0.461	17
36	134	2.02	38	0.637	18

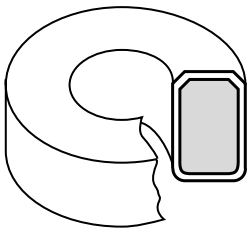
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, in.
37	166	3.06	42	0.862	20
38	210	4.89	47	1.21	22
39	274	8.29	54	1.78	25
40	335	12.87	61	2.53	28
41	419	19.65	68	3.43	31
42	538	31.5	77	4.81	35
43	664	50.2	85	6.83	38
44	774	70.7	91	8.85	41







Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:

0.016 Approx. Radius Bottom, Chamfer Top

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	260 in 6.60 mm	0.105 in 2.67 mm	0.188 in 4.78 mm
After Coating (Parylene C)	0.288 in Max. 7.32 mm Max.	0.087 in Min. 2.21 mm Min.	0.218 in Max. 5.54 mm Max.

Physical Specifications

Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.01426 in^2 0.0920 cm^2	0.537 in 1.363 cm	0.007443 in^3 0.1254 cm^3	0.005945 in^2 0.038353 cm^2 7,569 cmil	0.0024 lbs 1.1 g	0.62 in 1.57 cm

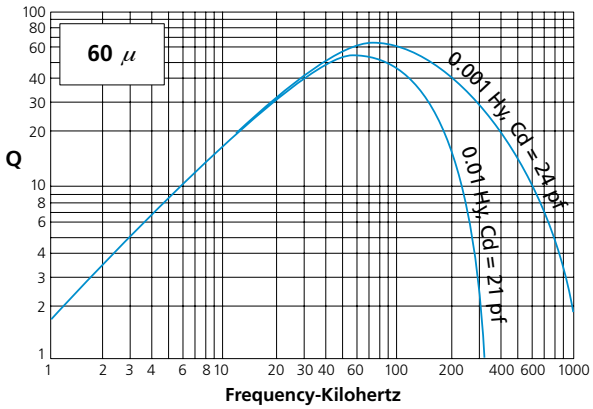
Electrical Specifications

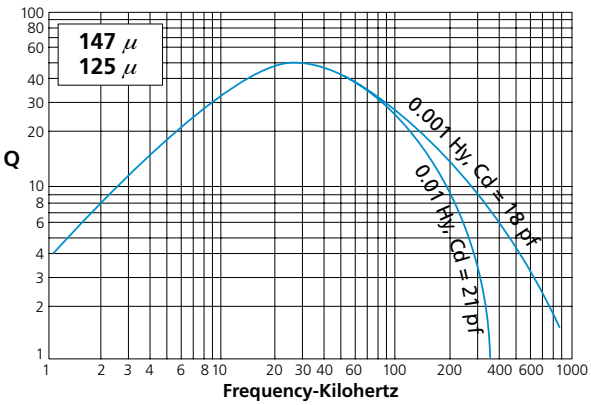
Nominal Permeability	Inductance Factor, mH +/- 8% (+/- 12% for SUPER-MSS) for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	12	14	A-630012-8	HF-026014-8	—
26µ	21.4	8.0	A-639021-8	HF-026026-8	—
60µ	50	3.4	A-135050-8	HF-026060-8	MS-026060-8
75µ	62	2.7	—	—	MS-026075-8
90µ	74	2.3	—	—	MS-026090-8
125µ	103	1.6	A-134103-8	HF-026125-8	MS-026125-8
147µ	122	1.4	A-224122-8	HF-026147-8	—
160µ	132	1.3	A-638132-8	HF-026160-8	—
173µ	144	1.2	A-222144-8	—	—
205µ	170	0.99	A-200170-8	—	—
250µ	206	0.82	A-363206-8	—	—
300µ	247	0.68	A-385247-8	—	—
350µ	296	0.57	A-337296-8	—	—

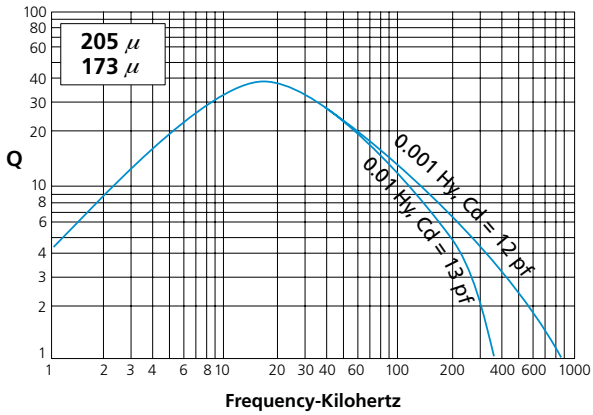
Heavy Film Magnet Wire Winding Data (Approximate)

AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding with 1 inch Leads		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, in.
25	12	0.0206	9	0.0223	8.3
26	15	0.0326	11	0.0312	9.1
27	19	0.0503	12	0.0431	10
28	23	0.0795	14	0.0605	11
29	29	0.1208	16	0.0826	12
30	36	0.1928	18	0.117	14
31	45	0.301	20	0.162	15
32	55	0.455	22	0.220	16
33	69	0.719	25	0.309	18
34	86	1.142	29	0.440	20
35	108	1.804	32	0.617	22
36	134	2.81	36	0.857	25

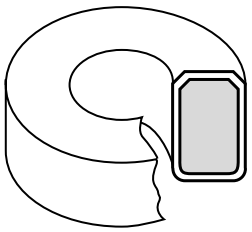
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, in.
37	166	4.27	40	1.17	27
38	210	6.82	45	1.64	30
39	274	11.60	52	2.42	34
40	335	18.02	59	3.46	39
41	419	27.5	66	4.70	43
42	538	44.2	74	6.62	48
43	664	70.4	82	9.42	53
44	774	99.3	88	12.2	57







Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:

0.016 Approx. Radius Bottom, Chamfer Top

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	0.277 in 7.04 mm	0.156 in 3.96 mm	0.200 in 5.08 mm
After Coating (Parylene C)	0.302 in Max. 7.67 mm Max.	0.136 in Min. 3.45 mm Min.	0.225 in Max. 5.72 mm Max.

Physical Specifications

Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.01162 in^2 0.07497 cm^2	0.662 in 1.682 cm	0.007693 in^3 0.126069 cm^3	0.01453 in^2 0.09372 cm^2 18,496 cmil	0.0026 lbs 1.2 g	0.63 in 1.60 cm

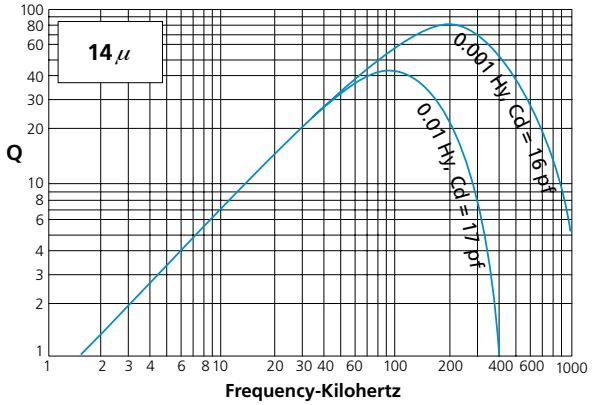
Electrical Specifications

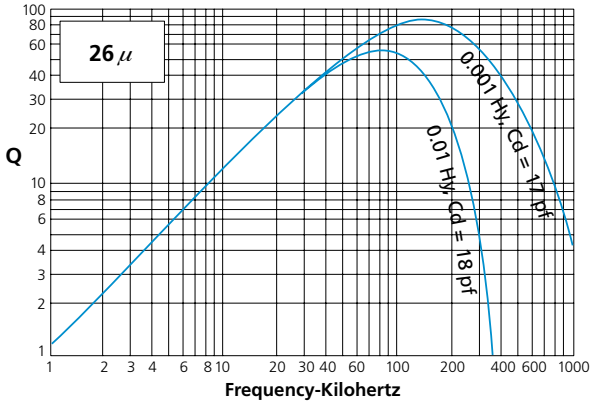
Nominal Permeability	Inductance Factor, mH +/- 8% (+/- 12% for SUPER-MSS) for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	8	7.9	A-541008-8	HF-028014-8	—
26µ	14	4.5	A-540014-8	HF-028026-8	—
60µ	33	1.92	A-539033-8	HF-028060-8	MS-028060-8
75µ	42	1.53	—	—	MS-028075-8
90µ	50	1.29	—	—	MS-028090-8
125µ	70	0.92	A-538070-8	HF-028125-8	MS-028125-8
147µ	81	0.78	A-537081-8	HF-028147-8	—
160µ	89	0.72	A-536089-8	HF-028160-8	—
173µ	95	0.67	A-535095-8	—	—
205µ	113	0.56	A-453113-8	—	—
250µ	138	0.46	A-534138-8	—	—
300µ	166	0.38	A-533166-8	—	—
350µ	194	0.33	A-532194-8	—	—

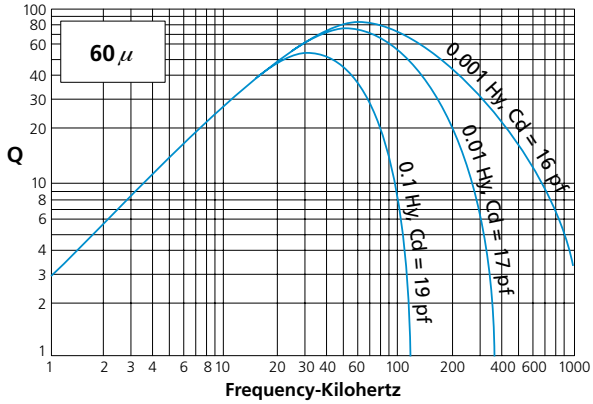
Heavy Film Magnet Wire Winding Data (Approximate)

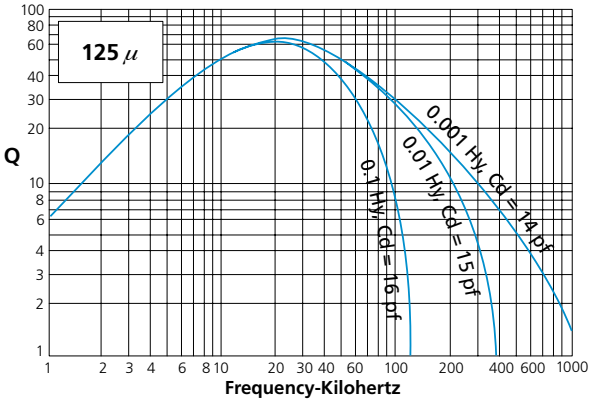
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding with 1 inch Leads		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, in.
21	11	0.00798	9	0.00902	8.5
22	14	0.01260	11	0.0126	9.3
23	18	0.01942	12	0.0174	10
24	22	0.0304	14	0.0242	11
25	27	0.0473	16	0.0338	13
26	34	0.0744	18	0.0472	14
27	43	0.1144	21	0.0651	15
28	53	0.1805	23	0.0915	17
29	66	0.274	26	0.125	18
30	83	0.436	29	0.177	21
31	103	0.681	33	0.244	22
32	126	1.026	36	0.331	25
33	158	1.623	41	0.466	27
34	198	2.57	46	0.664	31
35	249	4.06	52	0.932	34

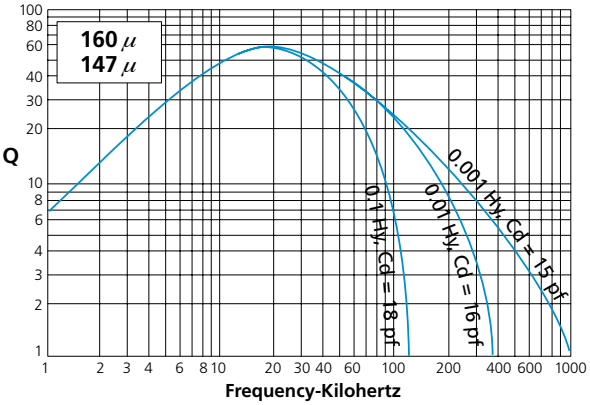
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, in.
36	310	6.33	58	1.29	37
37	383	9.62	65	1.76	41
38	485	15.35	73	2.48	46
39	634	26.1	83	3.65	52
40	774	40.5	93	5.22	58
41	968	61.9	104	7.10	64.4
42	1243	99.5	117	9.99	72
43	1535	158.3	130	14.2	80
44	1790	223.0	140	18.4	85

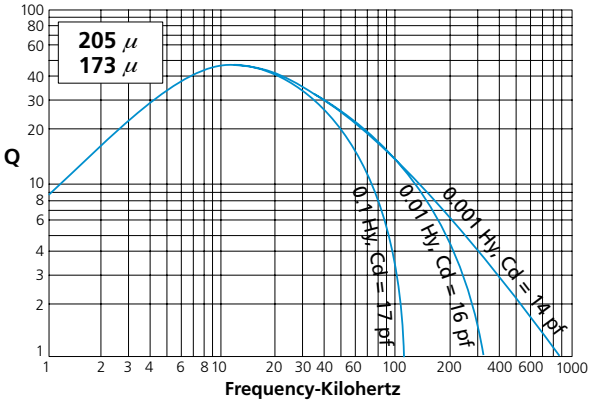




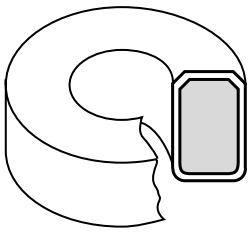








Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:

0.016 Approx. Radius Bottom, Chamfer Top

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	0.310 in 7.87 mm	0.156 in 3.96 mm	0.125 in 3.18 mm
After Coating (Parylene C)	0.335 in Max. 8.51 mm Max.	0.135 in Min. 3.43 mm Min.	0.150 in Max. 3.81 mm Max.

Physical Specifications

Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.00953 in^2 0.0615 cm^2	0.704 in 1.787 cm	0.00671 in^3 0.1099 cm^3	0.01431 in^2 0.09235 cm^2 18,225 cmil	0.0022 lbs 1.0 g	0.49 in 1.25 cm

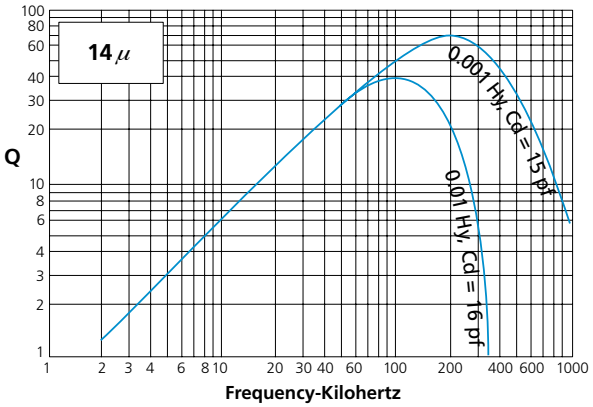
Electrical Specifications

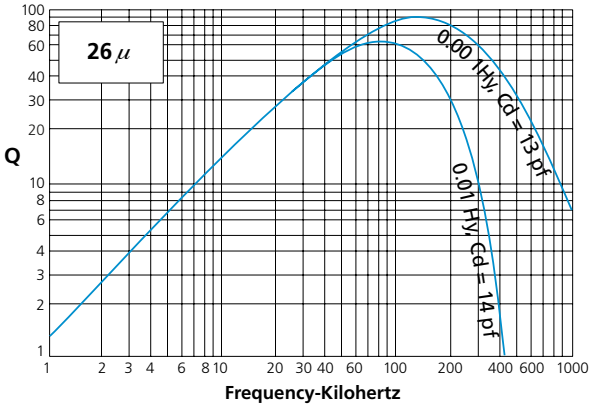
Nominal Permeability	Inductance Factor, mH +/- 8% (+/- 12% for SUPER-MSS) for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	6	8.4	A-340006-8	HF-031014-8	—
26µ	11	4.6	A-339011-8	HF-031026-8	—
60µ	25	2.0	A-138025-8	HF-031060-8	MS-031060-8
75µ	31	1.6	—	—	MS-031075-8
90µ	37	1.4	—	—	MS-031090-8
125µ	52	0.97	A-137052-8	HF-031125-8	MS-031125-8
147µ	62	0.81	A-225062-8	HF-031147-8	—
160µ	66	0.76	A-338066-8	HF-031160-8	—
173µ	73	0.68	A-223073-8	—	—
205µ	86	0.59	A-201086-8	—	—
250µ	104	0.48	A-364104-8	—	—
300µ	124	0.41	A-386124-8	—	—
350µ	145	0.35	A-407145-8	—	—

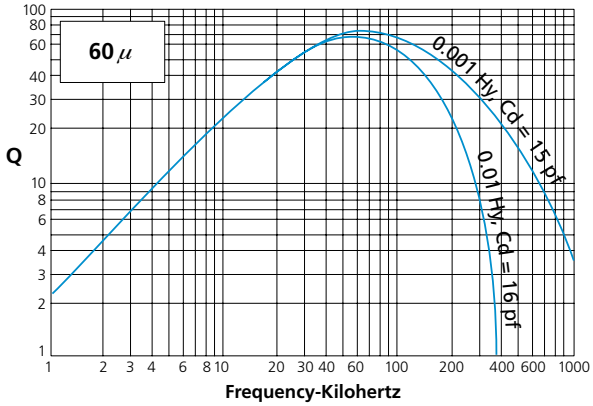
Heavy Film Magnet Wire Winding Data (Approximate)

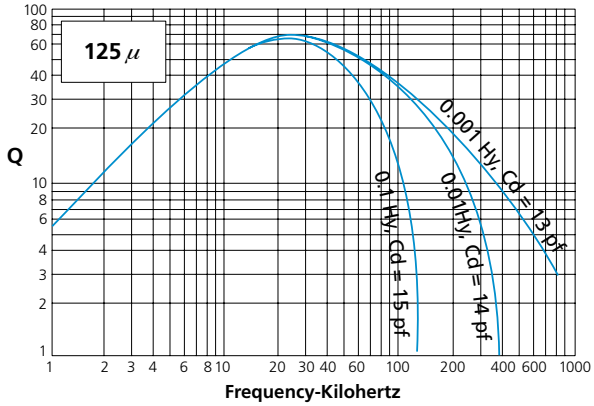
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding with 1 inch Leads		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, in.
21	12	0.00651	9	0.00780	7.3
22	14	0.01027	11	0.0108	8.0
23	18	0.01580	12	0.0148	8.8
24	22	0.0247	14	0.0206	9.6
25	28	0.0384	16	0.0285	11
26	35	0.0602	18	0.0397	12
27	43	0.0926	20	0.0545	13
28	54	0.1457	23	0.0762	14
29	66	0.221	26	0.104	15
30	83	0.351	29	0.146	17
31	103	0.547	33	0.201	19
32	126	0.824	36	0.272	20
33	158	1.302	41	0.382	22
34	198	2.06	46	0.543	25
35	248	3.25	52	0.760	28

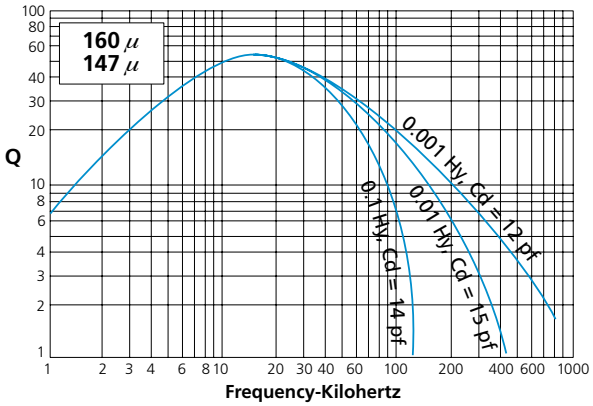
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, in.
36	309	5.06	58	1.05	30
37	381	7.68	64	1.43	34
38	482	12.25	72	2.01	37
39	630	20.8	82	2.96	42
40	770	32.3	93	4.22	47
41	961	49.3	103	5.73	52
42	1234	79.1	116	8.05	58
43	1525	125.9	129	11.4	64
44	1778	177.4	139	14.8	69

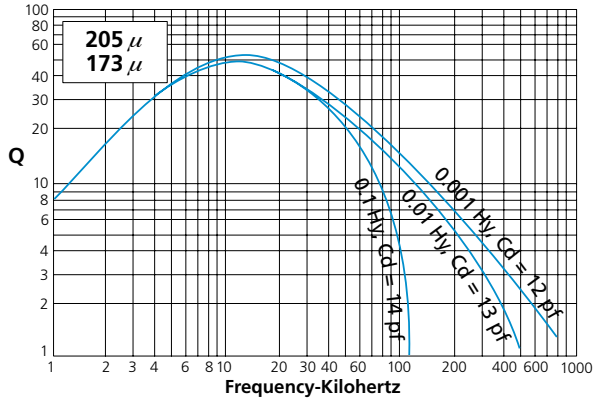




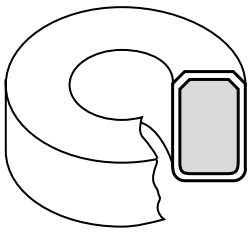








Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:

0.016 Approx. Radius Bottom, Chamfer Top

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	0.380 in 9.65 mm	0.188 in 4.78 mm	0.125 in 3.18 mm
After Coating (Parylene C)	0.405 in Max. 10.29 mm Max.	0.168 in Min. 4.27 mm Min.	0.150 in Max. 3.81 mm Max.

Physical Specifications

Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.01166 in^2 0.0752 cm^2	0.858 in 2.177 cm	.0100 in^3 0.1639 cm^3	0.02217 in^2 0.14301 cm^2 28,224 cmil	0.0032 lbs 1.45 g	0.53 in 1.35 cm

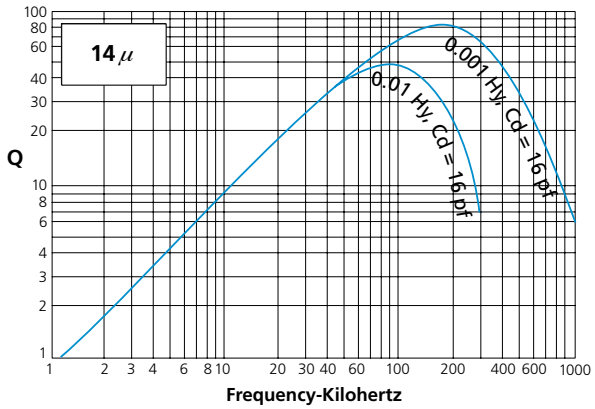
Electrical Specifications

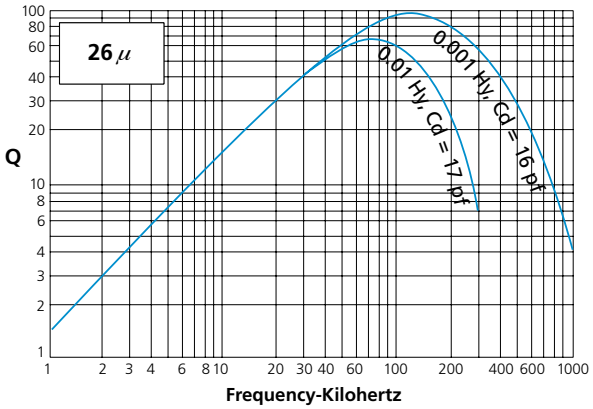
Nominal Permeability	Inductance Factor, mH +/- 8% (+/- 12% for SUPER-MSS) for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	6	6.2	A-502006-8	HF-039014-8	—
26µ	11	3.3	A-501011-8	HF-039026-8	—
60µ	25	1.5	A-500025-8	HF-039060-8	MS-039060-8
75µ	32	1.1	—	—	MS-039075-8
90µ	38	0.96	—	—	MS-039090-8
125µ	53	0.69	A-250053-8	HF-039125-8	MS-039125-8
147µ	63	0.59	A-499063-8	HF-039147-8	—
160µ	68	0.54	A-498068-8	HF-039160-8	—
173µ	74	0.50	A-497074-8	—	—
205µ	84	0.44	A-496084-8	—	—
250µ	106	0.35	A-495106-8	—	—
300µ	128	0.29	A-494128-8	—	—
350µ	149	0.25	A-493149-8	—	—

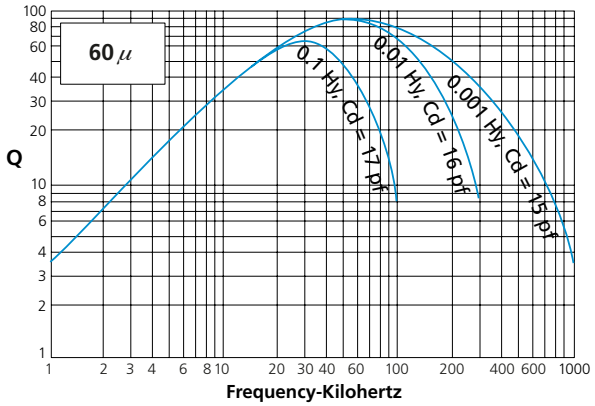
Heavy Film Magnet Wire Winding Data (Approximate)

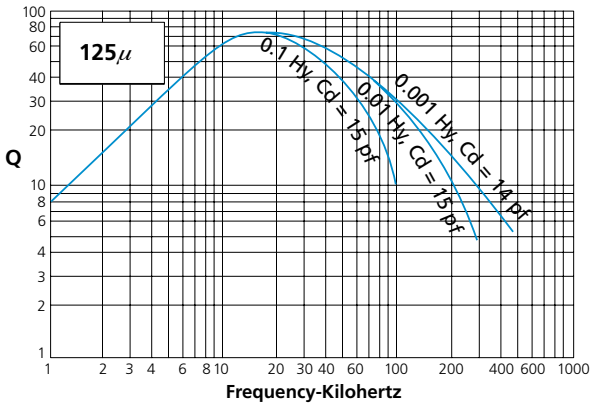
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding with 1 inch Leads		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, in.
19	11	0.00437	9	0.00529	7.9
20	14	0.00680	11	0.00729	8.6
21	17	0.01058	12	0.0101	9.5
22	22	0.01667	14	0.0141	10
23	27	0.02560	16	0.0193	11
24	33	0.03990	18	0.0268	13
25	42	0.06210	21	0.0372	14
26	52	0.09730	23	0.0519	15
27	64	0.149	26	0.0714	17
28	80	0.235	29	0.100	18
29	98	0.356	33	0.136	20
30	124	0.567	37	0.193	22
31	154	0.884	41	0.266	24
32	188	1.33	46	0.360	27
33	236	2.10	51	0.505	30

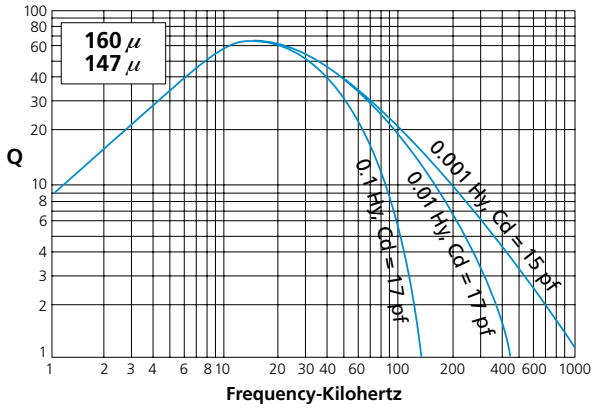
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, in.
34	296	3.33	58	0.719	33
35	371	5.25	65	1.01	37
36	462	8.18	73	1.40	40
37	570	12.4	81	1.90	45
38	722	19.8	90	2.67	50
39	943	33.6	103	3.94	56
40	1152	52.2	116	5.62	63
41	1439	79.7	129	7.63	69
42	1848	128.0	146	10.7	78
43	2282	203.0	161	15.3	86
44	2661	287.0	173	19.8	92

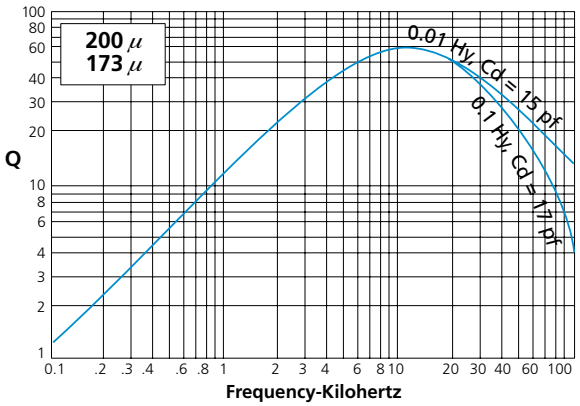




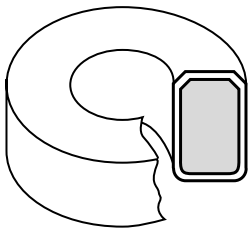








Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:

0.016 Approx. Radius Bottom, Chamfer Top

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	0.380 in 9.65 mm	0.188 in 4.78 mm	0.156 in 3.96 mm
After Coating (Parylene C)	0.405 in Max. 10.29 mm Max.	0.168 in Min. 4.27 mm Min.	0.180 in Max. 4.57 mm Max.

Physical Specifications

Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.01465 in^2 0.0945 cm^2	0.859 in 2.177 cm	0.01258 in^3 0.2060 cm^3	0.02217 in^2 0.14301 cm^2 28,224 cmil	0.0040 lbs 1.8 g	0.59 in 1.50 cm

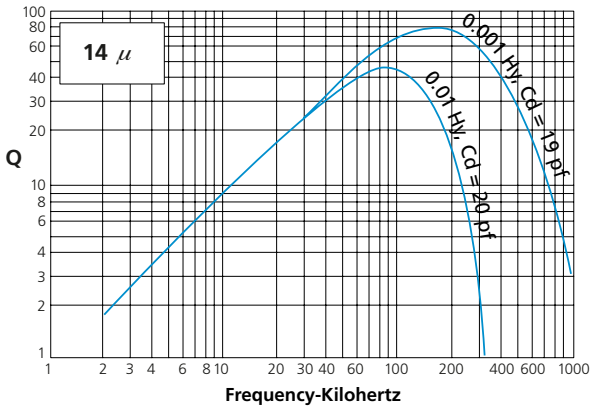
Electrical Specifications

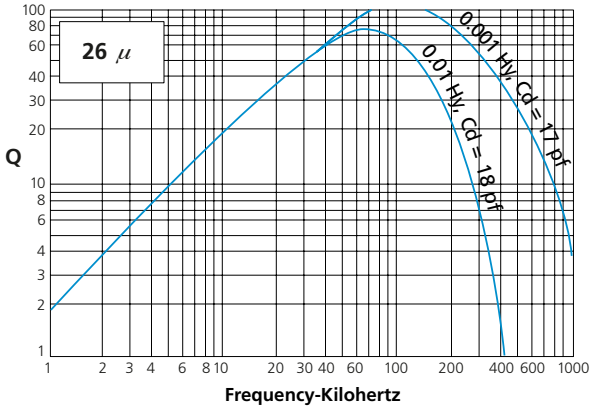
Nominal Permeability	Inductance Factor, mH +/- 8% (+/- 12% for SUPER-MSS) for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	7	5.9	A-249007-8	HF-038014-8	—
26µ	14	2.9	A-248014-8	HF-038026-8	—
60µ	32	1.3	A-247032-8	HF-038060-8	MS-038060-8
75µ	40	1.0	—	—	MS-038075-8
90µ	48	0.85	—	—	MS-038090-8
125µ	66	0.62	A-246066-8	HF-038125-8	MS-038125-8
147µ	78	0.53	A-245078-8	HF-038147-8	—
160µ	84	0.49	A-240084-8	HF-038160-8	—
173µ	92	0.45	A-244092-8	—	—
205µ	109	0.38	A-202109-8	—	—
250µ	132	0.31	A-365132-8	—	—
300µ	159	0.26	A-387159-8	—	—
350µ	185	0.22	A-408185-8	—	—

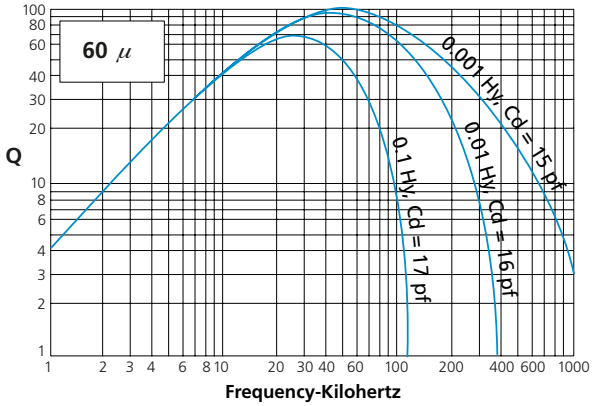
Heavy Film Magnet Wire Winding Data (Approximate)

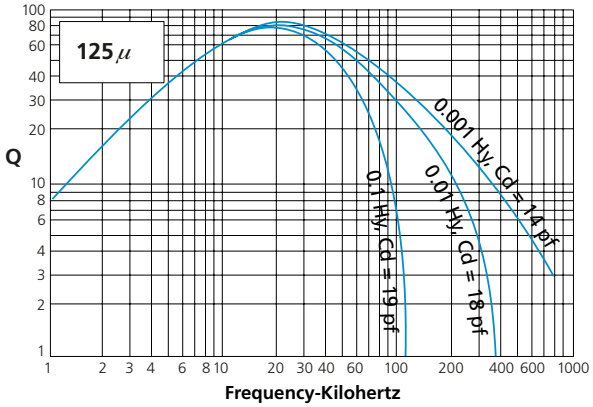
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding with 1 inch Leads		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, in.
19	11	0.00483	9	0.00567	8.5
20	14	0.00751	11	0.00783	9.3
21	17	0.01171	12	0.0109	10
22	22	0.01845	14	0.0152	11
23	27	0.0284	16	0.0209	12
24	33	0.0443	18	0.0291	14
25	42	0.0689	21	0.0405	15
26	52	0.1081	23	0.0567	17
27	64	0.1663	26	0.0782	18
28	80	0.262	29	0.110	20
29	98	0.397	33	0.150	22
30	124	0.632	37	0.212	25
31	154	0.986	41	0.293	27
32	188	1.486	46	0.397	29
33	236	2.35	51	0.558	33

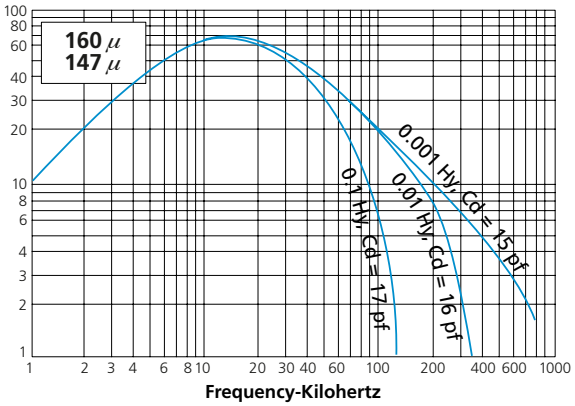
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, in.
34	296	3.72	58	0.795	37
35	371	5.86	65	1.12	41
36	462	9.15	73	1.55	45
37	570	13.90	81	2.10	49
38	722	22.2	90	2.96	55
39	943	37.7	103	4.37	62
40	1152	58.5	116	6.25	70
41	1439	89.4	129	8.49	77
42	1848	143.6	146	11.9	86
43	2282	229.0	161	17.0	95
44	2661	322.0	173	22.1	102

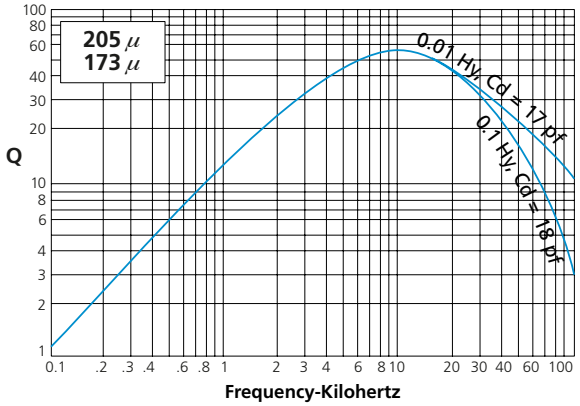




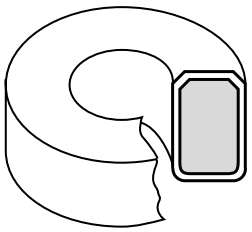








Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:

0.016 Approx. Radius Bottom, Chamfer Top

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	0.400 in 10.16 mm	0.200 in 5.08 mm	0.156 in 3.96 mm
After Coating (Parylene C)	0.425 in Max. 10.80 mm Max.	0.180 in Min. 4.57 mm Min.	0.180 in Max. 4.57 mm Max.

Physical Specifications

Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.01550 in^2 0.1000 cm^2	0.906 in 2.38 cm	0.0140 in^3 0.2380 cm^3	0.02545 in^2 0.16417 cm^2 32,400 cmil	0.0044 lbs 2.0 g	0.60 in 1.53 cm

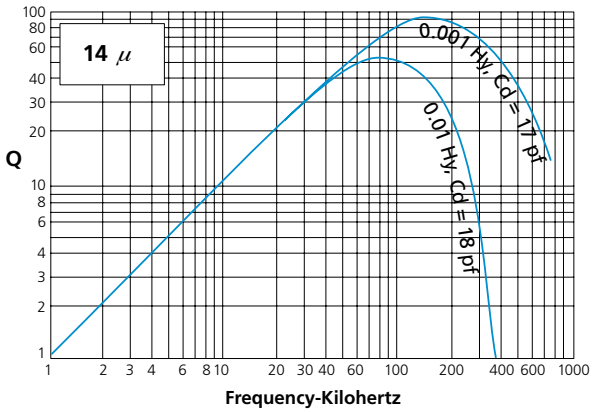
Electrical Specifications

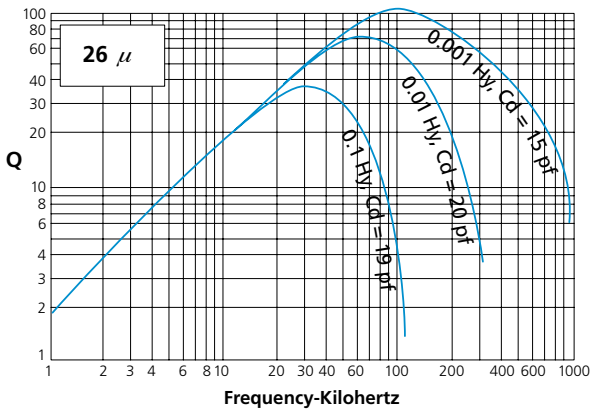
Nominal Permeability	Inductance Factor, mH +/- 8% (+/- 12% for SUPER-MSS) for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	7	5.2	A-342007-2	HF-040014-2	—
26µ	14	2.6	A-341014-2	HF-040026-2	—
60µ	32	1.0	A-307032-2	HF-040060-2	MS-040060-2
75µ	40	0.91	—	—	MS-040075-2
90µ	48	0.76	—	—	MS-040090-2
125µ	66	0.55	A-292066-2	HF-040125-2	MS-040125-2
147µ	78	0.47	A-239078-2	HF-040147-2	—
160µ	84	0.43	A-308084-2	HF-040160-2	—
173µ	92	0.39	A-238092-2	—	—
200µ	105	0.34	A-309105-2	—	—
250µ	132	0.27	A-366132-2	—	—
300µ	159	0.23	A-388159-2	—	—
350µ	185	0.20	A-409185-2	—	—

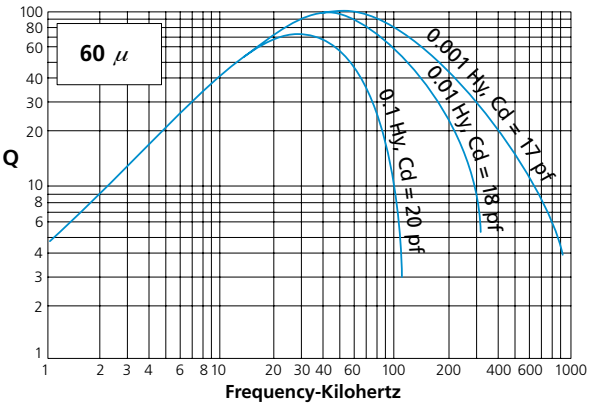
Heavy Film Magnet Wire Winding Data (Approximate)

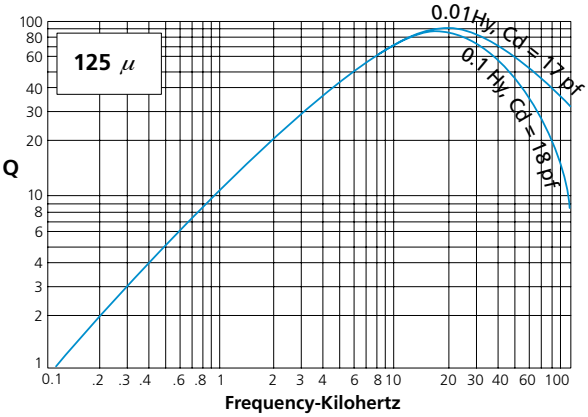
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding with 1 inch leads		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, in.
18	10	0.00359	9	0.00442	8.3
19	13	0.00560	10	0.00613	9.1
20	16	0.00871	12	0.00847	10
21	20	0.01356	13	0.0118	11
22	25	0.0214	15	0.0164	12
23	31	0.0328	17	0.0226	13
24	38	0.0513	20	0.0315	15
25	47	0.0797	22	0.0439	16
26	59	0.1250	25	0.0614	18
27	73	0.1922	28	0.0846	20
28	91	0.303	32	0.119	22
29	112	0.458	35	0.162	24
30	141	0.730	40	0.230	27
31	175	1.139	44	0.317	29
32	214	1.716	49	0.430	32

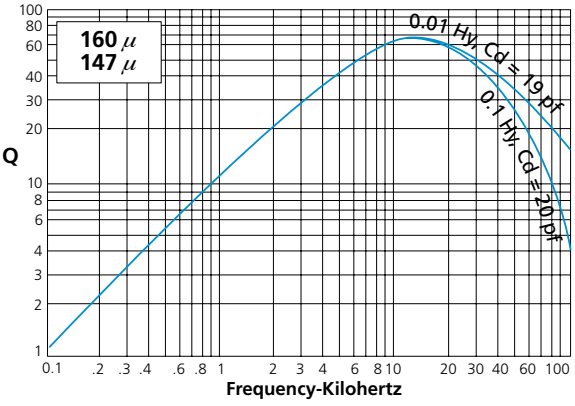
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, in.
33	269	2.71	55	0.605	35
34	337	4.30	62	0.862	40
35	422	6.79	70	1.21	44
36	526	10.58	78	1.68	49
37	650	16.06	86	2.28	54
38	823	25.6	97	3.22	60
39	1074	43.6	110	4.74	67
40	1313	67.6	124	6.78	75
41	1639	103.3	139	9.21	84
42	2106	166.0	156	13.0	94
43	2600	264.0	173	18.4	103
44	3032	372.0	186	23.9	111

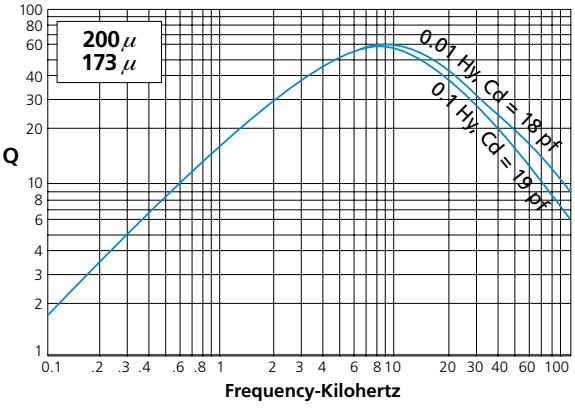




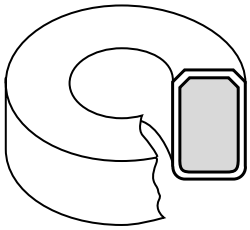








Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:

0.016 Approx. Radius Bottom, Chamfer Top

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	0.440 in 11.18 mm	0.250 in 6.35 mm	0.156 in 3.96 mm
After Coating (Parylene C)	0.468 in Max. 11.89 mm Max.	0.232 in Min. 5.89 mm Min.	0.186 in Max. 4.72 mm Max.

Physical Specifications

Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.01403 in^2 0.0906 cm^2	1.08 in 2.69 cm	0.01515 in^3 0.2437 cm^3	0.04227 in^2 0.27273 cm^2 53,824 cmil	0.0044 lbs 2.0 g	0.60 in 1.52 cm

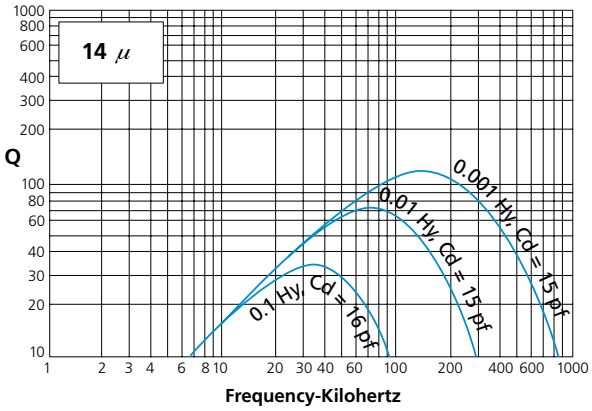
Electrical Specifications

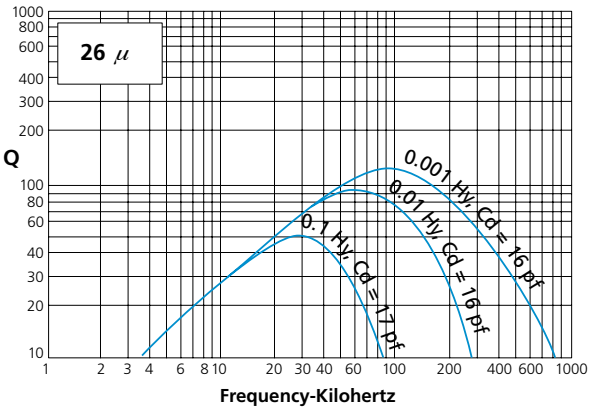
Nominal Permeability	Inductance Factor, mH +/- 8% (+/- 12% for SUPER-MSS) for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	6	3.7	A-257006-2	HF-044014-2	—
26µ	11	2.0	A-256011-2	HF-044026-2	—
60µ	26	0.85	A-255026-2	HF-044060-2	MS-044060-2
75µ	32	0.70	—	—	MS-044075-2
90µ	38	0.59	—	—	MS-044090-2
125µ	53	0.42	A-253053-2	HF-044125-2	MS-044125-2
147µ	63	0.35	A-252063-2	HF-044147-2	—
160µ	68	0.32	A-670068-2	HF-044160-2	—
173µ	74	0.30	A-251074-2	—	—
205µ	88	0.25	A-203088-2	—	—
250µ	106	0.21	A-367106-2	—	—
300µ	127	0.18	A-389127-2	—	—
350µ	148	0.15	A-410148-2	—	—

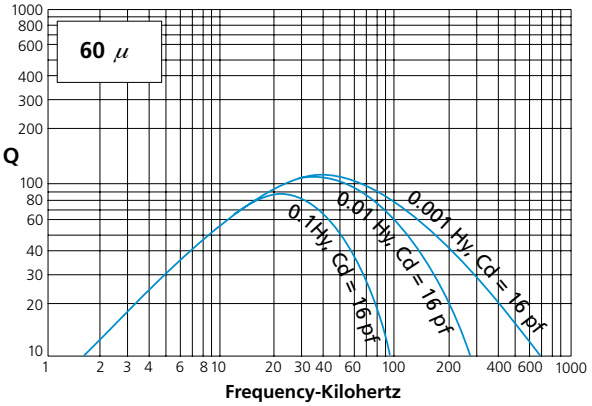
Heavy Film Magnet Wire Winding Data (Approximate)

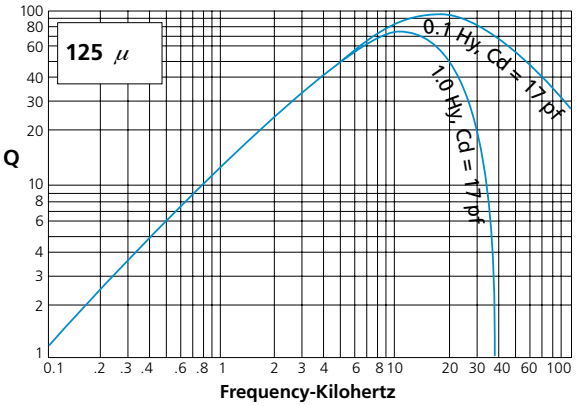
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding with 1 inch Leads		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, in.
16	11	0.00241	9	0.00299	8.9
17	13	0.00375	11	0.00412	9.8
18	16	0.00587	12	0.00572	11
19	20	0.00913	14	0.00792	12
20	25	0.01414	16	0.0109	13
21	32	0.0210	18	0.0152	14
22	40	0.0345	21	0.0212	16
23	49	0.0529	23	0.0292	17
24	61	0.0826	26	0.0406	19
25	76	0.1281	29	0.0566	21
26	95	0.201	33	0.0792	23
27	118	0.308	37	0.109	26
28	147	0.485	42	0.153	28
29	180	0.735	46	0.209	31
30	227	1.170	52	0.297	34
31	282	1.824	58	0.410	38
32	345	2.75	64	0.556	41
33	432	4.34	72	0.782	46

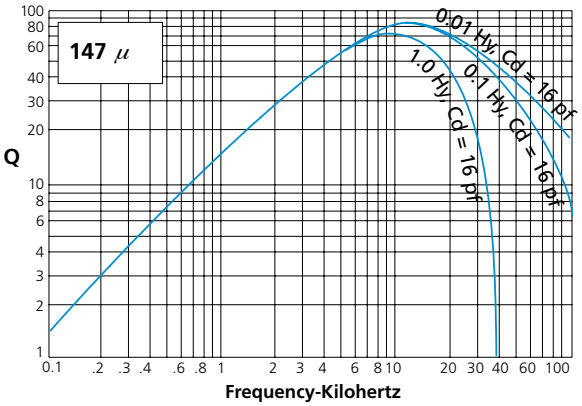
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, in.
34	542	6.89	81	1.114	51
35	679	10.87	91	1.564	57
36	847	16.92	101	2.171	63
37	1046	25.7	112	2.952	69
38	1323	41.0	126	4.162	77
39	1729	69.7	143	6.138	87
40	2112	108.2	161	8.775	98
41	2638	165.3	179	11.9	108
42	3388	266.0	202	16.8	121
43	4183	422.0	223	23.9	134
44	4879	595.0	240	31.0	143

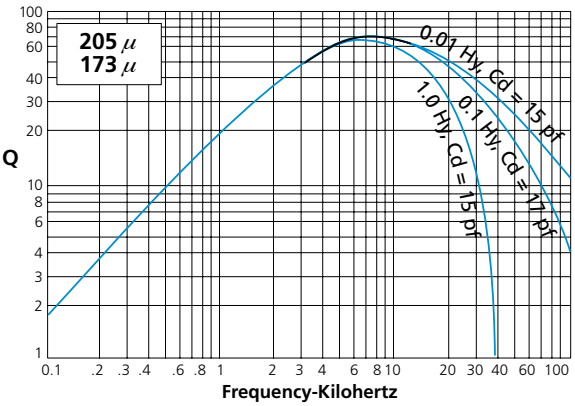




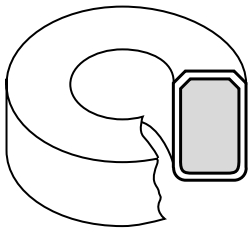








Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:

0.031 Approx. Radius Bottom, Chamfer Top

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	0.500 in 12.70 mm	0.300 in 7.62 mm	0.187 in 4.75 mm
After Coating (White Enamel)	0.530 in Max. 13.46 mm Max.	0.275 in Min. 6.99 mm Min.	0.217 in Max. 5.51 mm Max.

Physical Specifications

Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.01767 in^2 0.1140 cm^2	1.229 in 3.124 cm	0.02172 in^3 0.35568 cm^3	0.05940 in^2 0.38320 cm^2 75,625 cmil	0.0066 lbs 3.0 g	0.67 in 1.71 cm

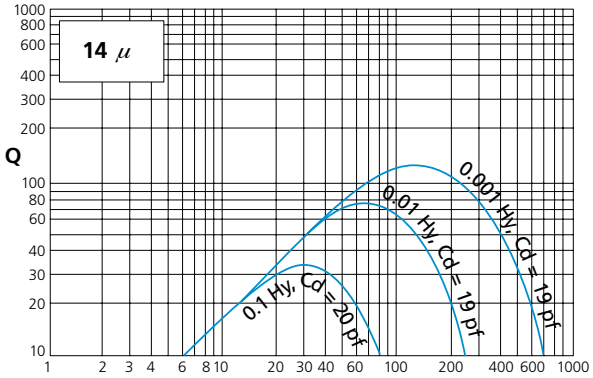
Electrical Specifications

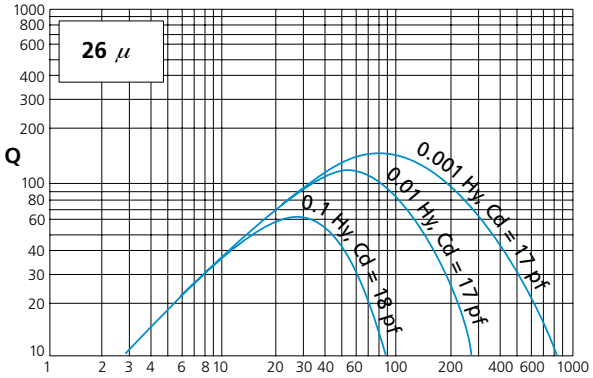
Nominal Permeability	Inductance Factor, mH +/- 8% for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	6.4	3.1	A-053006-2	HF-050014-2	—
26µ	12	1.6	A-052012-2	HF-050026-2	—
60µ	27	0.70	A-051027-2	HF-050060-2	MS-050060-2
75µ	34	0.56	—	—	MS-050075-2
90µ	40	0.47	—	—	MS-050090-2
100µ	45	0.42	A-261045-2	—	—
125µ	56	0.34	A-050056-2	HF-050125-2	MS-050125-2
147µ	67	0.26	A-143067-2	HF-050147-2	—
160µ	72	0.25	A-301072-2	HF-050160-2	—
173µ	79	0.24	A-172079-2	—	—
205µ	93	0.20	A-204093-2	—	—
250µ	112	0.17	A-368112-2	—	—
300µ	134	0.14	A-390134-2	—	—
350µ	157	0.12	A-412157-2	—	—

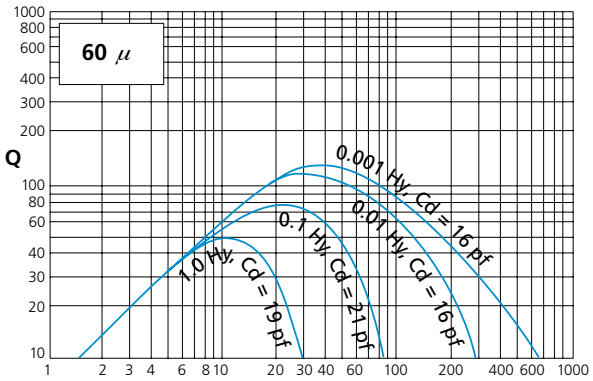
Heavy Film Magnet Wire Winding Data (Approximate)

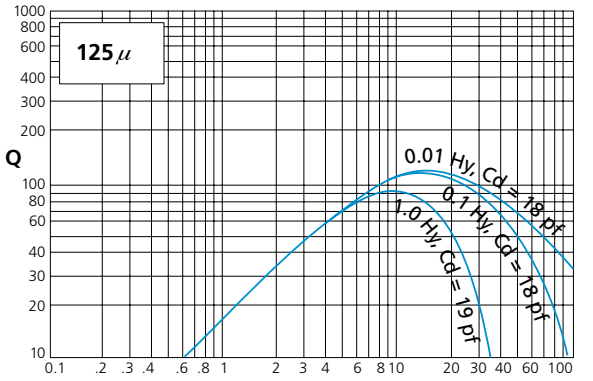
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding with 1 inch Leads		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, in.
15	12	0.00248	10	0.00271	10
16	15	0.00389	11	0.00376	11
17	19	0.00603	13	0.00520	12
18	23	0.00942	15	0.00722	14
19	29	0.01462	17	0.0100	15
20	36	0.0226	19	0.0139	16
21	45	0.0352	22	0.0193	18
22	57	0.0552	25	0.0270	20
23	70	0.0847	28	0.0371	22
24	87	0.1322	31	0.0518	24
25	108	0.205	35	0.0723	27
26	135	0.322	40	0.101	30
27	167	0.495	45	0.140	33
28	209	0.779	50	0.197	36
29	257	1.180	56	0.269	40

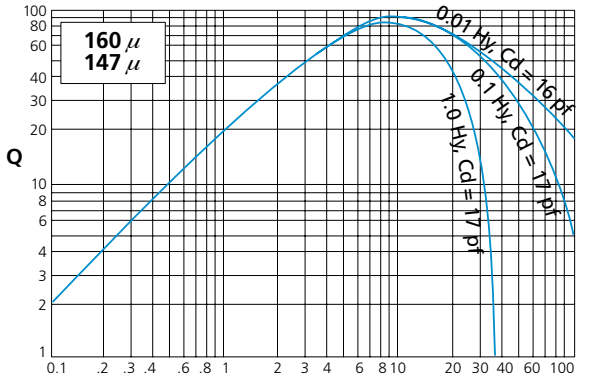
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, in.
30	322	1.880	63	0.381	44
31	401	2.93	69	0.527	48
32	491	4.42	77	0.716	53
33	615	6.99	86	1.01	59
34	771	11.09	97	1.44	66
35	967	17.51	108	2.02	73
36	1205	27.3	121	2.80	81
37	1488	41.4	134	3.81	89
38	1883	66.1	150	5.38	100
39	2460	112.4	170	7.93	113
40	3005	174.7	192	11.3	126
41	3754	267.0	213	15.4	140
42	4822	429.0	240	21.7	157
43	5953	683.0	265	30.9	173
44	6943	962.0	285	40.1	186

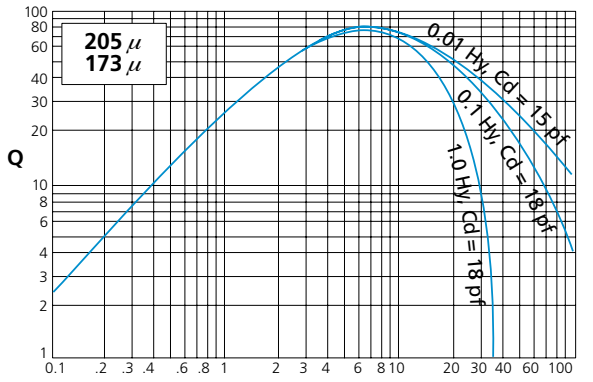




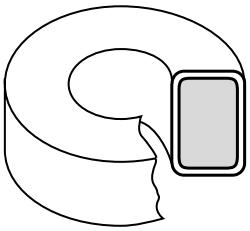








Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:

0.031 Approx. Radius (Typical)

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	0.655 in 16.64 mm	0.400 in 10.16 mm	0.250 in 6.35 mm
After Coating (White Enamel)	0.685 in Max. 17.40 mm Max.	0.375 in Min. 9.53 mm Min.	0.280 in Max. 7.11 mm Max.

Physical Specifications

Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.0298 in^2 0.1920 cm^2	1.619 in 4.11 cm	0.0483 in^3 0.7891 cm^3	0.11045 in^2 0.71256 cm^2 140,625 cmil	0.015 lbs 6.8 g	0.86 in 2.18 cm

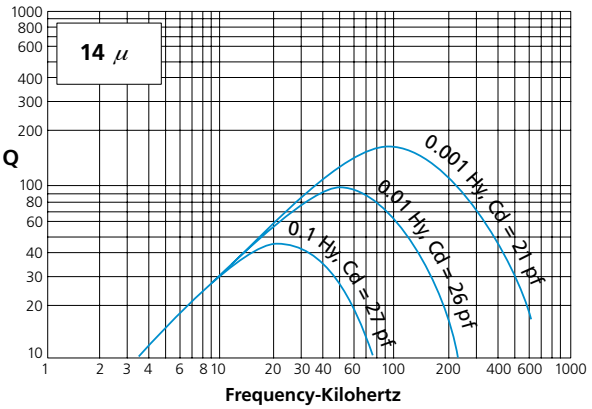
Electrical Specifications

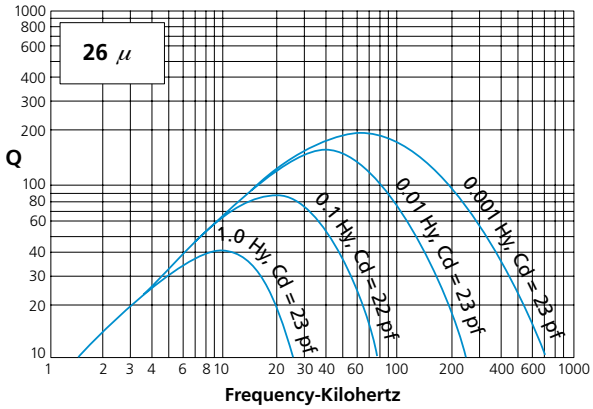
Nominal Permeability	Inductance Factor, mH +/- 8% for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	8	1.6	A-268008-2	HF-065014-2	—
26µ	15	0.86	A-267015-2	HF-065026-2	—
60µ	36	0.36	A-266036-2	HF-065060-2	MS-065060-2
75µ	43	0.30	—	—	MS-065075-2
90µ	52	0.25	—	—	MS-065090-2
125µ	72	0.18	A-281072-2	HF-065125-2	MS-065125-2
147µ	88	0.15	A-264088-2	HF-065147-2	—
160µ	92	0.14	A-285092-2	HF-065160-2	—
173µ	104	0.12	A-263104-2	—	—
205µ	123	0.11	A-262123-2	—	—
250µ	144	0.090	A-369144-2	—	—
300µ	173	0.074	A-391173-2	—	—

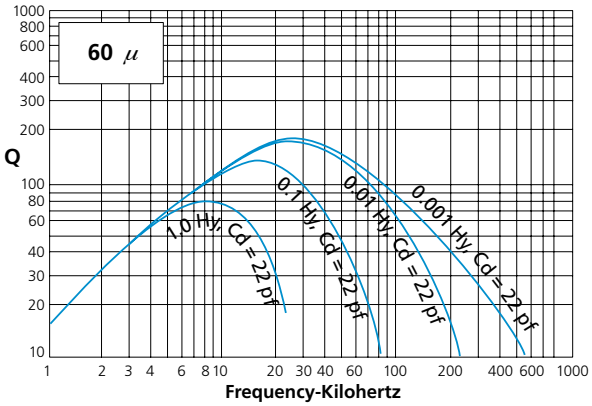
Heavy Film Magnet Wire Winding Data (Approximate)

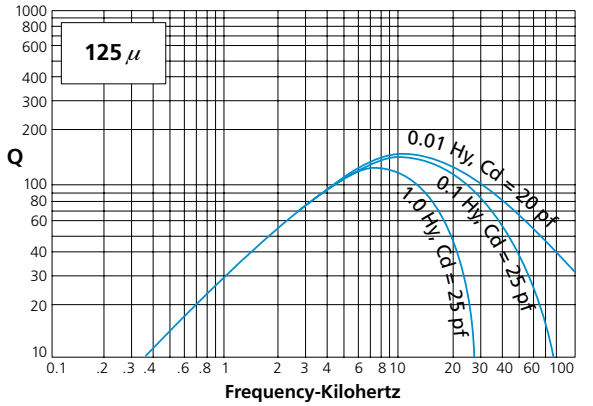
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
12	11	0.00150	10	0.00165	1.04
13	14	0.00234	11	0.00230	1.15
14	17	0.00365	13	0.00318	1.26
15	22	0.00569	15	0.00443	1.39
16	27	0.00889	17	0.00617	1.54
17	34	0.01375	19	0.00856	1.69
18	42	0.0215	21	0.0119	1.87
19	53	0.0333	24	0.0166	2.07
20	66	0.0516	27	0.0231	2.28
21	82	0.0802	31	0.0323	2.53
22	103	0.1261	35	0.0453	2.80
23	127	0.1937	39	0.0626	3.09
24	159	0.3026	44	0.0876	3.41
25	197	0.471	49	0.123	3.79
26	246	0.739	55	0.172	4.20
27	304	1.137	62	0.239	4.64
28	380	1.792	69	0.336	5.15
29	466	2.72	77	0.460	5.67

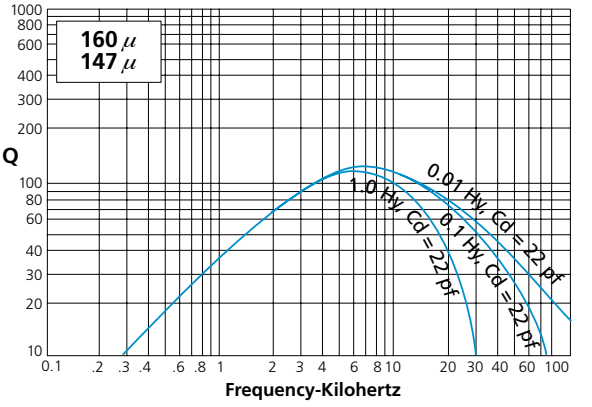
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
30	586	4.34	86	0.654	6.31
31	724	6.77	95	0.907	6.93
32	892	10.22	105	1.23	7.61
33	1117	16.18	118	1.74	8.45
34	1401	25.7	133	2.48	9.50
35	1756	40.6	149	3.49	10.6
36	2190	63.3	165	4.85	11.7
37	2703	96.2	183	6.61	12.9
38	3422	153.6	205	9.33	14.4
39	4469	261.0	233	13.8	16.3
40	5459	406.0	262	19.7	18.3
41	6819	621.0	292	26.9	20.3
42	8759	998.0	329	37.8	22.8
43	10814	1590.0	363	53.9	25.1

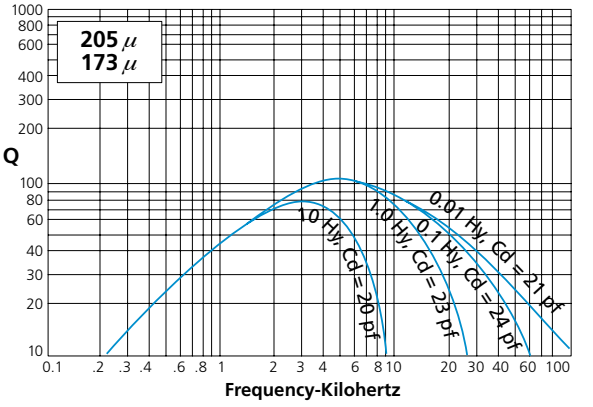




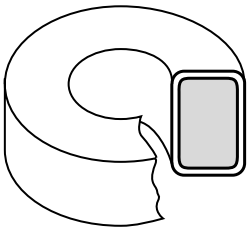








Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:

0.031 Approx. Radius (Typical)

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	0.680 in 17.27 mm	0.380 in 9.65 mm	0.250 in 6.35 mm
After Coating (White Enamel)	0.710 in Max. 18.03 mm Max.	0.355 in Min. 9.02 mm Min.	0.280 in Max. 7.11 mm Max.

Physical Specifications

Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.0360 in^2 0.232 cm^2	1.63 in 4.14 cm	0.05868 in^3 0.9605 cm^3	0.09898 in^2 0.63858 cm^2 126,025 cmil	0.0181 lbs 8.2 g	0.90 in 2.29 cm

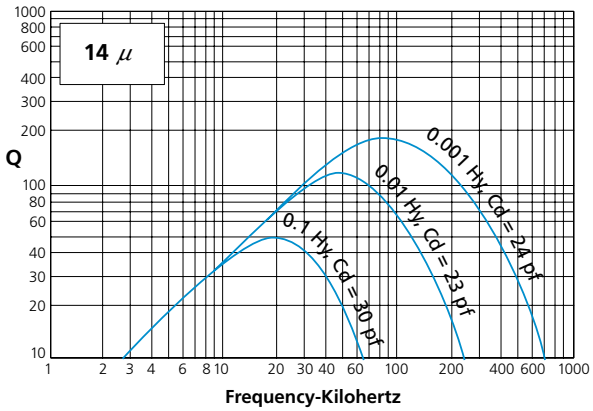
Electrical Specifications

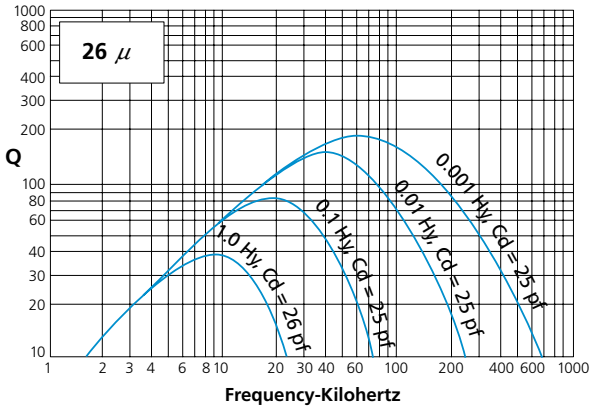
Nominal Permeability	Inductance Factor, mH +/- 8% for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	10	1.5	A-187010-2	HF-068014-2	—
26µ	19	0.80	A-188019-2	HF-068026-2	—
60µ	43	0.35	A-189043-2	HF-068060-2	MS-068060-2
75µ	53	0.29	—	—	MS-068075-2
90µ	64	0.24	—	—	MS-068090-2
125µ	89	0.17	A-190089-2	HF-068125-2	MS-068125-2
147µ	105	0.15	A-193105-2	HF-068147-2	—
160µ	114	0.13	A-559114-2	HF-068160-2	—
173µ	123	0.12	A-194123-2	—	—
205µ	146	0.10	A-205146-2	—	—
250µ	178	0.086	A-370178-2	—	—
300µ	214	0.071	A-392214-2	—	—

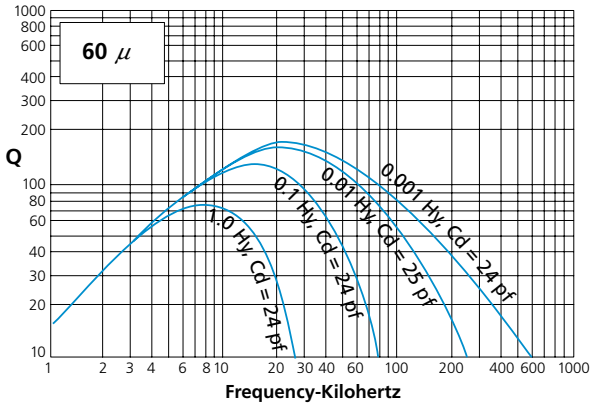
Heavy Film Magnet Wire Winding Data (Approximate)

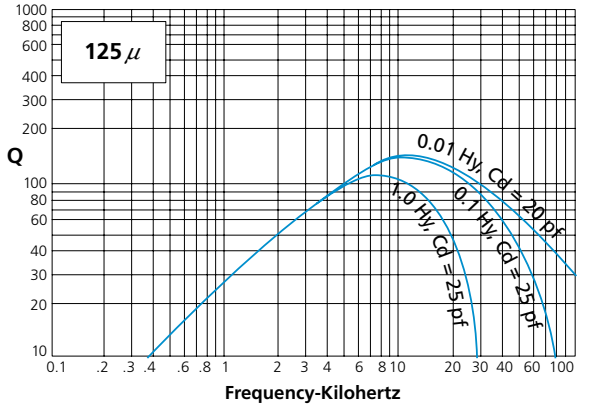
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
12	10	0.00140	9	0.00161	1.01
13	13	0.00219	10	0.00225	1.12
14	16	0.00342	12	0.00311	1.23
15	20	0.00533	14	0.00434	1.36
16	25	0.00834	16	0.00606	1.51
17	31	0.01292	18	0.00843	1.67
18	38	0.0202	20	0.0118	1.84
19	48	0.0314	23	0.0164	2.04
20	59	0.0486	26	0.0228	2.25
21	74	0.0756	29	0.0319	2.50
22	92	0.1189	33	0.0449	2.77
23	114	0.1828	37	0.0621	3.06
24	143	0.2860	41	0.0869	3.39
25	177	0.4450	47	0.122	3.76
26	221	0.6980	52	0.171	4.17
27	274	1.075	58	0.237	4.61
28	342	1.695	65	0.334	5.12
29	420	2.57	73	0.458	5.64

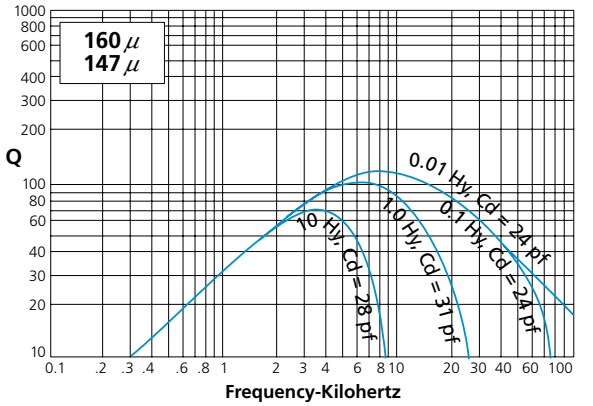
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
30	527	4.10	82	0.651	6.28
31	656	6.41	90	0.902	6.89
32	802	9.68	100	1.23	7.57
33	1005	15.3	111	1.73	8.41
34	1261	24.3	126	2.47	9.46
35	1580	38.5	141	3.48	10.5
36	1970	60.0	156	4.84	11.7
37	2432	91.2	173	6.59	12.9
38	3077	146	194	9.31	14.4
39	4020	248	220	13.8	16.2
40	4910	385	248	19.7	18.2
41	6134	589	276	26.8	20.2
42	7878	947	311	37.7	22.8
43	9726	1508	343	53.7	25.1
44	11345	2130	369	69.8	26.9

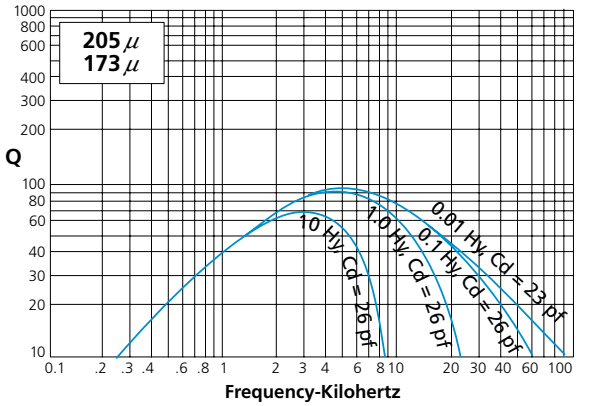




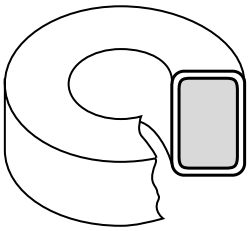








Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:

0.031 Approx. Radius (Typical)

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	0.800 in 20.32 mm	0.500 in 12.70 mm	0.250 in 6.35 mm
After Coating (Blue Epoxy)	0.830 in Max. 21.08 mm Max.	0.475 in Min. 12.07 mm Min.	0.280 in Max. 7.11 mm Max.

Physical Specifications

Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.035 in^2 0.226 cm^2	2.010 in 5.093 cm	0.07035 in^3 1.1510 cm^3	0.1772 in^2 1.1433 cm^2 225,625 cmil	0.023 lbs 10.0 g	0.90 in 2.29 cm

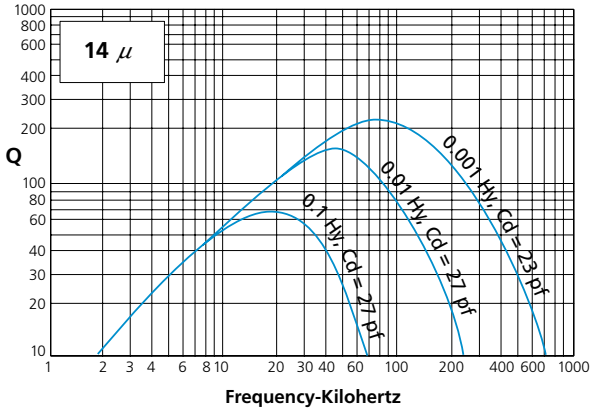
Electrical Specifications

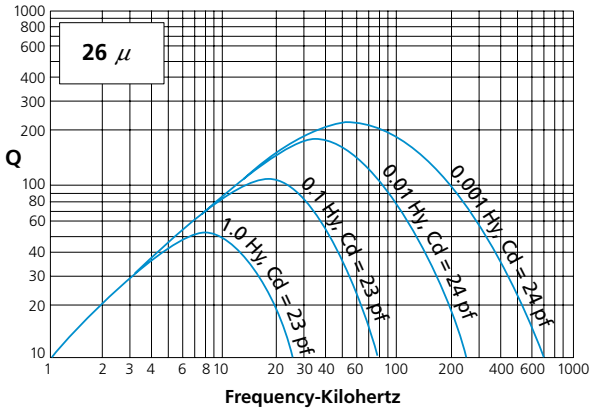
Nominal Permeability	Inductance Factor, mH +/- 8% for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	7.8	1.1	A-057008-2	HF-080014-2	—
26µ	14	0.60	A-511014-2	HF-080026-2	—
60µ	32	0.26	A-848032-2	HF-080060-2	MS-080060-2
75µ	41	0.21	—	—	MS-080075-2
90µ	49	0.17	—	—	MS-080090-2
125µ	68	0.12	A-206068-2	HF-080125-2	MS-080125-2
147µ	81	0.10	A-144081-2	HF-080147-2	—
150µ	83	0.10	A-241083-2	—	—
160µ	87	0.096	A-271087-2	HF-080160-2	—
173µ	96	0.088	A-173096-2	—	—
205µ	113	0.074	A-207113-2	—	—
250µ	136	0.062	A-371136-2	—	—
300µ	163	0.052	A-393163-2	—	—

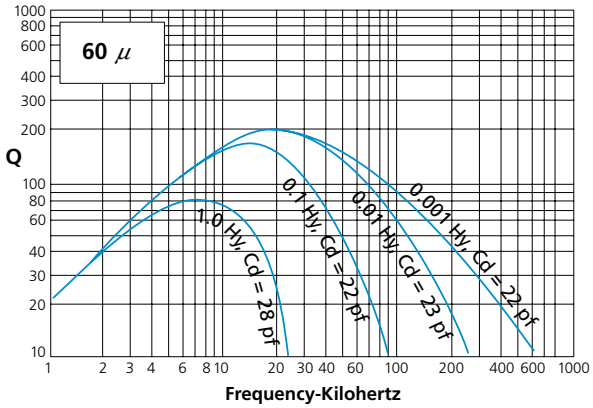
Heavy Film Magnet Wire Winding Data (Approximate)

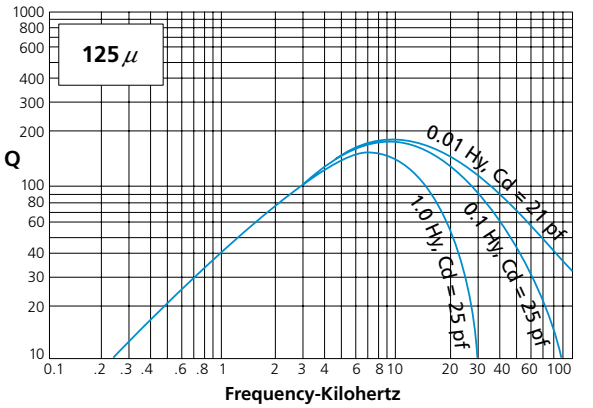
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
12	18	0.00254	13	0.00221	1.39
13	22	0.00395	15	0.00307	1.53
14	28	0.00614	17	0.00424	1.68
15	34	0.00954	19	0.00590	1.85
16	43	0.01488	22	0.00822	2.04
17	54	0.0230	25	0.0114	2.26
18	67	0.0358	28	0.0159	2.49
19	84	0.0556	32	0.0222	2.75
20	104	0.0860	35	0.0308	3.04
21	130	0.1337	40	0.0430	3.36
22	163	0.210	45	0.0604	3.73
23	201	0.323	50	0.0834	4.11
24	251	0.504	56	0.117	4.55
25	312	0.784	63	0.164	5.05
26	389	1.230	71	0.230	5.60

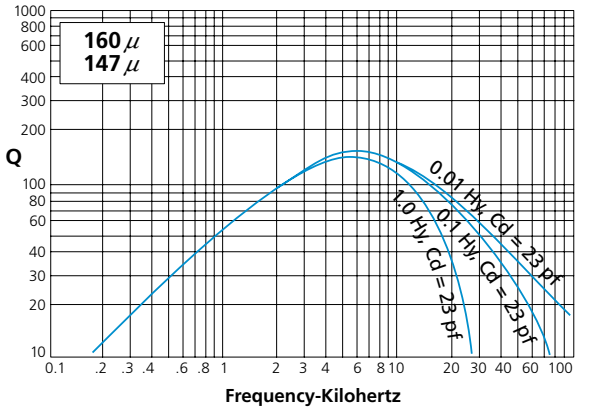
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
27	481	1.894	79	0.318	6.18
28	602	2.99	89	0.448	6.87
29	738	4.53	98	0.614	7.56
30	927	7.23	110	0.872	8.41
31	1154	11.29	122	1.21	9.24
32	1412	17.04	134	1.64	10.2
33	1768	27.0	150	2.32	11.3
34	2218	42.8	169	3.31	12.7
35	2779	67.7	189	4.66	14.1
36	3466	105.5	210	6.48	15.6
37	4279	160.4	233	8.82	17.2
38	5415	256.0	261	12.5	19.2
39	7073	436.0	296	18.4	21.7
40	8641	678.0	333	26.4	24.4
41	10793	1036.0	370	35.9	27.1

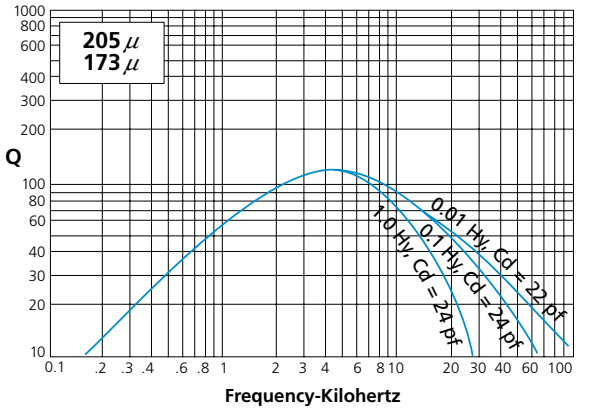




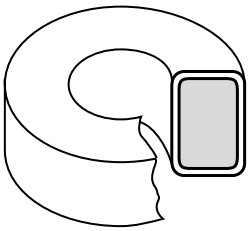








Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:

0.031 Approx. Radius (Typical)

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	0.900 in 22.86 mm	0.550 in 13.97 mm	0.300 in 7.62 mm
After Coating (Blue Epoxy)	0.930 in Max. 23.62 mm Max.	0.527 in Min. 13.39 mm Min.	0.330 in Max. 8.38 mm Max.

Physical Specifications

Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.0513 in^2 0.331 cm^2	2.233 in 5.671 cm	0.11455 in^3 1.8771 cm^3	0.21813 in^2 1.40727 cm^2 277,729 cmil	0.033 lbs 15 g	1.05 in 2.67 cm

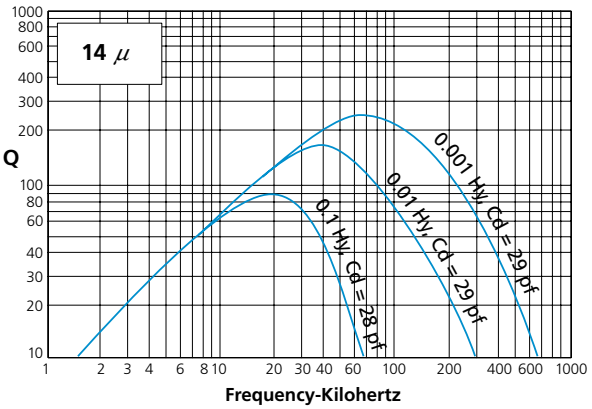
Electrical Specifications

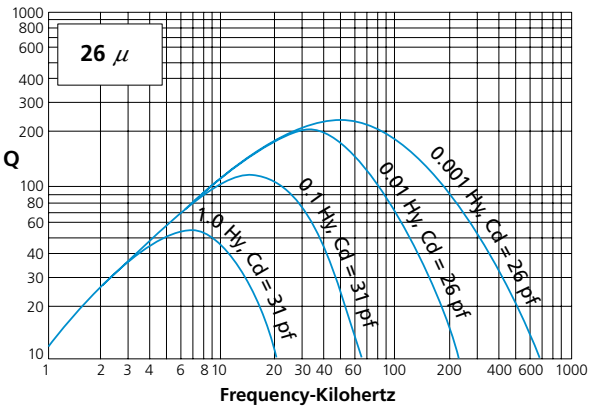
Nominal Permeability	Inductance Factor, mH +/- 8% for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	9.9	0.80	A-062010-2	HF-090014-2	—
26µ	19	0.42	A-060019-2	HF-090026-2	MS-090026-2
60µ	43	0.19	A-059043-2	HF-090060-2	MS-090060-2
75µ	54	0.15	—	—	MS-090075-2
90µ	65	0.12	—	—	MS-090090-2
125µ	90	0.089	A-310090-2	HF-090125-2	MS-090125-2
147µ	106	0.075	A-147106-2	HF-090147-2	—
160µ	115	0.070	A-300115-2	HF-090160-2	—
173µ	124	0.064	A-174124-2	—	—
205µ	147	0.054	A-208147-2	—	—
250µ	180	0.044	A-372180-2	—	—
300µ	216	0.037	A-394216-2	—	—

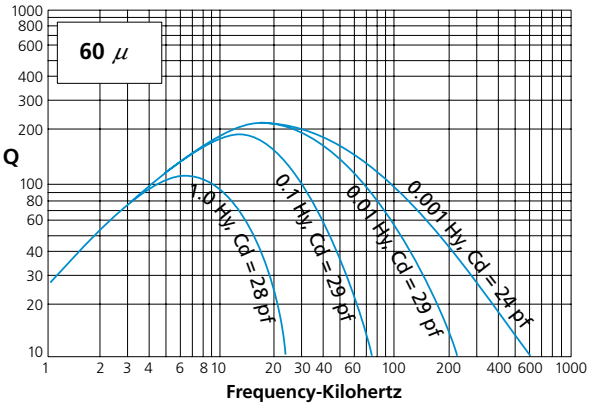
Heavy Film Magnet Wire Winding Data (Approximate)

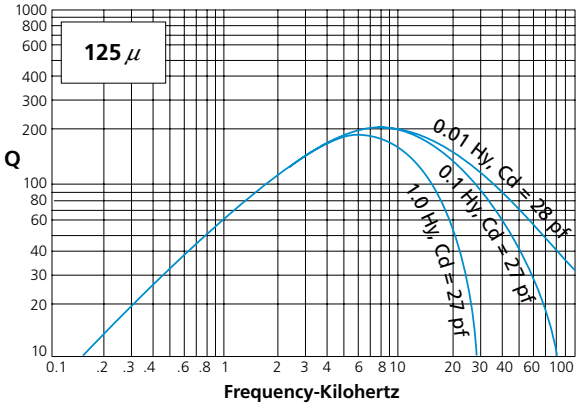
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
12	21	0.00355	15	0.00276	1.74
13	27	0.00552	17	0.00384	1.92
14	34	0.00859	19	0.00532	2.11
15	42	0.01335	22	0.00742	2.33
16	53	0.0208	25	0.0104	2.58
17	66	0.0322	28	0.0144	2.85
18	82	0.0503	31	0.0202	3.16
19	102	0.0782	35	0.0281	3.50
20	127	0.1211	40	0.0392	3.87
21	158	0.1884	45	0.0548	4.29
22	198	0.297	50	0.0771	4.76
23	246	0.456	56	0.107	5.26
24	306	0.713	63	0.150	5.83
25	381	1.110	71	0.210	6.48
26	475	1.744	79	0.295	7.19
27	587	2.69	88	0.409	7.95
28	734	4.24	99	0.577	8.84
29	901	6.44	109	0.791	9.74

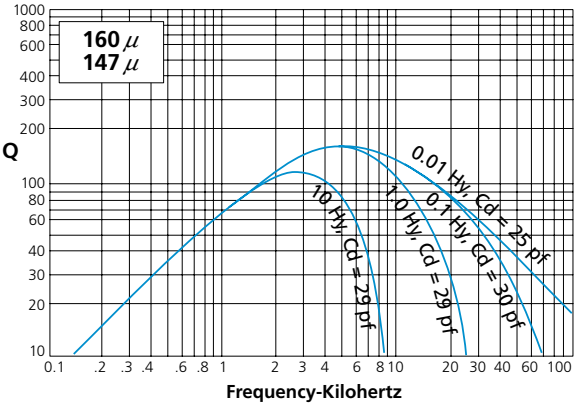
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
30	1132	10.28	122	1.12	10.8
31	1408	16.07	135	1.56	11.9
32	1723	24.3	149	2.12	13.1
33	2158	38.4	166	3.00	14.6
34	2707	61.0	188	4.28	16.4
35	3391	96.5	210	6.03	18.2
36	4229	150.6	234	8.39	20.2
37	5221	229.0	259	11.4	22.3
38	6608	366.0	289	16.1	24.9
39	8630	623.0	328	23.9	28.2
40	10543	968.0	370	34.2	31.7

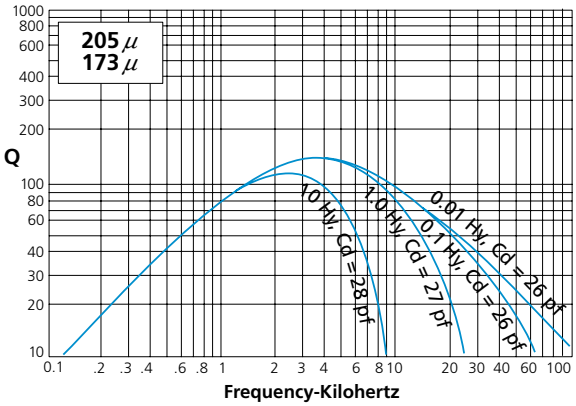




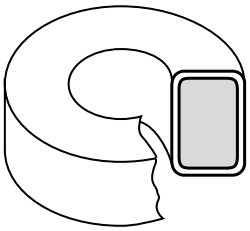








Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:

0.031 Approx. Radius (Typical)

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	0.928 in 23.57 mm	0.567 in 14.40 mm	0.350 in 8.89 mm
After Coating (Blue Epoxy)	0.956 in Max. 24.28 mm Max.	0.542 in Min. 13.77 mm Min.	0.382 in Max. 9.70 mm Max.

Physical Specifications

Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.0610 in^2 0.388 cm^2	2.32 in 5.88 cm	0.1415 in^3 2.2814 cm^3	0.2307 in^2 1.4885 cm^2 293,764 cmil	0.044 lbs 20 g	1.44 in 3.66 cm

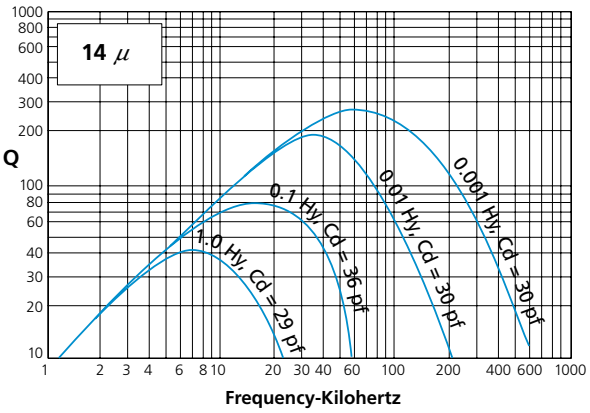
Electrical Specifications

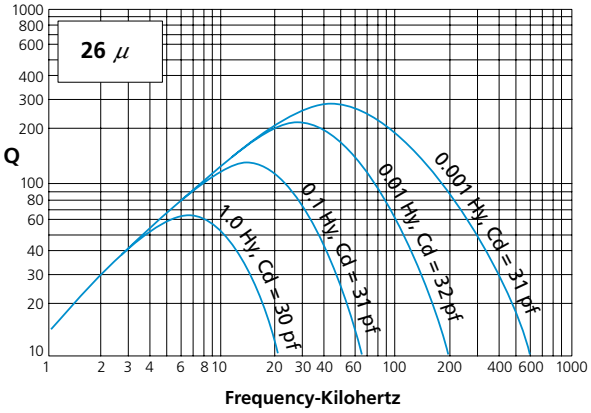
Nominal Permeability	Inductance Factor, mH +/- 8% for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	12	0.70	A-439012-2	HF-092014-2	—
26µ	22	0.38	A-440022-2	HF-092026-2	MS-092026-2
60µ	51	0.16	A-441051-2	HF-092060-2	MS-092060-2
75µ	63	0.13	—	—	MS-092075-2
90µ	76	0.11	—	—	MS-092090-2
125µ	105	0.080	A-442105-2	HF-092125-2	MS-092125-2
147µ	124	0.067	A-443124-2	HF-092147-2	—
160µ	135	0.062	A-444135-2	HF-092160-2	—
173µ	146	0.057	A-445146-2	—	—
205µ	173	0.048	A-272173-2	—	—
250µ	211	0.040	A-446211-2	—	—
300µ	253	0.033	A-447253-2	—	—

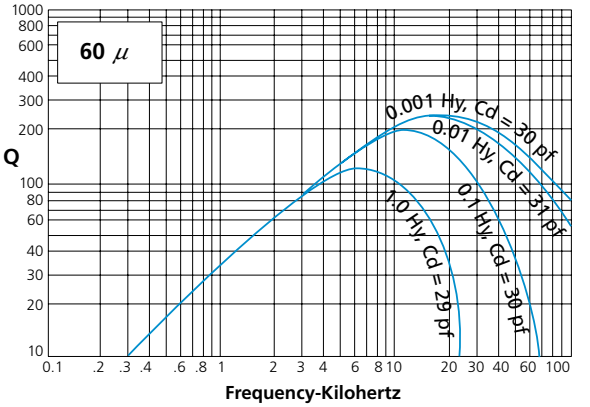
Heavy Film Magnet Wire Winding Data (Approximate)

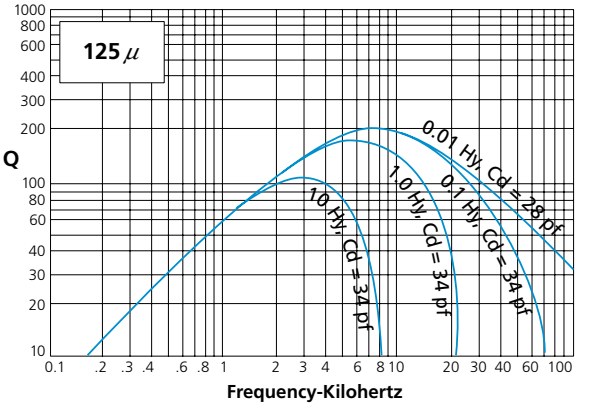
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
12	23	0.00411	15	0.00307	1.94
13	28	0.00639	17	0.00429	2.14
14	36	0.00996	20	0.00595	2.36
15	43	0.01497	22	0.00832	2.62
16	56	0.0242	25	0.0116	2.90
17	69	0.0375	29	0.0162	3.21
18	87	0.0585	32	0.0227	3.56
19	103	0.0871	36	0.0318	3.95
20	135	0.1413	41	0.0443	4.37
21	161	0.211	46	0.0620	4.85
22	210	0.346	52	0.0874	5.39
23	260	0.533	58	0.1210	5.96
24	325	0.834	65	0.170	6.61
25	404	1.299	73	0.238	7.36
26	504	2.04	81	0.336	8.18
27	623	3.15	91	0.465	9.05
28	778	4.97	101	0.657	10.1
29	955	7.55	112	0.901	11.1

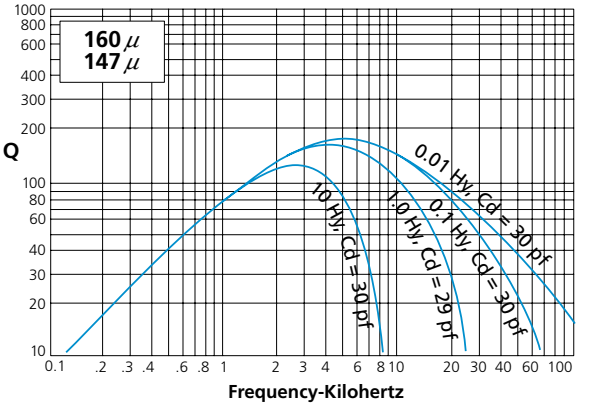
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
30	1200	12.06	126	1.28	12.4
31	1492	18.86	139	1.78	13.6
32	1827	28.5	154	2.42	15.0
33	2288	45.1	171	3.42	16.6
34	2870	71.7	194	4.89	18.7
35	3596	113.4	216	6.88	20.8
36	4484	177.0	240	9.58	23.1
37	5536	269.0	266	13.1	25.5
38	7006	430.0	298	18.5	28.5
39	9151	733.0	338	27.3	32.2
40	11179	1139.0	380	39.1	36.2

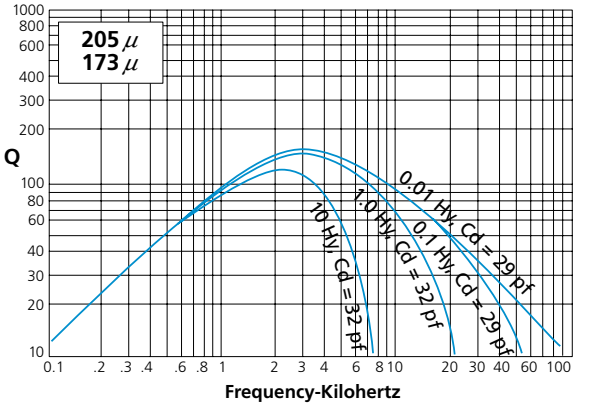




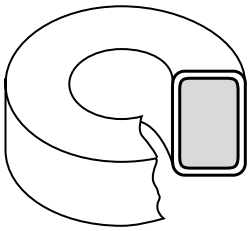








Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:

0.063 Approx. Radius (Typical)

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	1.060 in 26.92 mm	0.580 in 14.73 mm	0.340 in 8.64 mm
After Coating (Blue Epoxy)	1.090 in Max. 27.69 mm Max.	0.555 in Min. 14.10 mm Min.	0.3.72 in Max. 9.45 mm Max.

Physical Specifications

Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.07699 in^2 0.49671 cm^2	2.501 in 6.352 cm	0.1925 in^3 3.1551 cm^3	0.2419 in^2 1.5608 cm^2 308,025 cmil	0.060 lbs 27 g	1.25 in 3.25 cm

Electrical Specifications

Nominal Permeability	Inductance Factor, mH +/- 8% for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	13.8	0.64	A-676014-2	HF-107014-2	—
26µ	25.5	0.34	A-677026-2	HF-107026-2	MS-107026-2
60µ	59.0	0.15	A-678059-2	HF-107060-2	MS-107060-2
75µ	73.7	0.12	—	—	MS-107075-2
90µ	88.4	0.10	—	—	MS-107090-2
125µ	123	0.072	A-679123-2	HF-107125-2	MS-107125-2
147µ	145	0.061	A-680145-2	HF-107147-2	—
160µ	157	0.056	A-681157-2	HF-107160-2	—
173µ	170	0.052	A-330170-2	—	—
200µ	197	0.045	A-682197-2	—	—
250µ	246	0.036	A-683246-2	—	—
300µ	295	0.030	A-684295-2	—	

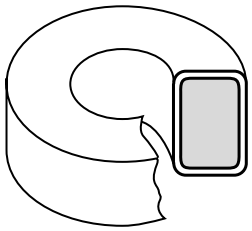
Heavy Film Magnet Wire Winding Data (Approximate)

AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
12	24	0.00461	16	0.00325	2.05
13	30	0.00719	18	0.00454	2.27
14	37	0.0112	20	0.00630	2.50
15	47	0.0175	23	0.00881	2.77
16	58	0.0274	26	0.0123	3.07
17	73	0.0425	29	0.0172	3.40
18	91	0.0666	33	0.0241	3.77
19	113	0.104	37	0.0337	4.19
20	141	0.161	42	0.0470	4.64
21	176	0.252	47	0.0658	5.15
22	220	0.396	53	0.0928	5.73
23	273	0.611	59	0.129	6.33
24	340	0.958	66	0.180	7.03
25	423	1.49	74	0.253	7.83
26	528	2.35	83	0.357	8.70
27	652	3.63	93	0.495	9.63
28	815	5.73	104	0.699	10.7
29	1000	8.72	115	0.959	11.8

AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
30	1257	13.9	129	1.36	13.2
31	1563	21.8	142	1.89	14.5
32	1914	33.0	157	2.58	15.9
33	2396	52.3	175	3.64	17.7
34	3006	83.1	198	5.21	19.9
35	3767	132	221	7.33	22.2
36	4697	205	246	10.2	24.6
37	5798	313	272	13.9	27.2
38	7340	500	305	19.7	30.3
39	9590	851	346	29.1	34.3
40	11700	1320	389	41.6	38.6

Curves are currently not available. Please contact our Powder Core Application Engineer for curve information at 1-800-545-4578.

Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:

0.063 Approx. Radius (Typical)

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	1.060 in 26.92 mm	0.580 in 14.73 mm	0.440 in 11.18 mm
After Coating (Blue Epoxy)	1.090 in Max. 27.69 mm Max.	0.555 in Min. 14.10 mm Min.	0.472 in Max. 11.99 mm Max.

Physical Specifications

Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.1014 in^2 0.654 cm^2	2.501 in 6.352 cm	.2536 in^3 4.154 cm^3	0.2419 in^2 1.5608 cm^2 308,025 cmil	0.080 lbs 36 g	1.46 in 3.71 cm

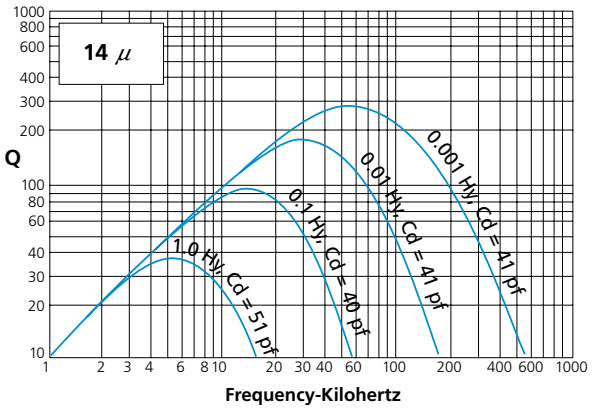
Electrical Specifications

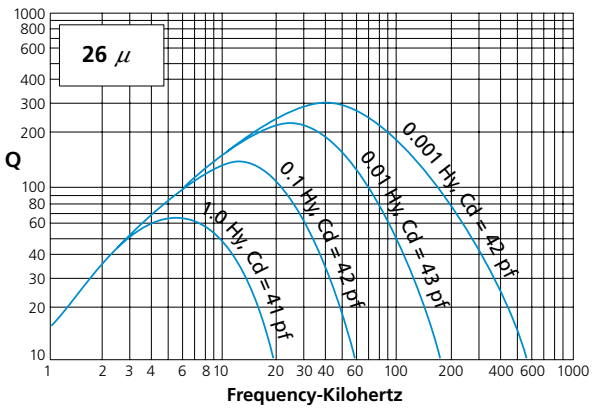
Nominal Permeability	Inductance Factor, mH +/- 8% for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	18	0.55	A-068018-2	HF-106014-2	—
26µ	32	0.31	A-066032-2	HF-106026-2	MS-106026-2
60µ	75	0.133	A-894075-2	HF-106060-2	MS-106060-2
75µ	94	0.106	—	—	MS-106075-2
90µ	113	0.088	—	—	MS-106090-2
125µ	157	0.063	A-930157-2	HF-106125-2	MS-106125-2
147µ	185	0.054	A-145185-2	HF-106147-2	—
160µ	201	0.050	A-302201-2	HF-106160-2	—
173µ	217	0.046	A-175217-2	—	—
205µ	257	0.039	A-209257-2	—	—
250µ	314	0.032	A-373314-2	—	—
300µ	377	0.026	A-396377-2	—	—

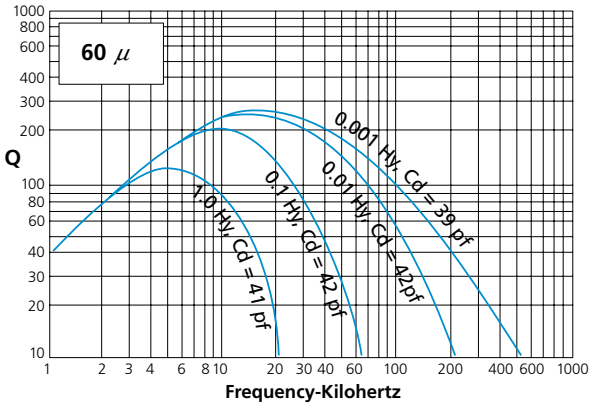
Heavy Film Magnet Wire Winding Data (Approximate)

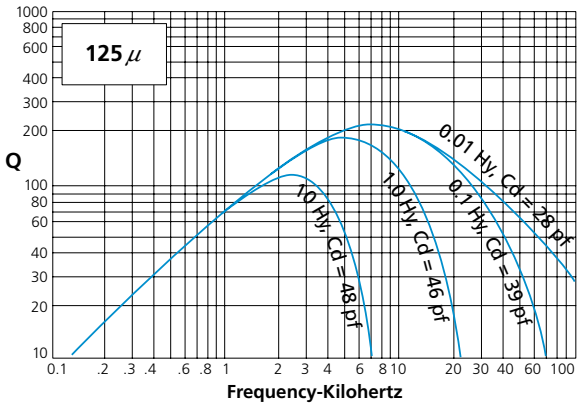
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
12	24	0.00526	16	0.00367	2.31
13	30	0.00820	18	0.00514	2.57
14	37	0.01281	20	0.00715	2.83
15	47	0.01997	23	0.0100	3.15
16	58	0.0313	26	0.0141	3.50
17	73	0.0485	29	0.0197	3.89
18	91	0.0760	33	0.0276	4.32
19	113	0.1183	37	0.0387	4.81
20	141	0.1839	42	0.0541	5.34
21	176	0.287	47	0.0759	5.94
22	220	0.452	53	0.107	6.61
23	273	0.697	59	0.149	7.32
24	340	1.093	66	0.209	8.13
25	423	1.704	74	0.294	9.07
26	528	2.68	83	0.414	10.1
27	652	4.14	93	0.575	11.2
28	815	6.54	104	0.812	12.4
29	1000	9.95	115	1.11	13.7

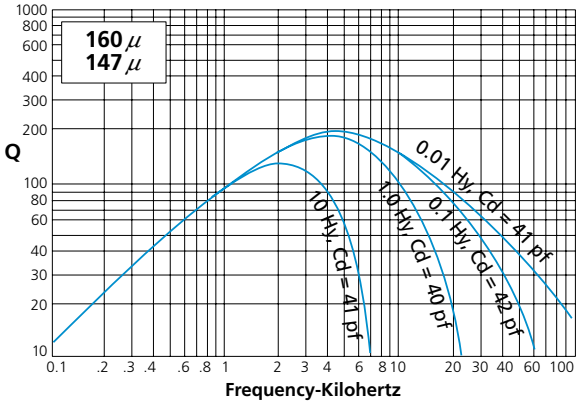
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
30	1257	15.90	129	1.59	15.3
31	1563	24.9	142	2.21	16.8
32	1914	37.6	157	3.00	18.5
33	2396	59.7	175	4.24	20.6
34	3006	94.8	198	6.07	23.2
35	3767	150.1	221	8.55	25.9
36	4697	234.0	246	11.9	28.7
37	5798	357.0	272	16.2	31.7
38	7339	570.0	305	22.9	35.4
39	9585	971.0	346	33.9	40.1
40	11709	1510.0	389	48.6	45.1

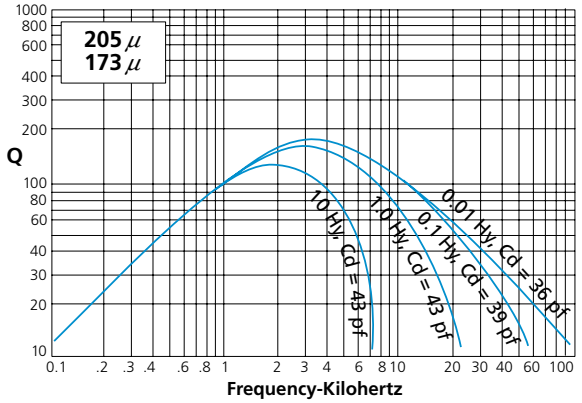




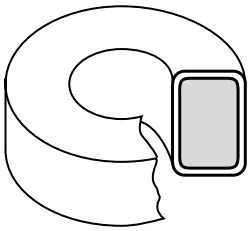








Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:

0.063 Approx. Radius (Typical)

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	1.300 in 33.02 mm	0.785 in 19.94 mm	0.345 in 8.76 mm
After Coating (Blue Epoxy)	1.332 in Max. 33.83 mm Max.	0.760 in Min. 19.30 mm Min.	0.382 in Max. 9.70 mm Max.

Physical Specifications

Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.08543 in^2 0.55116 cm^2	3.207 in 8.147 cm	0.2740 in^3 4.4902 cm^3	0.4537 in^2 2.9267 cm^2 577,600 cmil	0.086 lbs 39 g	1.30 in 3.30 cm

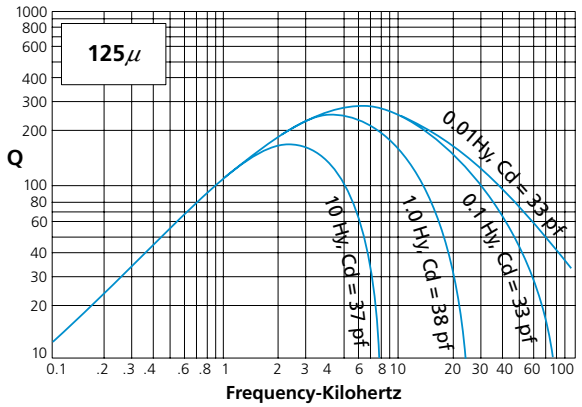
Electrical Specifications

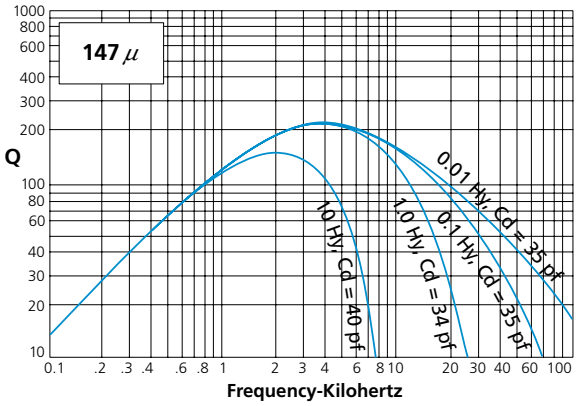
Nominal Permeability	Inductance Factor, mH +/- 8% for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	11.9	0.39	A-640012-2	HF-131014-2	—
26µ	22.1	0.21	A-641022-2	HF-131026-2	MS-131026-2
60µ	51.0	0.090	A-642051-2	HF-131060-2	MS-131060-2
75µ	63.8	0.072	—	—	MS-131075-2
90µ	76.5	0.060	—	—	MS-131090-2
125µ	109	0.042	A-197109-2	HF-131125-2	MS-131125-2
147µ	129	0.036	A-162129-2	HF-131147-2	—
160µ	136	0.034	A-643136-2	HF-131160-2	—
173µ	151	0.031	A-166151-2	—	—
205µ	180	0.026	A-210180-2	—	—
250µ	213	0.021	A-644213-2	—	—

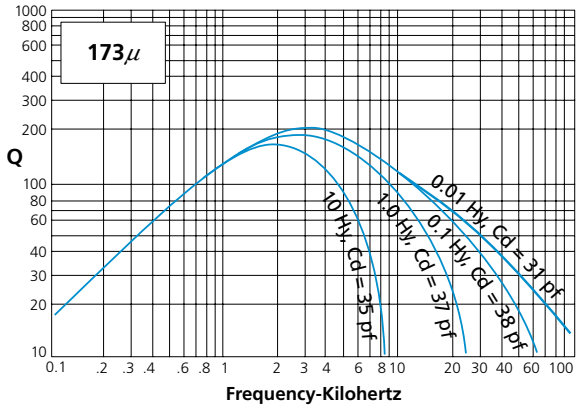
Heavy Film Magnet Wire Winding Data (Approximate)

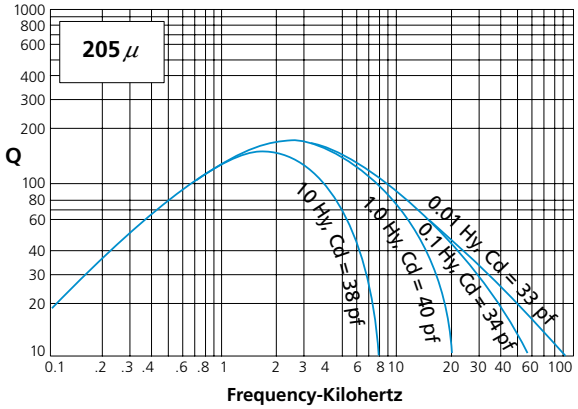
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
12	44	0.00892	23	0.00472	2.97
13	55	0.01384	26	0.00658	3.29
14	69	0.0215	29	0.00912	3.61
15	86	0.0335	32	0.0127	4.01
16	108	0.0523	37	0.0178	4.43
17	135	0.0809	41	0.0248	4.91
18	169	0.1264	46	0.0347	5.44
19	210	0.197	52	0.0486	6.03
20	262	0.305	58	0.0676	6.68
21	326	0.475	66	0.0947	7.42
22	408	0.748	74	0.134	8.24
23	505	1.152	82	0.185	9.11
24	630	1.803	92	0.260	10.1
25	783	2.81	103	0.364	11.3
26	978	4.42	115	0.513	12.5

AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
27	1209	6.82	128	0.712	13.8
28	1511	10.77	143	1.00	15.4
29	1854	16.36	159	1.38	17.0
30	2328	26.1	178	1.96	18.9
31	2897	40.9	196	2.72	20.8
32	3546	61.8	216	3.70	22.9
33	4440	97.9	241	5.23	25.4
34	5570	155.6	273	7.48	28.6
35	6979	246	304	10.5	31.8
36	8703	384	338	14.7	35.3
37	10744	585	374	20.0	39.0

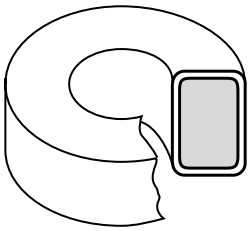








Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS

0.063 Approx. Radius (Typical)

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	1.300 in 33.02 mm	0.785 in 19.94 mm	0.420 in 10.67 mm
After Coating (Blue Epoxy)	1.332 in Max. 33.83 mm Max.	0.760 in Min. 19.30 mm Min.	0.457 in Max. 11.61 mm Max.

Physical Specifications

Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.1042 in^2 0.672 cm^2	3.207 in 8.147 cm	0.3345 in^3 5.4768 cm^3	0.4537 in^2 2.9267 cm^2 577,600 cmil	0.106 lbs 47 g	1.47 in 3.72 cm

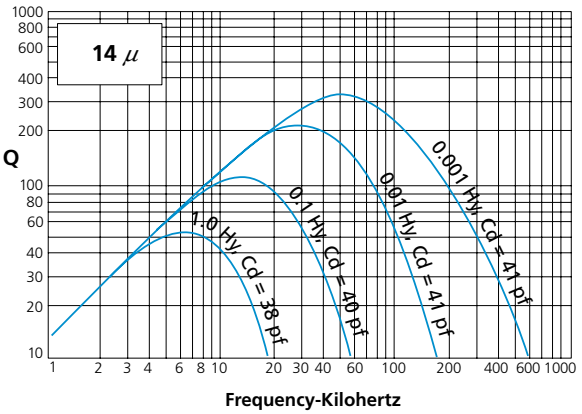
Electrical Specifications

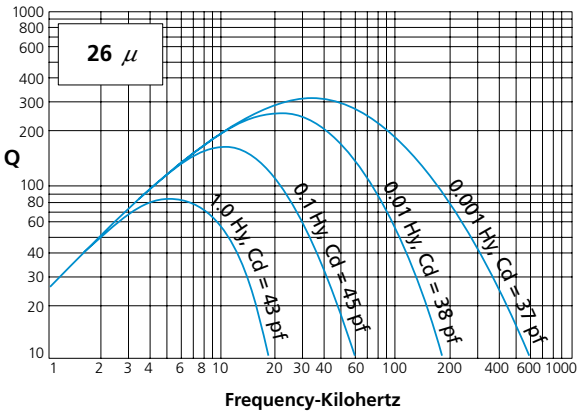
Nominal Permeability	Inductance Factor, mH +/- 8% for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	14	0.36	A-344014-2	HF-130014-2	—
26µ	28	0.18	A-298028-2	HF-130026-2	MS-130026-2
60µ	61	0.083	A-291061-2	HF-130060-2	MS-130060-2
75µ	76	0.066	—	—	MS-130075-2
90µ	91	0.055	—	—	MS-130090-2
125µ	127	0.040	A-548127-2	HF-130125-2	MS-130125-2
147µ	150	0.034	A-148150-2	HF-130147-2	—
160µ	163	0.031	A-303163-2	HF-130160-2	—
173µ	176	0.029	A-176176-2	—	—
205µ	208	0.024	A-211208-2	—	—
250µ	254	0.020	A-374254-2	—	—

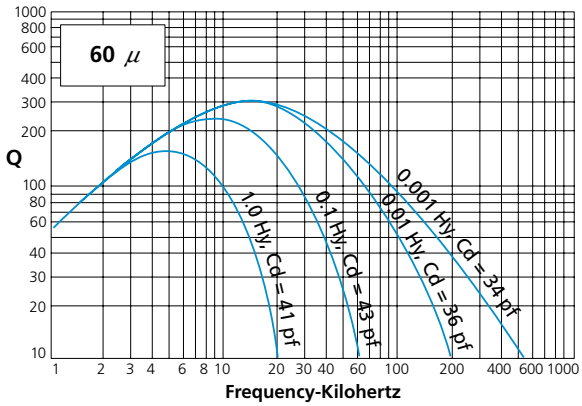
Heavy Film Magnet Wire Winding Data (Approximate)

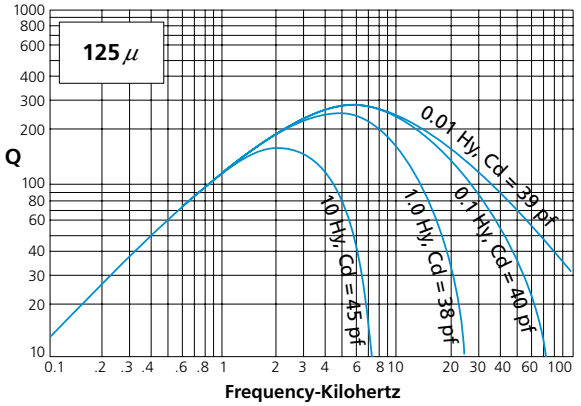
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
12	44	0.00989	23	0.00517	3.25
13	55	0.01538	26	0.00722	3.61
14	69	0.0240	29	0.0100	3.97
15	86	0.0373	32	0.0140	4.41
16	108	0.0584	37	0.0197	4.89
17	135	0.0904	41	0.0274	5.42
18	169	0.1414	46	0.0384	6.02
19	210	0.220	52	0.0538	6.69
20	262	0.342	58	0.0750	7.41
21	326	0.533	66	0.105	8.24
22	408	0.840	74	0.148	9.16
23	505	1.294	82	0.206	10.1
24	630	2.030	92	0.289	11.3
25	783	3.16	103	0.406	12.5
26	978	4.98	115	0.572	13.9
27	1209	7.68	128	0.794	15.4
28	1511	12.14	143	1.12	17.2
29	1854	18.45	159	1.54	18.9

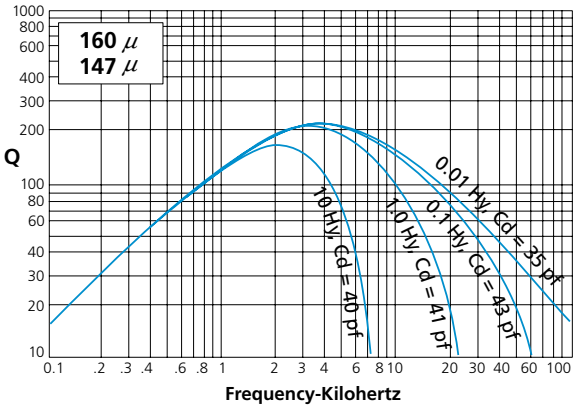
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
30	2328	29.5	178	2.19	21.1
31	2897	46.2	196	3.04	23.2
32	3546	69.8	216	4.14	25.6
33	4440	110.6	241	5.85	28.4
34	5570	175.9	273	8.37	32.0
35	6979	278	304	11.8	35.6
36	8703	434	338	16.4	39.6
37	10744	661	374	22.4	43.7

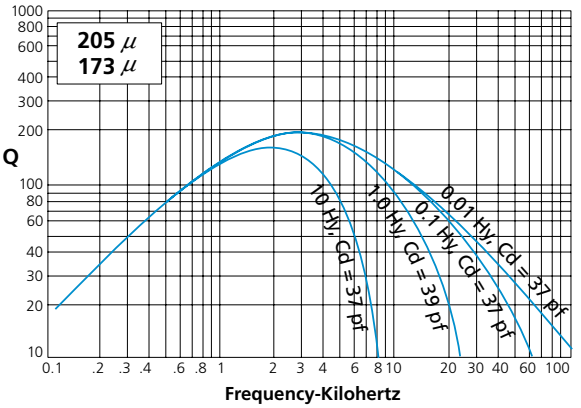




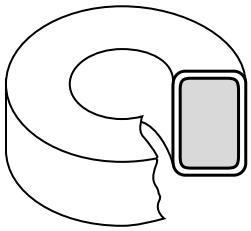








Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:

0.063 Approx. Radius (Typical)

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	1.300 in 33.02 mm	0.785 in 19.94 mm	0.440 in 11.18 mm
After Coating (Blue Epoxy)	1.332 in Max. 33.83 mm Max.	0.760 in Min. 19.30 mm Min.	0.472 in Max. 11.99 mm Max.

Physical Specifications

Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.1082 in^2 0.6981 cm^2	3.207 in 8.147 cm	0.3470 in^3 5.6870 cm^3	0.4537 in^2 2.9267 cm^2 577,600 cmil	0.095 lbs 43 g	1.50 in 3.81 cm

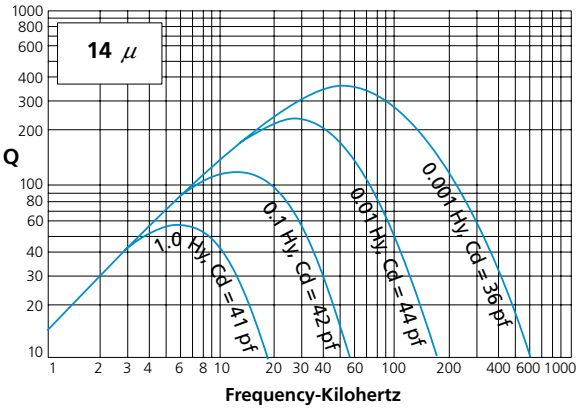
Electrical Specifications

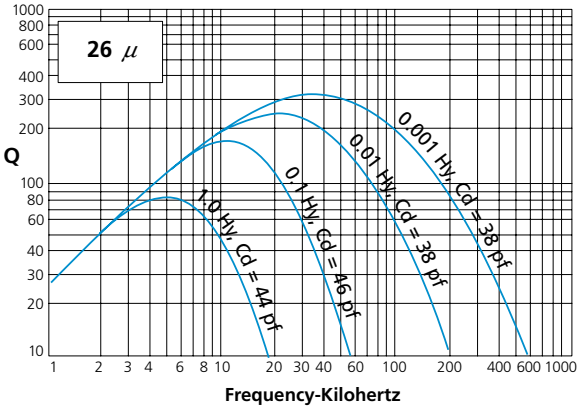
Nominal Permeability	Inductance Factor, mH +/- 8% for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	15	0.35	A-074015-2	HF-132014-2	—
26µ	28	0.19	A-073028-2	HF-132026-2	MS-132026-2
60µ	65	0.080	A-071065-2	HF-132060-2	MS-132060-2
75µ	80.8	0.064	—	—	MS-132075-2
90µ	96.9	0.054	—	—	MS-132090-2
125µ	135	0.039	A-645135-2	HF-132125-2	MS-132125-2
147µ	158	0.033	A-646158-2	HF-132147-2	—
160µ	172	0.030	A-647172-2	HF-132160-2	—
173µ	186	0.028	A-648186-2	—	—
200µ	215	0.024	A-649215-2	—	—
250µ	269	0.019	A-650269-2	—	—

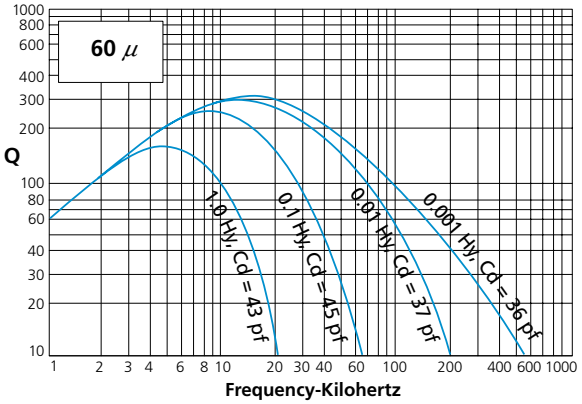
Heavy Film Magnet Wire Winding Data (Approximate)

AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
12	44	0.0101	23	0.00526	3.31
13	55	0.0157	26	0.00735	3.67
14	69	0.0245	29	0.0102	4.04
15	86	0.0381	32	0.0143	4.49
16	108	0.0596	37	0.0200	4.98
17	135	0.0924	41	0.0279	5.53
18	169	0.1446	46	0.0392	6.13
19	210	0.225	52	0.0548	6.82
20	262	0.350	58	0.0765	7.55
21	326	0.545	66	0.107	8.40
22	408	0.859	74	0.151	9.35
23	505	1.324	82	0.210	10.3
24	630	2.08	92	0.295	11.5
25	783	3.24	103	0.414	12.8
26	978	5.09	115	0.584	14.2
27	1209	7.86	128	0.811	15.8
28	1511	12.43	143	1.15	17.5
29	1854	18.89	159	1.57	19.3

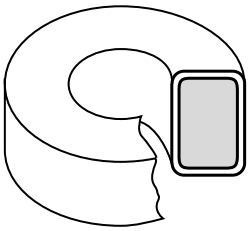
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
30	2328	30.2	178	2.24	21.6
31	2897	47.3	196	3.11	23.7
32	3546	71.4	216	4.23	26.1
33	4440	113.2	241	5.97	29.0
34	5570	180.1	273	8.55	32.7
35	6979	285.0	304	12.0	36.4
36	8703	445.0	338	16.8	40.4
37	10744	677.0	374	22.9	44.6







Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:

0.063 Approx. Radius (Typical)

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	1.350 in 34.29 mm	0.920 in 23.37 mm	0.350 in 8.89 mm
After Coating (Blue Epoxy)	1.382 in Max. 35.10 mm Max.	0.888 in Min. 22.56 mm Min.	0.387 in Max. 9.83 mm Max.

Physical Specifications

Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.0704 in^2 0.454 cm^2	3.523 in 8.948 cm	0.2485 in^3 4.0633 cm^3	0.6193 in^2 3.9956 cm^2 788,544 cmil	0.081 lbs 35 g	1.24 in 3.16 cm

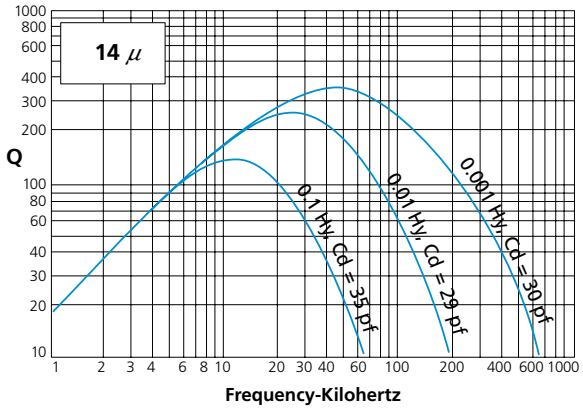
Electrical Specifications

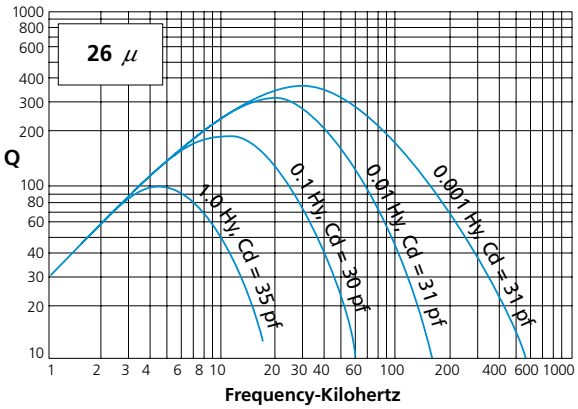
Nominal Permeability	Inductance Factor, mH +/- 8% for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	9	0.38	A-347009-2	HF-135014-2	—
26µ	16	0.20	A-346016-2	HF-135026-2	MS-135026-2
60µ	38	0.082	A-345038-2	HF-135060-2	MS-135060-2
75µ	47	0.066	—	—	MS-135075-2
90µ	56	0.055	—	—	MS-135090-2
125µ	79	0.040	A-585079-2	HF-135125-2	MS-135125-2
147µ	93	0.034	A-149093-2	HF-135147-2	—
160µ	101	0.031	A-304101-2	HF-135160-2	—
173µ	109	0.029	A-177109-2	—	—
205µ	130	0.024	A-212130-2	—	—

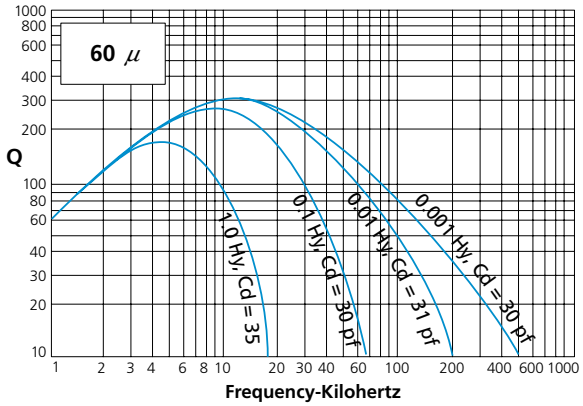
Heavy Film Magnet Wire Winding Data (Approximate)

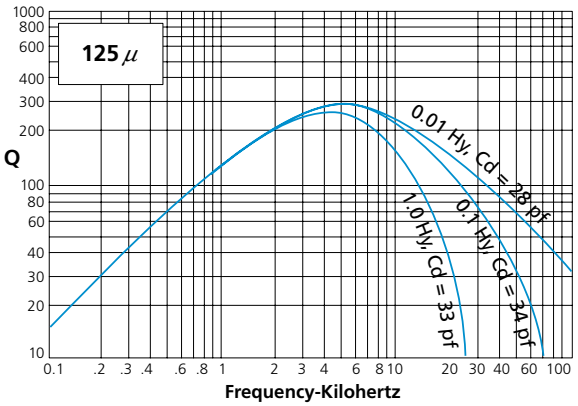
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
12	61	0.01185	27	0.00533	3.35
13	76	0.01836	30	0.00740	3.70
14	95	0.0285	34	0.0102	4.06
15	118	0.0443	38	0.0143	4.49
16	148	0.0691	43	0.0199	4.96
17	185	0.1068	49	0.0277	5.49
18	231	0.1667	55	0.0388	6.07
19	288	0.259	61	0.0541	6.73
20	358	0.402	69	0.0754	7.44
21	446	0.625	77	0.105	8.26
22	559	0.984	87	0.148	9.17
23	692	1.514	96	0.206	10.1
24	863	2.37	108	0.288	11.2
25	1073	3.69	121	0.404	12.5
26	1339	5.80	135	0.569	13.9
27	1655	8.95	150	0.789	15.3
28	2069	14.13	168	1.11	17.0
29	2539	21.5	186	1.53	18.8

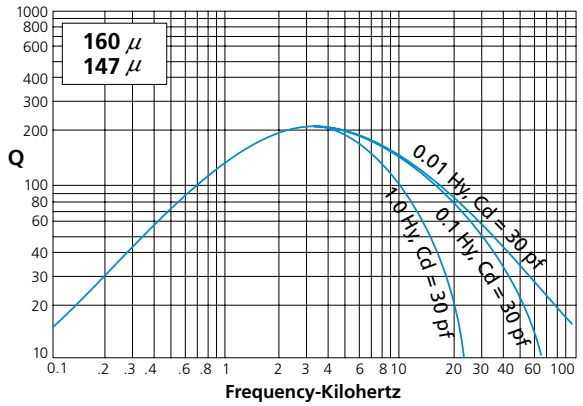
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
30	3188	34.3	208	2.17	20.9
31	3967	53.6	230	3.01	23.0
32	4856	81.0	253	4.10	25.3
33	6080	128.4	282	5.78	28.1
34	7627	204.0	319	8.27	31.7
35	9558	323.0	356	11.6	35.2
36	11918	503.0	396	16.2	39.1

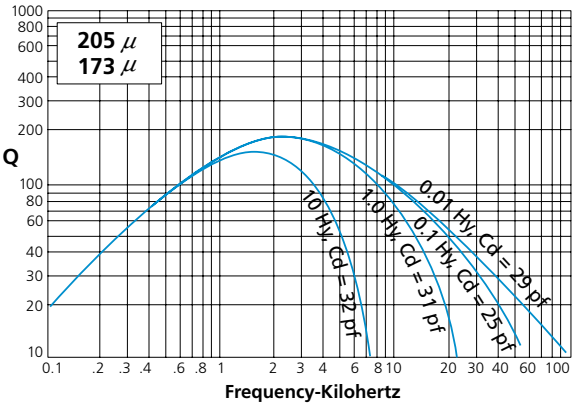




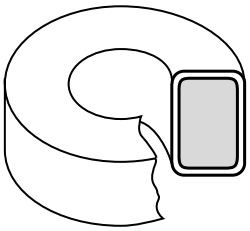








Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:

0.063 Approx. Radius (Typical)

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	1.410 in 35.81 mm	0.880 in 22.35 mm	0.412 in 10.46 mm
After Coating (Blue Epoxy)	1.442 in Max. 36.63 mm Max.	0.848 in Min. 21.54 mm Min.	0.444 in Max. 11.28 mm Max.

Physical Specifications

Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.1051 in^2 0.678 cm^2	3.54 in 8.98 cm	0.3721 in^3 6.0884 cm^3	0.5648 in^2 3.6438 cm^2 719,104 cmil	0.112 lbs 51 g	1.46 in 3.72 cm

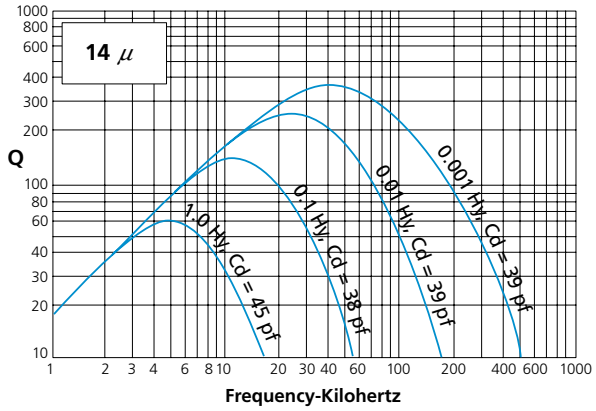
Electrical Specifications

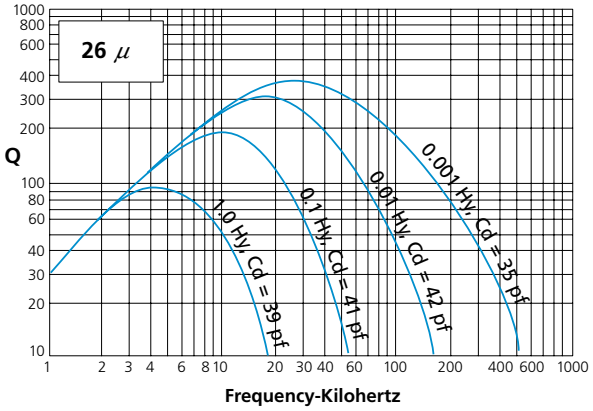
Nominal Permeability	Inductance Factor, mH +/- 8% for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	13	0.32	A-080013-2	HF-141014-2	—
26µ	24	0.17	A-078024-2	HF-141026-2	MS-141026-2
60µ	56	0.074	A-076056-2	HF-141060-2	MS-141060-2
75µ	70.2	0.060	—	—	MS-141075-2
90µ	84.3	0.050	—	—	MS-141090-2
125µ	117	0.035	A-324117-2	HF-141125-2	MS-141125-2
147µ	138	0.030	A-150138-2	HF-141147-2	—
160µ	150	0.028	A-305150-2	HF-141160-2	—
173µ	162	0.026	A-178162-2	—	—
205µ	192	0.022	A-213192-2	—	—

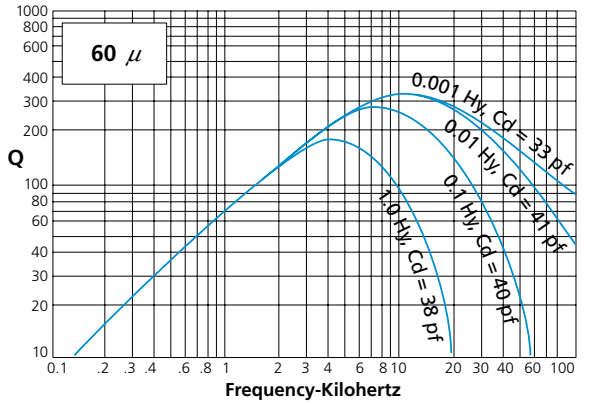
Heavy Film Magnet Wire Winding Data (Approximate)

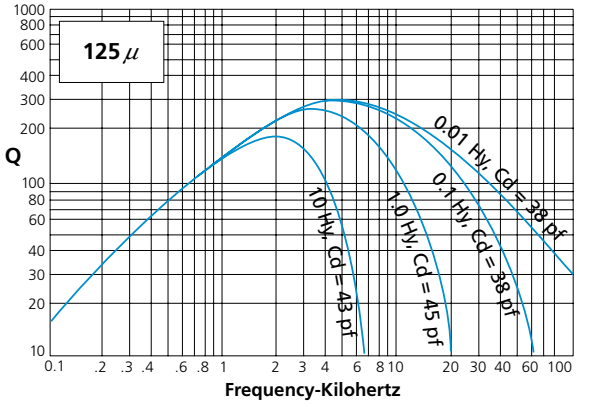
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
12	55	0.01241	25	0.00579	3.65
13	69	0.01927	29	0.00809	4.04
14	87	0.0300	32	0.0112	4.45
15	108	0.0467	37	0.0157	4.93
16	135	0.0730	41	0.0220	5.47
17	169	0.1131	46	0.0306	6.06
18	211	0.1768	52	0.0429	6.72
19	263	0.275	58	0.0600	7.46
20	327	0.427	65	0.0837	8.27
21	408	0.666	74	0.117	9.19
22	511	1.050	82	0.166	10.2
23	632	1.617	92	0.229	11.3
24	788	2.53	103	0.322	12.5
25	980	3.95	115	0.452	14.0
26	1223	6.22	129	0.637	15.5
27	1512	9.59	143	0.885	17.2
28	1890	15.16	160	1.25	19.1
29	2319	23.0	177	1.71	21.1

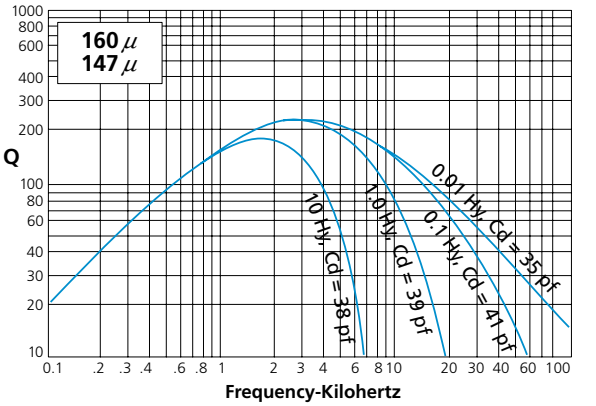
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
30	2913	36.8	199	2.44	23.5
31	3623	57.7	219	3.39	25.9
32	4435	87.1	242	4.61	28.5
33	5554	139.1	270	6.51	31.7
34	6967	220.0	305	9.32	35.7
35	8730	348.0	340	13.1	39.7
36	10886	543.0	378	18.3	44.0

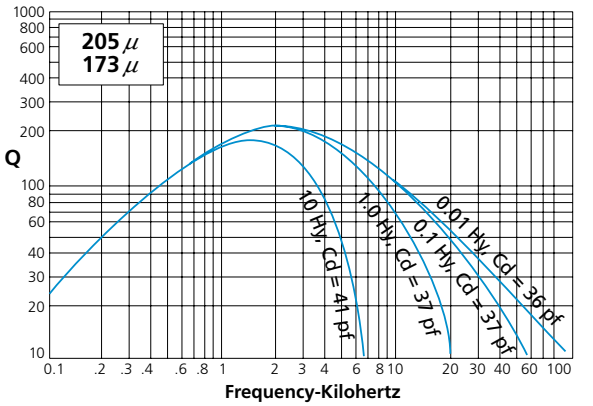




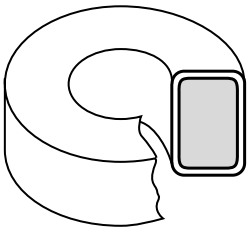








Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:

0.094 Approx. Radius (Typical)

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	1.570 in 39.88 mm	0.950 in 24.13 mm	0.570 in 14.48 mm
After Coating (Blue Epoxy)	1.602 in Max. 40.69 mm Max.	0.918 in Min. 23.32 mm Min.	0.605 in Max. 15.37 mm Max.

Physical Specifications

Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.1662 in^2 1.072 cm^2	3.877 in 9.848 cm	0.6449 in^3 10.5485 cm^3	0.6619 in^2 4.2702 cm^2 842,724 cmil	0.206 lbs 92 g	1.87 in 4.76 cm

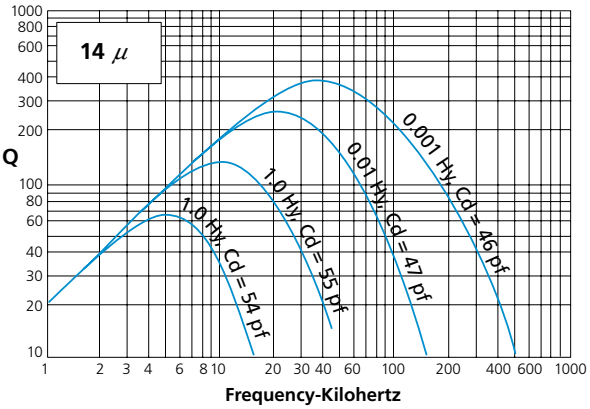
Electrical Specifications

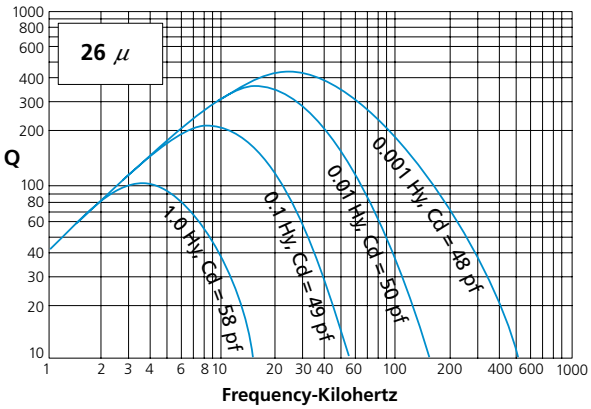
Nominal Permeability	Inductance Factor, mH +/- 8% for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	19	0.24	A-086019-2	HF-157014-2	—
26µ	35	0.13	A-085035-2	HF-157026-2	MS-157026-2
60µ	81	0.060	A-083081-2	HF-157060-2	MS-157060-2
75µ	101	0.045	—	—	MS-157075-2
90µ	121	0.038	—	—	MS-157090-2
125µ	168	0.027	A-254168-2	HF-157125-2	MS-157125-2
147µ	198	0.023	A-151198-2	HF-157147-2	—
160µ	215	0.021	A-306215-2	HF-157160-2	—
173µ	233	0.019	A-179233-2	—	—
205µ	276	0.016	A-214276-2	—	—

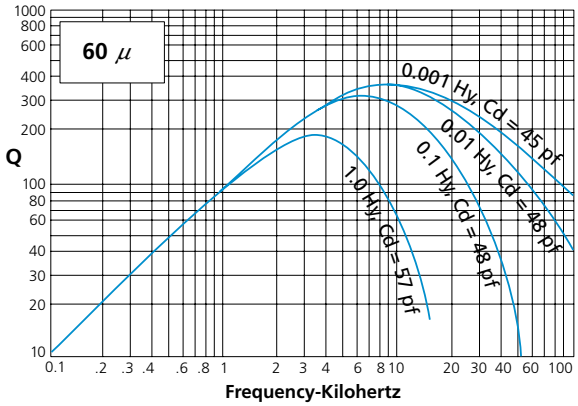
Heavy Film Magnet Wire Winding Data (Approximate)

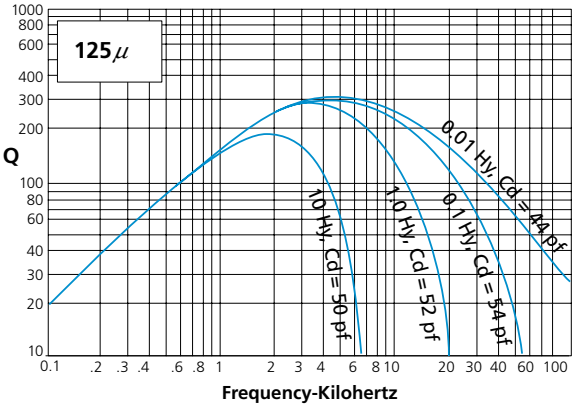
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
10	—	—	22	0.00389	3.89
11	—	—	25	0.00545	4.32
12	65	0.01803	28	0.00762	4.80
13	81	0.0281	31	0.0107	5.33
14	101	0.0438	35	0.0148	5.88
15	126	0.0683	40	0.0208	6.55
16	158	0.1071	45	0.0292	7.27
17	197	0.1662	50	0.0408	8.08
18	247	0.260	57	0.0574	8.98
19	307	0.406	64	0.0804	9.99
20	383	0.632	71	0.112	11.1
21	477	0.986	80	0.158	12.4
22	597	1.557	90	0.223	13.8
23	739	2.40	100	0.309	15.2
24	921	3.77	112	0.435	16.9
25	1145	5.88	125	0.611	18.9
26	1429	9.26	140	0.862	21.0
27	1767	14.31	155	1.20	23.3

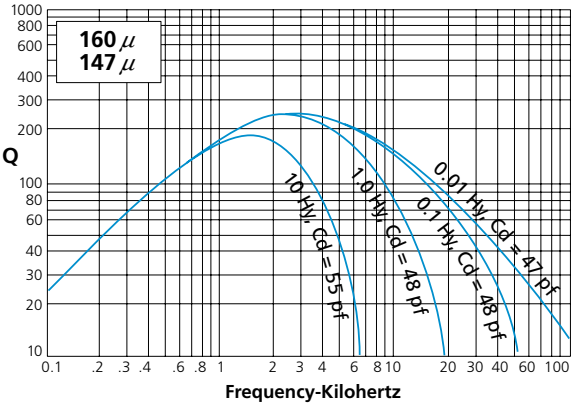
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
28	2209	22.6	174	1.69	25.9
29	2710	34.4	192	2.32	28.6
30	3404	55.1	215	3.31	31.9
31	4234	86.3	238	4.60	35.1
32	5183	130.4	262	6.26	38.7
33	6491	207.0	292	8.85	43.0
34	8142	329.0	330	12.7	48.5
35	10202	521.0	368	17.8	54.0

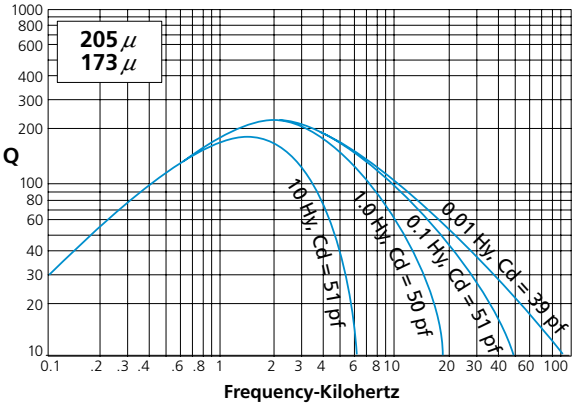




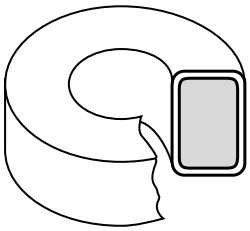








Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:

0.094 Approx. Radius (Typical)

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	1.840 in 46.74 mm	0.950 in 24.13 mm	0.710 in 18.03 mm
After Coating (Blue Epoxy)	1.875 in Max. 47.63 mm Max.	0.918 in Min. 23.32 mm Min.	0.745 in Max. 18.92 mm Max.

Physical Specifications

Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.308 in^2 1.990 cm^2	4.230 in 10.743 cm	1.303 in^3 21.373 cm^3	0.6619 in^2 4.2702 cm^2 842,724 cmil	0.396 lbs 180 g	2.42 in 6.16 cm

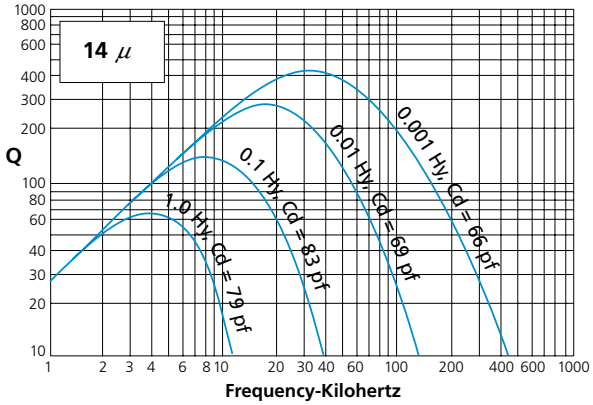
Electrical Specifications

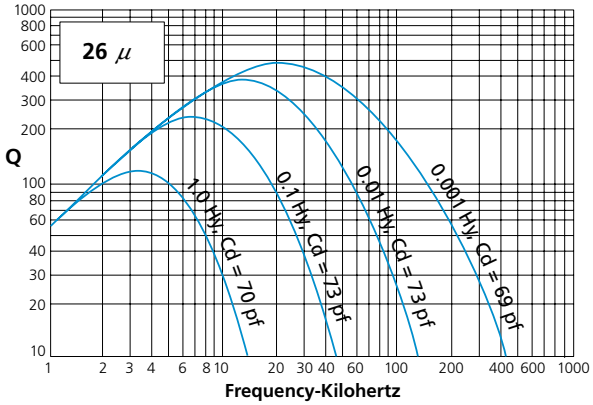
Nominal Permeability	Inductance Factor, mH +/- 8% for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	32	0.18	A-088032-2	HF-184014-2	—
26µ	59	0.097	A-087059-2	HF-184026-2	MS-184026-2
60µ	135	0.043	A-759135-2	HF-184060-2	MS-184060-2
75µ	169	0.034	—	—	MS-184075-2
90µ	202	0.028	—	—	MS-184090-2
125µ	281	0.020	A-438281-2	HF-184125-2	MS-184125-2
147µ	330	0.017	A-152330-2	HF-184147-2	—
160µ	360	0.016	A-325360-2	HF-184160-2	—
173µ	390	0.015	A-180390-2	—	—
205µ	462	0.012	A-215462-2	—	—

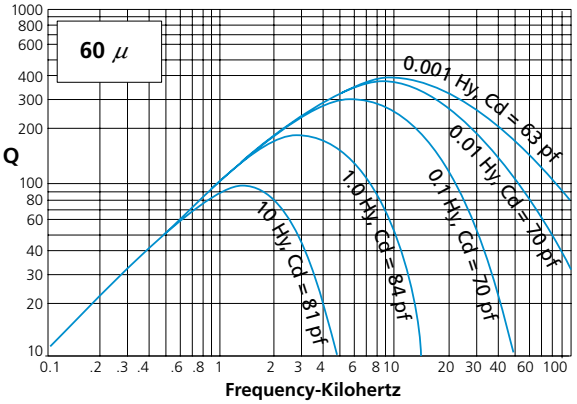
Heavy Film Magnet Wire Winding Data (Approximate)

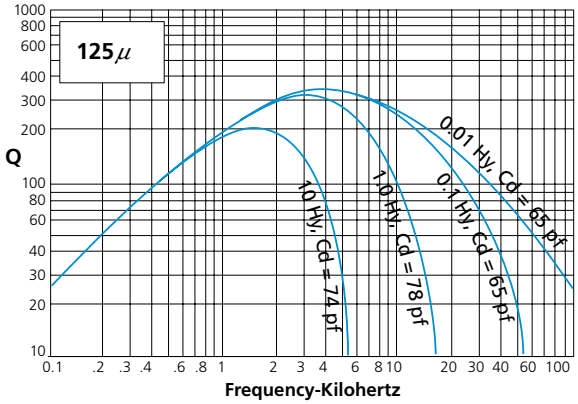
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
10	—	—	22	0.00488	4.89
11	—	—	25	0.00688	5.45
12	65	0.02275	28	0.00966	6.08
13	81	0.0355	31	0.0136	6.78
14	101	0.0556	35	0.0189	7.51
15	126	0.0868	40	0.0267	8.38
16	158	0.1363	45	0.0375	9.34
17	197	0.212	50	0.0526	10.4
18	247	0.333	57	0.0740	11.6
19	307	0.520	64	0.104	12.9
20	383	0.810	71	0.146	14.4
21	477	1.265	80	0.205	16.0
22	597	2.00	90	0.290	17.9
23	739	3.09	100	0.403	19.8
24	921	4.85	112	0.567	22.1
25	1145	7.58	125	0.798	24.6
26	1429	11.96	140	1.13	27.5
27	1767	18.49	155	1.57	30.4

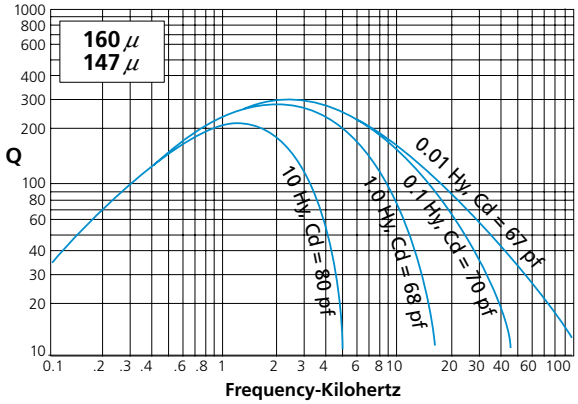
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
28	2209	29.3	174	2.22	33.9
29	2710	44.6	192	3.04	37.5
30	3404	71.3	215	4.34	41.8
31	4234	111.7	238	6.03	46.1
32	5183	169.0	262	8.22	50.7
33	6491	268.0	292	11.6	56.5
34	8142	427.0	330	16.6	63.7
35	10202	676.0	368	23.5	70.9

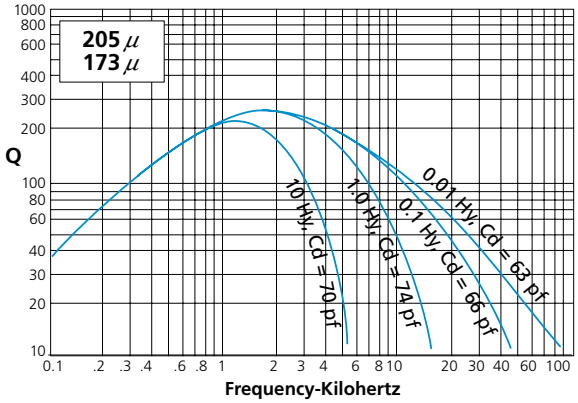




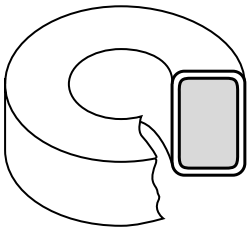








Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:

0.094 Approx. Radius (Typical)

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	1.840 in 46.74 mm	1.130 in 28.70 mm	0.600 in 15.24 mm
After Coating (Blue Epoxy)	1.875 in Max. 47.63 mm Max.	1.098 in Min. 27.89 mm Min.	0.635 in Max. 16.13 mm Max.

Physical Specifications

Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.208 in^2 1.340 cm^2	4.575 in 11.620 cm	0.9526 in^3 15.584 cm^3	0.9469 in^2 6.1089 cm^2 1,205,604 cmil	0.286 lbs 130 g	2.11 in 5.36 cm

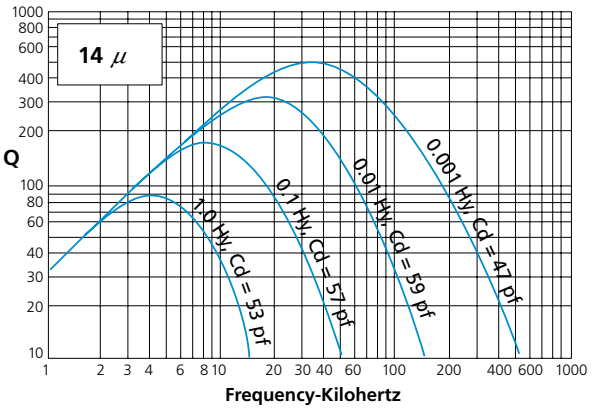
Electrical Specifications

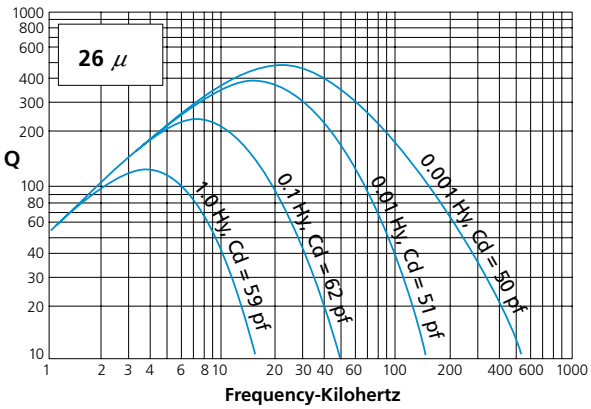
Nominal Permeability	Inductance Factor, mH +/- 8% for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	20	0.17	A-092020-2	HF-185014-2	—
26µ	37	0.090	A-091037-2	HF-185026-2	MS-185026-2
60µ	86	0.039	A-090086-2	HF-185060-2	MS-185060-2
75µ	107	0.031	—	—	MS-185075-2
90µ	128	0.026	—	—	MS-185090-2
125µ	178	0.019	A-089178-2	HF-185125-2	MS-185125-2
147µ	210	0.016	A-153210-2	HF-185147-2	—
160µ	228	0.015	A-326228-2	HF-185160-2	—
173µ	246	0.014	A-195246-2	—	—
205µ	292	0.011	A-216292-2	—	—

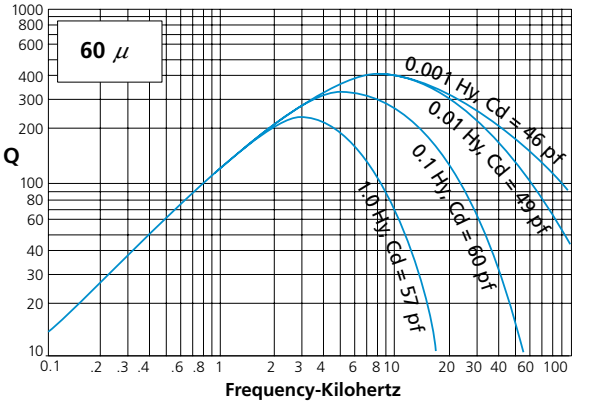
Heavy Film Magnet Wire Winding Data (Approximate)

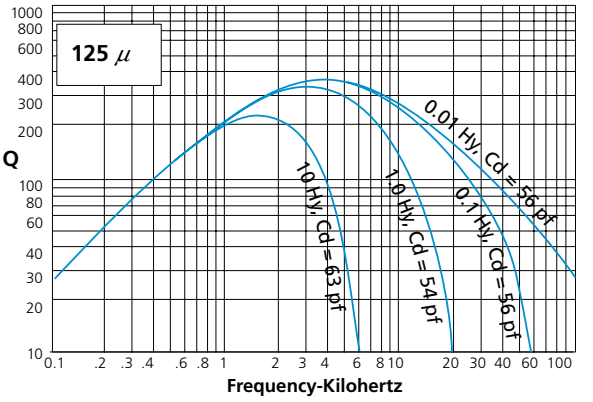
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
—	—	—	26	0.00505	5.05
—	—	—	30	0.00708	5.61
12	92	0.0276	34	0.00990	6.23
13	115	0.0430	38	0.0139	6.92
14	144	0.0671	43	0.0193	7.64
15	180	0.1047	48	0.0270	8.50
16	225	0.1640	54	0.0380	9.45
17	280	0.255	61	0.0530	10.5
18	351	0.399	68	0.0745	11.7
19	437	0.623	77	0.104	13.0
20	544	0.969	86	0.146	14.4
21	678	1.512	96	0.205	16.0
22	849	2.39	108	0.290	17.9
23	1051	3.69	120	0.402	19.8
24	1310	5.79	134	0.565	22.0
25	1629	9.03	150	0.795	24.6
26	2033	14.24	168	1.12	27.3
27	2514	22.0	186	1.56	30.3

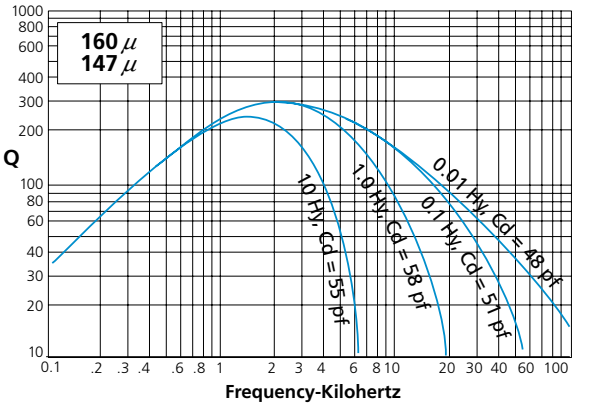
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
28	3142	34.8	208	2.20	33.7
29	3855	52.9	231	3.02	37.2
30	4842	84.7	258	4.31	41.5
31	6024	132.7	285	5.98	45.7
32	7374	201.0	314	8.15	50.3
33	9234	318.0	350	11.5	56.0
34	11583	506.0	395	16.5	63.1

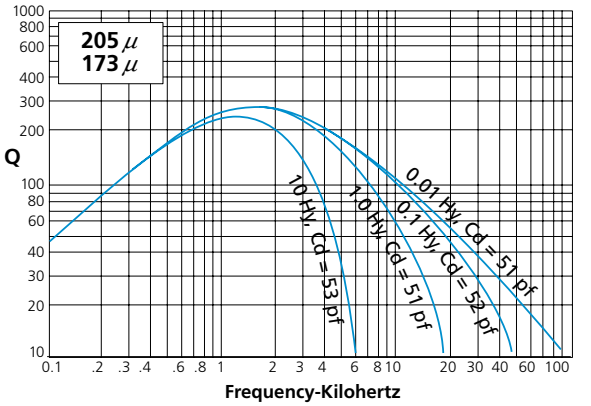




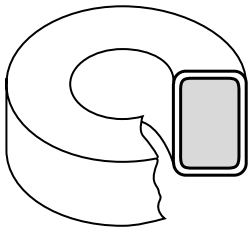








Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:
0.094 Approx. Radius (Typical)

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	2.000 in 50.80 mm	1.250 in 31.75 mm	0.530 in 13.46 mm
After Coating (Blue Epoxy)	2.035 in Max. 51.69 mm Max.	1.218 in Min. 30.94 mm Min.	0.565 in Max. 14.35 mm Max.

Physical Specifications

Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.194 in^2 1.251 cm^2	5.013 in 12.733 cm	0.9739 in^3 15.929 cm^3	1.165 in^2 7.517 cm^2 1,483,524 cmil	0.313 lbs 133 g	2.01 in 5.11 cm

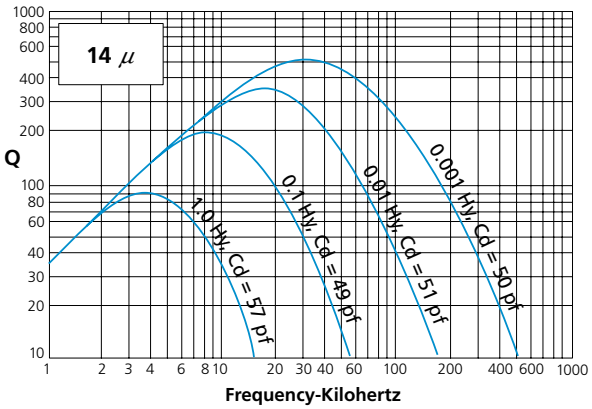
Electrical Specifications

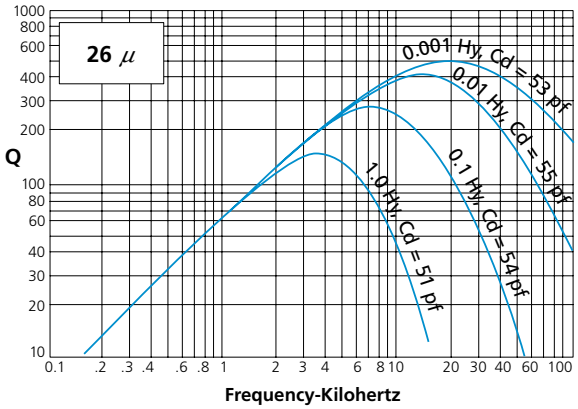
Nominal Permeability	Inductance Factor, mH +/- 8% for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	17	0.15	A-349017-2	HF-200014-2	—
26µ	32	0.080	A-348032-2	HF-200026-2	MS-200026-2
60µ	73	0.035	A-106073-2	HF-200060-2	MS-200060-2
75µ	91.2	0.028	—	—	MS-200075-2
90µ	109	0.023	—	—	MS-200090-2
125µ	152	0.017	A-715152-2	HF-200125-2	MS-200125-2
147µ	179	0.014	A-154179-2	HF-200147-2	—
160µ	195	0.013	A-327195-2	HF-200160-2	—
173µ	210	0.012	A-181210-2	—	—
205µ	249	0.010	A-217249-2	—	—

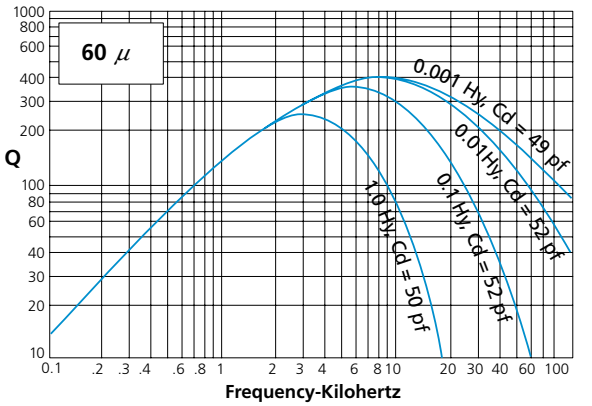
Heavy Film Magnet Wire Winding Data (Approximate)

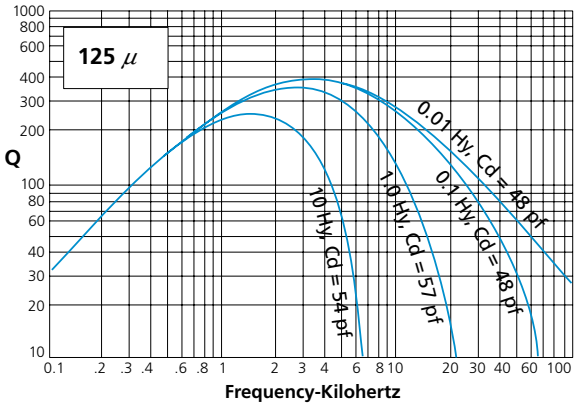
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
10	—	—	30	0.00539	5.40
11	—	—	33	0.00754	5.98
12	113	0.0324	38	0.0105	6.64
13	141	0.0505	43	0.0147	7.36
14	177	0.0788	48	0.0205	8.11
15	221	0.1227	54	0.0287	9.02
16	276	0.1922	60	0.0402	10.0
17	344	0.298	68	0.0562	11.1
18	430	0.467	76	0.0788	12.3
19	537	0.728	85	0.110	13.7
20	668	1.133	95	0.154	15.2
21	832	1.768	107	0.216	16.9
22	1042	2.79	120	0.306	18.9
23	1289	4.31	133	0.424	20.9
24	1608	6.76	149	0.596	23.2

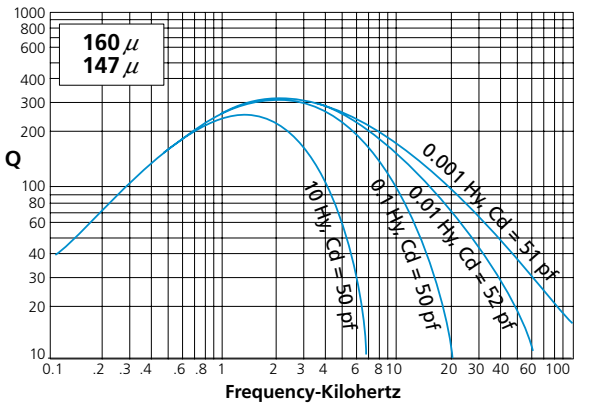
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
25	1999	10.55	167	0.838	25.9
26	2495	16.62	186	1.18	28.8
27	3084	25.7	207	1.64	31.9
28	3855	40.6	231	2.32	35.5
29	4730	61.8	256	3.18	39.2
30	5941	98.8	287	4.53	43.7
31	7391	154.8	316	6.29	48.1
32	9048	234.0	349	8.57	52.9
33	11330	371.0	389	12.1	58.9

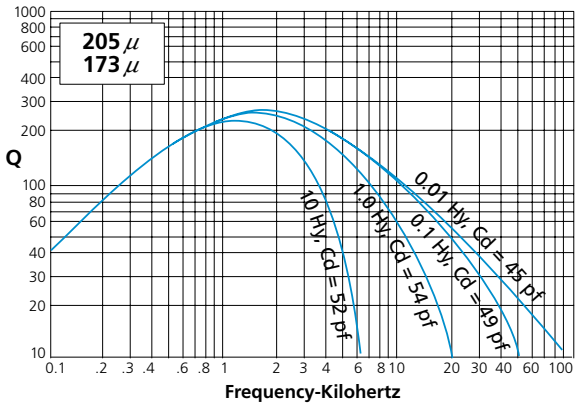




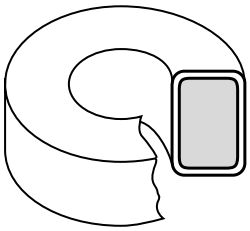








Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:

0.094 Approx. Radius (Typical)

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	2.250 in 57.15 mm	1.039 in 26.39 mm	0.600 in 15.24 mm
After Coating (Blue Epoxy)	2.285 in Max. 58.04 mm Max.	1.007 in Min. 25.58 mm Min.	0.635 in Max. 16.13 mm Max.

Physical Specifications

Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.3545 in^2 2.2871 cm^2	4.924 in 12.506 cm	1.745 in^3 28.603 cm^3	0.7964 in^2 5.1383 cm^2 1,014,049 cmil	0.55 lbs 249 g	3.23 in 8.20 cm

Electrical Specifications

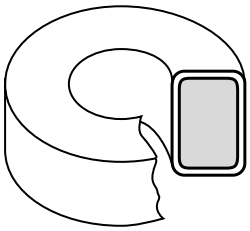
Nominal Permeability	Inductance Factor, mH +/- 8% for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	32	0.19	A-710032-2	HF-226014-2	—
26µ	60	0.10	A-711060-2	HF-226026-2	MS-226026-2
60µ	138	0.043	A-712138-2	HF-226060-2	MS-226060-2
75µ	172	0.035	—	—	MS-226075-2
90µ	207	0.029	—	—	MS-226090-2
125µ	287	0.021	A-713287-2	HF-226125-2	MS-226125-2
147µ	338	0.018	A-714338-2	HF-226147-2	—
160µ	368	0.016	A-716368-2	HF-226160-2	—
173µ	398	0.015	A-717398-2	—	—
200µ	460	0.013	A-718460-2	—	—

Heavy Film Magnet Wire Winding Data (Approximate)

AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
10	42	0.0113	24	0.00560	5.61
11	48	0.0163	27	0.00788	6.25
12	77	0.0330	31	0.0111	6.97
13	97	0.0522	35	0.0156	7.77
14	121	0.0821	39	0.0217	8.60
15	151	0.129	44	0.0305	9.60
16	189	0.205	49	0.0430	10.7
17	236	0.321	56	0.0602	11.9
18	295	0.507	62	0.0848	13.3
19	368	0.797	70	0.119	14.8
20	458	1.25	78	0.167	16.5
21	570	1.96	88	0.234	18.4
22	714	3.11	98	0.332	20.5
23	884	4.83	110	0.461	22.7
24	1102	7.62	123	0.649	25.3
25	1370	11.9	137	0.914	28.2
26	1710	18.9	154	1.29	31.5
27	2115	29.2	171	1.79	34.9

AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
28	2643	46.5	191	2.54	38.9
29	3242	70.9	211	3.49	42.9
30	4073	114.0	236	4.97	47.9
31	5067	179.0	261	6.91	52.8
32	6202	270.0	288	9.42	58.1

Curves are currently not available. Please contact our Powder Core Application Engineer for curve information at 1-800-545-4578.



CORNERS:

0.094 Approx. Radius (Typical)

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	2.250 in 57.15 mm	1.400 in 35.56 mm	0.550 in 13.97 mm
After Coating (Blue Epoxy)	2.285 in Max. 58.04 mm Max.	1.368 in Min. 34.75 mm Min.	0.585 in Max. 14.86 mm Max.

Physical Specifications

Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.224 in^2 1.444 cm^2	5.628 in 14.296 cm	1.261 in^3 20.65 cm^3	1.470 in^2 9.483 cm^2 1,871,424 cmil	0.385 lbs 175 g	2.15 in 5.47 cm

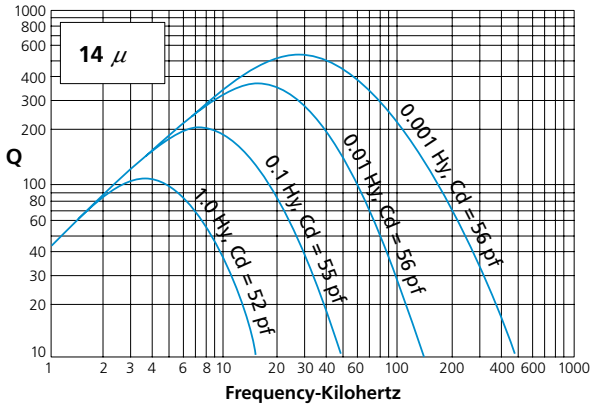
Electrical Specifications

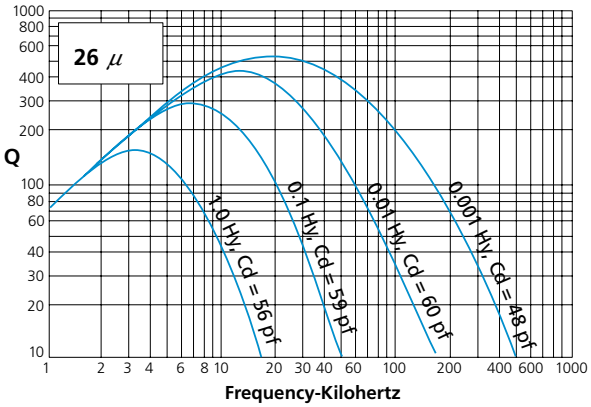
Nominal Permeability	Inductance Factor, mH +/- 8% for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	18	0.12	A-096018-2	HF-225014-2	—
26µ	33	0.066	A-094033-2	HF-225026-2	MS-225026-2
60µ	75	0.029	A-488075-2	HF-225060-2	MS-225060-2
75µ	93.6	0.023	—	—	MS-225075-2
90µ	112	0.019	—	—	MS-225090-2
125µ	156	0.014	A-109156-2	HF-225125-2	MS-225125-2
147µ	185	0.012	A-155185-2	HF-225147-2	—
160µ	200	0.011	A-328200-2	HF-225160-2	—
173µ	218	0.010	A-182218-2	—	—
205µ	259	0.0084	A-218259-2	—	—

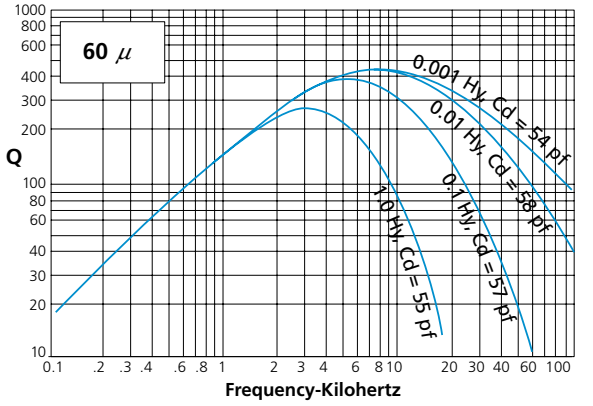
Heavy Film Magnet Wire Winding Data (Approximate)

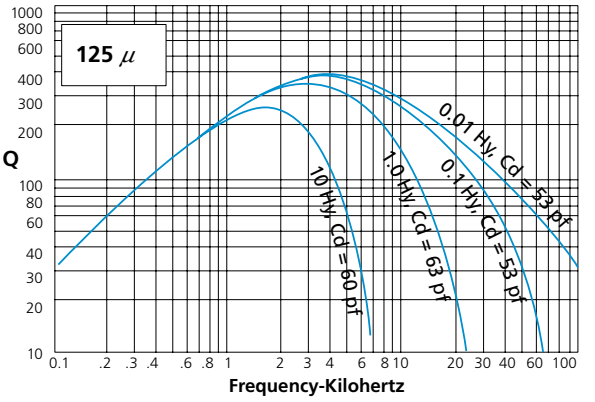
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
10	—	—	34	0.00649	6.50
11	—	—	38	0.00908	7.20
12	142	0.0435	43	0.0127	7.99
13	177	0.0677	48	0.0177	8.87
14	222	0.1057	54	0.0247	9.78
15	277	0.165	61	0.0346	10.9
16	347	0.258	68	0.0485	12.1
17	433	0.401	76	0.0678	13.4
18	541	0.628	86	0.0951	14.9
19	675	0.980	96	0.133	16.6
20	840	1.525	107	0.186	18.4
21	1046	2.38	120	0.261	20.5
22	1311	3.76	135	0.369	22.8
23	1622	5.80	150	0.512	25.2
24	2022	9.11	168	0.720	28.1
25	2514	14.22	188	1.01	31.3
26	3139	22.4	210	1.43	34.8
27	3880	34.6	233	1.98	38.6

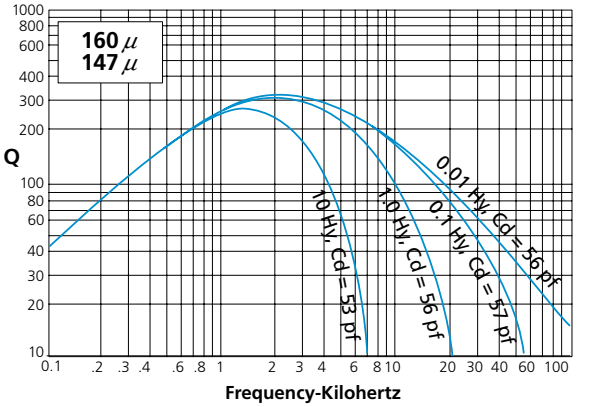
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
28	4850	54.8	260	2.80	42.9
29	5950	83.3	288	3.85	47.4
30	7473	133.3	322	5.48	52.9
31	9297	209.0	355	7.62	58.2
32	11380	316.0	392	10.4	64.1

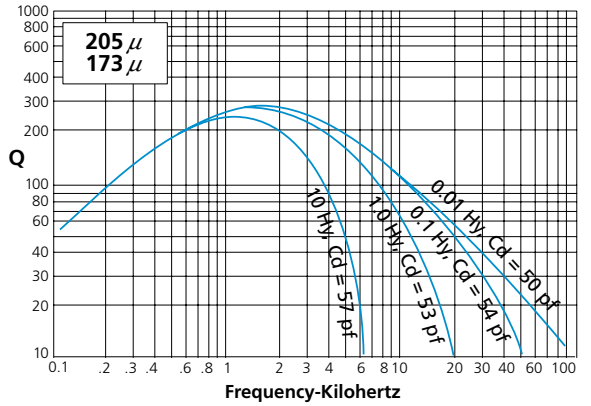




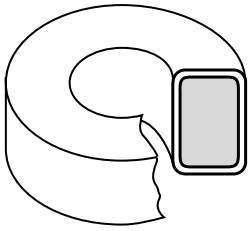








Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:

0.094 Approx. Radius (Typical)

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	3.063 in 77.80 mm	1.938 in 49.23 mm	0.500 in 12.70 mm
After Coating (Blue Epoxy)	3.108 in Max. 78.94 mm Max.	1.888 in Min. 47.96 mm Min.	0.550 in Max. 13.97 mm Max.

Physical Specifications

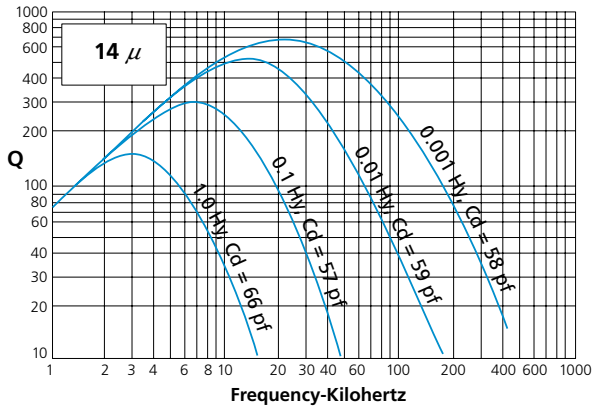
Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.2748 in^2 1.7729 cm^2	7.721 in 19.612 cm	2.122 in^3 34.770 cm^3	2.800 in^2 18.062 cm^2 3,564,544 cmil	0.64 lbs 290 g	2.36 in 5.99 cm

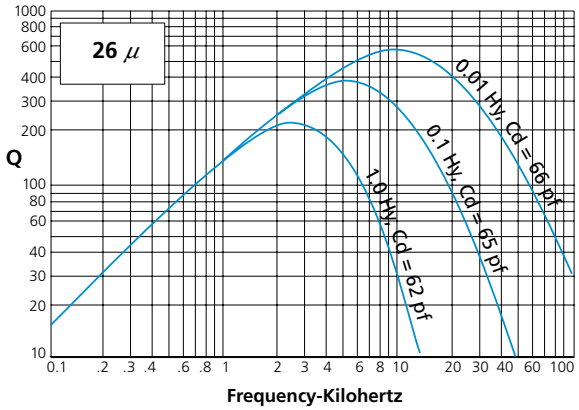
Electrical Specifications

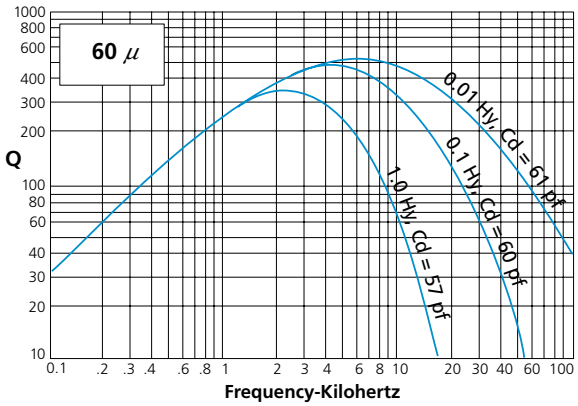
Nominal Permeability	Inductance Factor, mH +/- 8% for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	16	0.076	A-335016-2	HF-300014-2	—
26µ	30	0.041	A-124030-2	HF-300026-2	MS-300026-2
60µ	68	0.018	A-123068-2	HF-300060-2	MS-300060-2
75µ	85.2	0.014	—	—	MS-300075-2
90µ	102	0.012	—	—	MS-300090-2
125µ	142	0.0086	A-866142-2	HF-300125-2	MS-300125-2
147µ	167	0.0073	A-156167-2	HF-300147-2	—
160µ	182	0.0067	A-685182-2	HF-300160-2	—
173µ	197	0.0062	A-183197-2	—	—
205µ	233	0.0052	A-219233-2	—	—

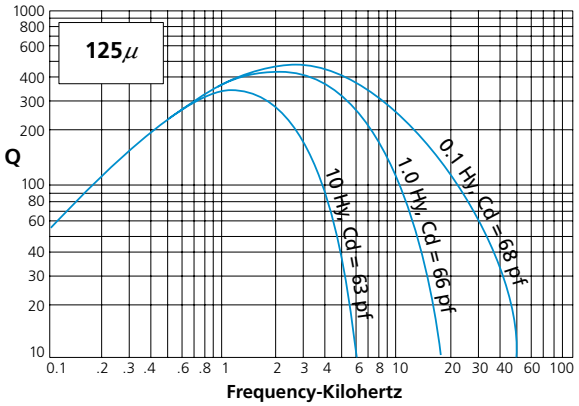
Heavy Film Magnet Wire Winding Data (Approximate)

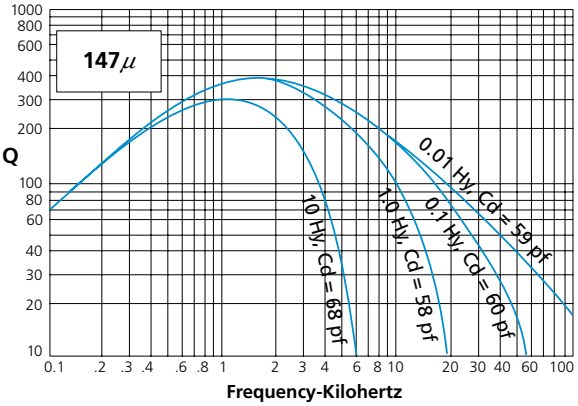
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
10	—	—	47	0.0100	10.0
11	—	—	53	0.0140	11.1
12	271	0.0908	60	0.0196	12.3
13	339	0.1414	68	0.0274	13.7
14	424	0.221	75	0.0381	15.1
15	511	0.344	85	0.0534	16.8
16	664	0.540	95	0.0749	18.6
17	827	0.838	107	0.105	20.7
18	1034	1.314	119	0.147	23.0
19	1231	2.05	134	0.206	25.6
20	1605	3.19	149	0.288	28.4
21	1912	4.98	167	0.404	31.6
22	2504	7.88	187	0.570	35.2
23	3099	12.16	208	0.792	39.0
24	3863	19.09	232	1.11	43.3
25	4803	29.81	260	1.56	48.3
26	5996	47.0	290	2.21	53.8
27	7412	72.6	323	3.07	59.6
28	9265	114.9	360	4.33	66.4
29	11368	174.9	399	5.95	73.2

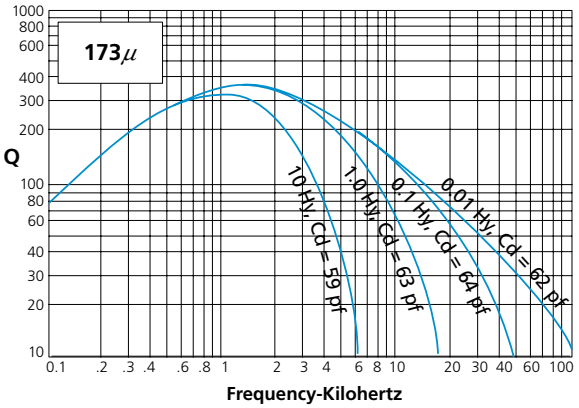


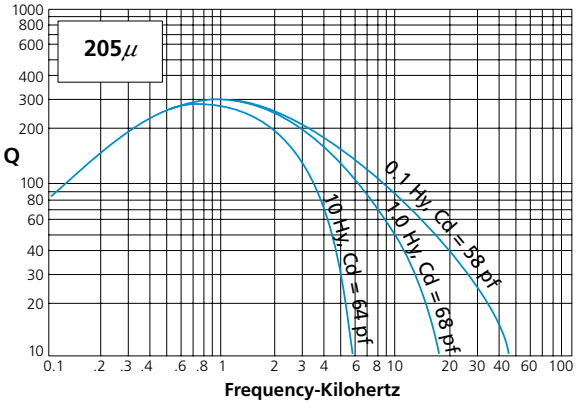




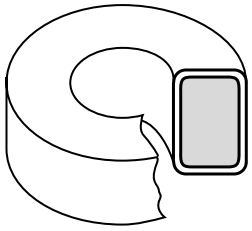








Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:

0.094 Approx. Radius (Typical)

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	3.063 in 77.80 mm	1.938 in 49.23 mm	0.625 in 15.88 mm
After Coating (Blue Epoxy)	3.108 in Max. 78.94 mm Max.	1.888 in Min. 47.96 mm Min.	0.675 in Max. 17.15 mm Max.

Physical Specifications

Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.3440 in^2 2.2192 cm^2	7.721 in 19.612 cm	2.656 in^3 43.523 cm^3	2.800 in^2 18.062 cm^2 3,564,544 cmil	0.83 lbs 377 g	3.90 in 9.90 cm

Electrical Specifications

Nominal Permeability	Inductance Factor, mH +/- 8% for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	19.9	0.10	A-735020-2	HF-301014-2	MS-301014-2
26µ	37.0	0.056	A-736037-2	HF-301026-2	MS-301026-2
60µ	85.3	0.024	A-737085-2	HF-301060-2	MS-301060-2
75µ	107	0.019	—	—	MS-301075-2
90µ	128	0.016	—	—	MS-301090-2
125µ	178	0.012	A-740178-2	HF-301125-2	MS-301125-2
147µ	209	0.010	A-741209-2	HF-301147-2	—
160µ	228	0.0090	A-742228-2	HF-301160-2	—
173µ	246	0.0083	A-743246-2	—	—
205µ	284	0.0072	A-744284-2	—	—

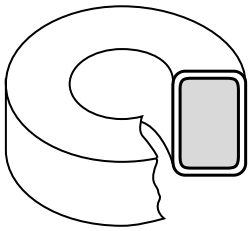
Heavy Film Magnet Wire Winding Data (Approximate)

AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
10	—	—	47	0.0110	11.0
11	—	—	53	0.0154	12.2
12	275	0.142	60	0.0216	13.6
13	345	0.224	68	0.0302	15.1
14	424	0.347	75	0.0420	16.7
15	532	0.549	85	0.0590	18.5
16	664	0.867	95	0.0829	20.6
17	829	1.36	107	0.116	22.9
18	1036	2.15	119	0.163	25.5
19	1289	3.37	134	0.228	28.4
20	1608	5.27	149	0.318	31.5
21	2001	8.32	167	0.449	35.1

Heavy Film Magnet Wire Winding Data (Approximate)

AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
22	2499	13.1	187	0.634	39.1
23	3081	20.3	208	0.880	43.3
24	3829	32.0	232	1.24	48.2
25	4793	50.4	260	1.74	53.8
26	5951	79.2	290	2.45	59.9
27	7322	122	323	3.41	66.3
28	9116	193	360	4.82	73.9
29	11126	293	399	6.62	81.5

Curves are currently not available. Please contact our Powder Core Application Engineer for curve information at 1-800-545-4578.



CORNERS:

0.125 Approx. Radius (Typical)

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	4.000 in 101.60 mm	2.250 in 57.15 mm	0.535 in 13.59 mm
After Coating (Blue Epoxy)	4.050 in Max. 102.87 mm Max.	2.195 in Min. 55.75 mm Min.	0.585 in Max. 14.86 mm Max.

Physical Specifications

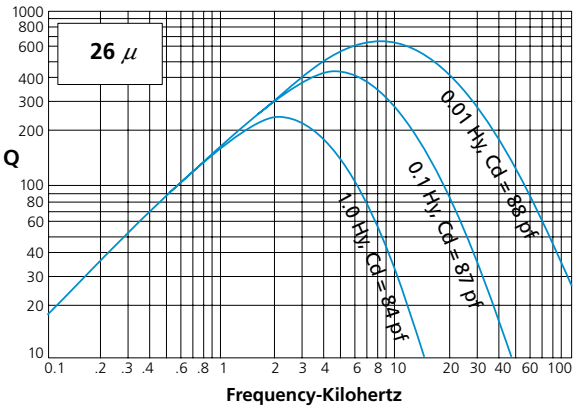
Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.4606 in^2 2.9716 cm^2	9.555 in 24.271 cm	4.401 in^3 72.122 cm^3	3.784 in^2 24.413 cm^2 4,818,025 cmils	1.21 lbs 550 g	3.05 in 7.76 cm

Electrical Specifications

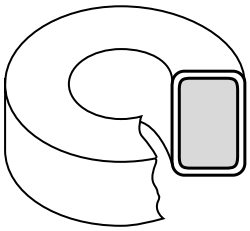
Nominal Permeability	Inductance Factor, mH +/- 8% for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	21.5	0.055	A-651022-2	HF-401014-2	—
26µ	40.0	0.029	A-126040-2	HF-401026-2	MS-401026-2
60µ	92.3	0.013	A-652092-2	HF-401060-2	MS-401060-2
75µ	115	0.010	—	—	MS-401075-2
90µ	139	0.0086	—	—	MS-401090-2
125µ	192	0.0062	A-653192-2	HF-401125-2	MS-401125-2
147µ	226	0.0053	A-654226-2	HF-401147-2	—
160µ	246	0.0048	A-655246-2	HF-401160-2	—
173µ	266	0.0045	A-656266-2	—	—
200µ	308	0.0039	A-657308-2	—	—

Heavy Film Magnet Wire Winding Data (Approximate)

AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
10	—	—	56	0.0147	14.8
11	—	—	63	0.0207	16.4
12	366	0.1567	70	0.0289	18.2
13	457	0.244	79	0.0406	20.3
14	573	0.383	88	0.0565	22.4
15	716	0.598	99	0.0794	25.0
16	896	0.939	111	0.112	27.8
17	1116	1.461	124	0.156	30.9
18	1396	2.29	139	0.219	34.4
19	1740	3.59	156	0.308	38.3
20	2166	5.59	174	0.431	42.5
21	2698	8.74	195	0.605	47.4
22	3380	13.83	218	0.856	52.8
23	4183	21.4	242	1.19	58.6
24	5215	33.6	271	1.67	65.1
25	6483	52.5	303	2.35	72.7
26	8094	82.8	338	3.32	81.0
27	10004	128.1	376	4.62	89.7



Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:

0.125 Approx. Radius (Typical)

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	4.000 in 101.60 mm	2.250 in 57.15 mm	0.650 in 16.51 mm
After Coating (Blue Epoxy)	4.050 in Max. 102.87 mm Max.	2.195 in Min. 55.75 mm Min.	0.700 in Max. 17.78 mm Max.

Physical Specifications

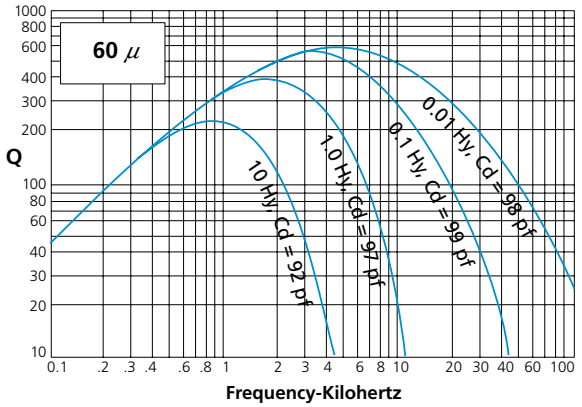
Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.5460 in^2 3.5226 cm^2	9.555 in 24.271 cm	5.217 in^3 85.495 cm^3	3.784 in^2 24.413 cm^2 4,818,025 cmil	1.61 lbs 730 g	3.29 in 8.35 cm

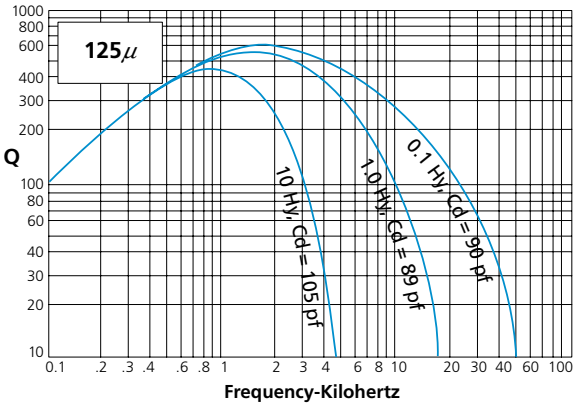
Electrical Specifications

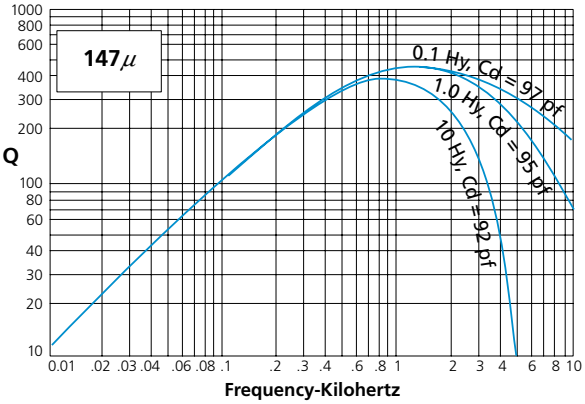
Nominal Permeability	Inductance Factor, mH +/- 8% for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	25.6	0.049	A-658026-2	HF-400014-2	—
26µ	47.4	0.027	A-659047-2	HF-400026-2	MS-400026-2
60µ	112	0.011	A-125112-2	HF-400060-2	MS-400060-2
75µ	137	0.0092	—	—	MS-400075-2
90µ	164	0.0076	—	—	MS-400090-2
125µ	228	0.0055	A-542228-2	HF-400125-2	MS-400125-2
147µ	268	0.0047	A-157268-2	HF-400147-2	—
160µ	292	0.0043	A-660292-2	HF-400160-2	—
173µ	316	0.0040	A-184316-2	—	—
205µ	374	0.0034	A-220374-2	—	—

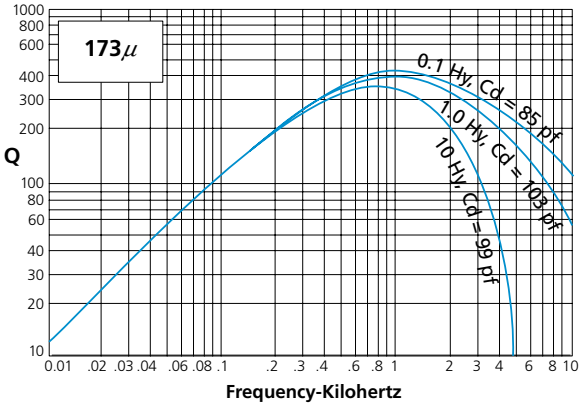
Heavy Film Magnet Wire Winding Data (Approximate)

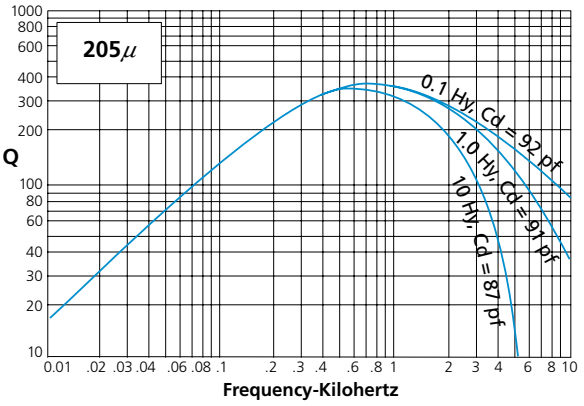
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
10	—	—	56	0.0158	15.8
11	—	—	63	0.0222	17.6
12	366	0.1678	70	0.0311	19.6
13	457	0.262	79	0.0436	21.8
14	573	0.410	88	0.0608	24.1
15	716	0.641	99	0.0854	26.9
16	896	1.008	111	0.120	29.9
17	1116	1.569	124	0.168	33.3
18	1396	2.47	139	0.236	37.0
19	1740	3.85	156	0.332	41.3
20	2166	6.01	174	0.464	45.8
21	2698	9.40	195	0.653	51.1
22	3380	14.88	218	0.924	57.0
23	4183	25.0	242	1.28	63.2
24	5215	36.1	271	1.81	70.3
25	6483	56.5	303	2.54	78.5
26	8094	89.2	338	3.59	87.5
27	10004	137.9	376	4.99	96.9



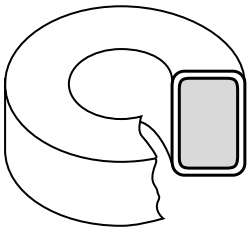








Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:

0.125 Approx. Radius (Typical)

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	5.218 in 132.54 mm	3.094 in 78.59 mm	0.800 in 20.32 mm
After Coating (Blue Epoxy)	5.274 in Max. 133.96 mm Max.	3.033 in Min. 77.04 mm Min.	0.855 in Max. 21.72 mm Max.

Physical Specifications

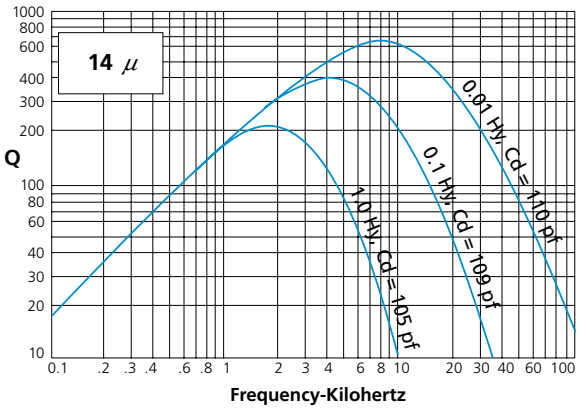
Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
0.8288 in^2 5.3471 cm^2	12.767 in 33.12 cm	10.58 in^3 173.40 cm^3	7.225 in^2 46.612 cm^2 9,199,089 cmil	3.19 lbs 1450 g	3.97 in 10.09 cm

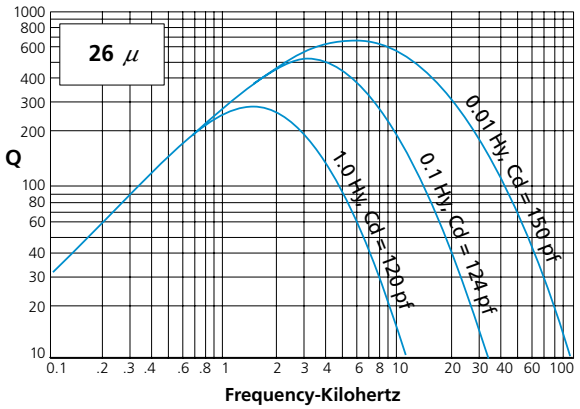
Electrical Specifications

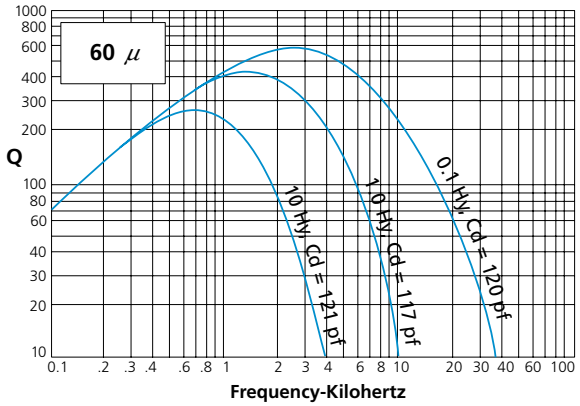
Nominal Permeability	Inductance Factor, mH +/- 8% for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	26	0.031	A-430026-2	HF-520014-2	—
26µ	54	0.015	A-129054-2	HF-520026-2	MS-520026-2
60µ	124	0.0064	A-128124-2	HF-520060-2	MS-520060-2
75µ	155	0.0052	—	—	MS-520075-2
90µ	187	0.0043	—	—	MS-520090-2
125µ	259	0.0031	A-127259-2	HF-520125-2	MS-520125-2
147µ	304	0.0026	A-158304-2	HF-520147-2	—
160µ	332	0.0024	A-661332-2	HF-520160-2	—
173µ	358	0.0022	A-185358-2	—	—
205µ	425	0.0019	A-221425-2	—	—

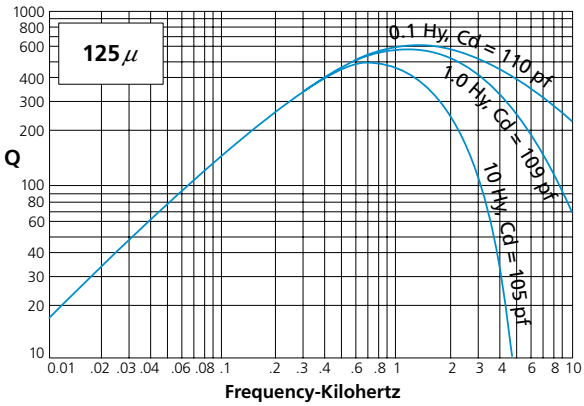
Heavy Film Magnet Wire Winding Data (Approximate)

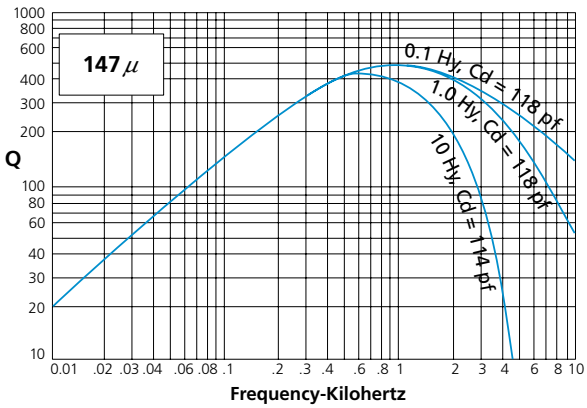
AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
10	—	—	78	0.0266	26.6
11	—	—	88	0.0374	29.6
12	695	0.382	98	0.0524	33.0
13	869	0.598	110	0.0735	36.7
14	1088	0.937	123	0.103	40.6
15	1360	1.467	138	0.144	45.3
16	1702	2.31	155	0.203	50.5
17	2121	3.60	173	0.284	56.2
18	2652	5.65	193	0.400	62.6
19	3307	8.84	216	0.562	69.8
20	4116	13.80	241	0.786	77.6
21	5127	21.6	270	1.11	86.5
22	6421	34.2	302	1.56	96.5
23	7947	52.9	336	2.17	107
24	9908	83.2	375	3.06	119
25	12318	130.1	420	4.31	133

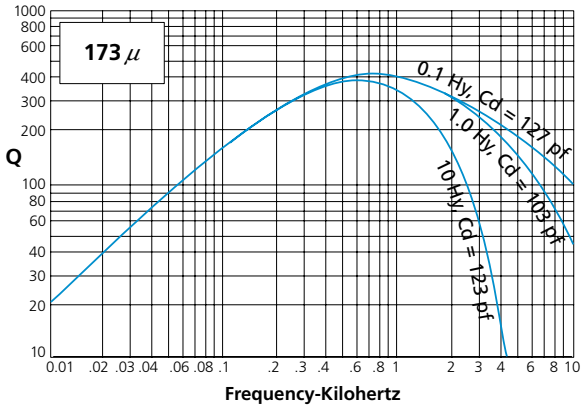


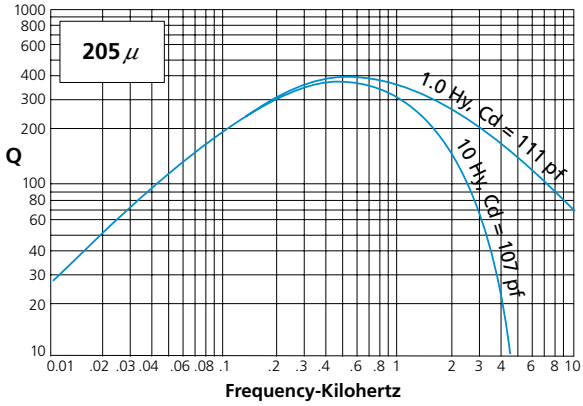




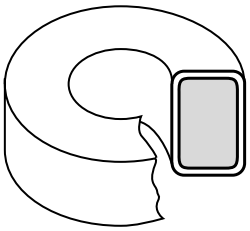








Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.



CORNERS:

0.125 Approx. Radius (Typical)

Dimensions

	Outside Diameter	Inside Diameter	Height
Before Coating Nominal	5.218 in 132.54 mm	3.094 in 78.59 mm	1.000 in 25.40 mm
After Coating (Blue Epoxy)	5.274 in Max. 133.96 mm Max.	3.033 in Min. 77.04 mm Min.	1.055 in Max. 26.80 mm Max.

Physical Specifications

Effective Cross Sectional Area of Magnetic Path, A_e (Reference)	Effective Magnetic Path Length, l_e (Reference)	Effective Core Volume, V_e (Reference)	Minimum Window Area (Reference)	Approximate Weight of Finished 125µ MPP Core	Approximate Mean Length of Turn for Full Winding (Half of I.D. Remaining)
1.040 in^2 6.710 cm^2	12.767 in 32.429 cm	13.28 in^3 217.58 cm^3	7.225 in^2 46.612 cm^2 9,199,089 cmil	4.00 lbs 1820 g	4.37 in 11.10 cm

Electrical Specifications

Nominal Permeability	Inductance Factor, mH +/- 8% for 1000 turns	Approximate Ratio of DC Resistance to Inductance for Full Winding (Half of I.D. Remaining), Ω/mH	Part Numbers		
			Molypermalloy	HI-FLUX	SUPER-MSS
14µ	36.4	0.024	A-662036-2	HF-521014-2	—
26µ	67.6	0.013	A-663068-2	HF-521026-2	MS-521026-2
60µ	156	0.0056	A-664156-2	HF-521060-2	MS-521060-2
75µ	195	0.0045	—	—	MS-521075-2
90µ	234	0.0037	—	—	MS-521090-2
125µ	325	0.0027	A-665325-2	HF-521125-2	MS-521125-2
147µ	382	0.0023	A-666382-2	HF-521147-2	—
160µ	416	0.0021	A-667416-2	HF-521160-2	—
173µ	450	0.0020	A-668450-2	—	—
200µ	520	0.0017	A-669520-2	—	—

Heavy Film Magnet Wire Winding Data (Approximate)

AWG	Full Winding (Half of I.D. Remaining)		Single Layer Winding		
	Turns	R_{dc}, Ω	Turns	R_{dc}, Ω	l_w, ft.
10	—	—	78	0.0292	29.2
11	—	—	88	0.0410	32.5
12	695	0.420	98	0.0576	36.3
13	869	0.658	110	0.0809	40.4
14	1088	1.03	123	0.113	44.7
15	1360	1.61	138	0.159	49.9
16	1702	2.54	155	0.224	55.6
17	2121	3.96	173	0.313	62.0
18	2652	6.22	193	0.441	69.0
19	3307	9.73	216	0.620	77.0
20	4116	15.2	241	0.867	85.6
21	5127	23.8	270	1.22	95.6
22	6421	37.6	302	1.73	107
23	7947	58.2	336	2.40	118
24	9908	91.6	375	3.38	132
25	12318	143	420	4.76	147

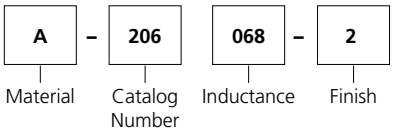
Curves are currently not available. Please contact our Powder Core Application Engineer for curve information at 1-800-545-4578.

Typical Molypermalloy Q vs. frequency curves at indicated inductance and distributed capacitance.

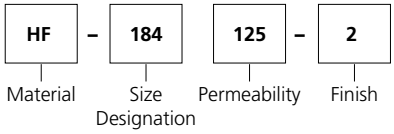
Molybdenum Permalloy Powder

A	–	206	068	–	2
Material		Catalog Number	Inductance		Finish

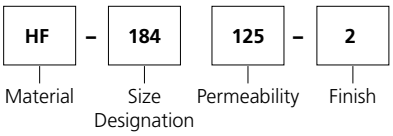
Molybdenum Permalloy Powder



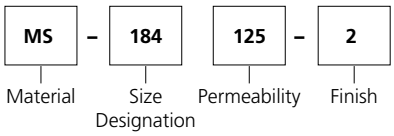
HI-FLUX



HI-FLUX



SUPER-MSS



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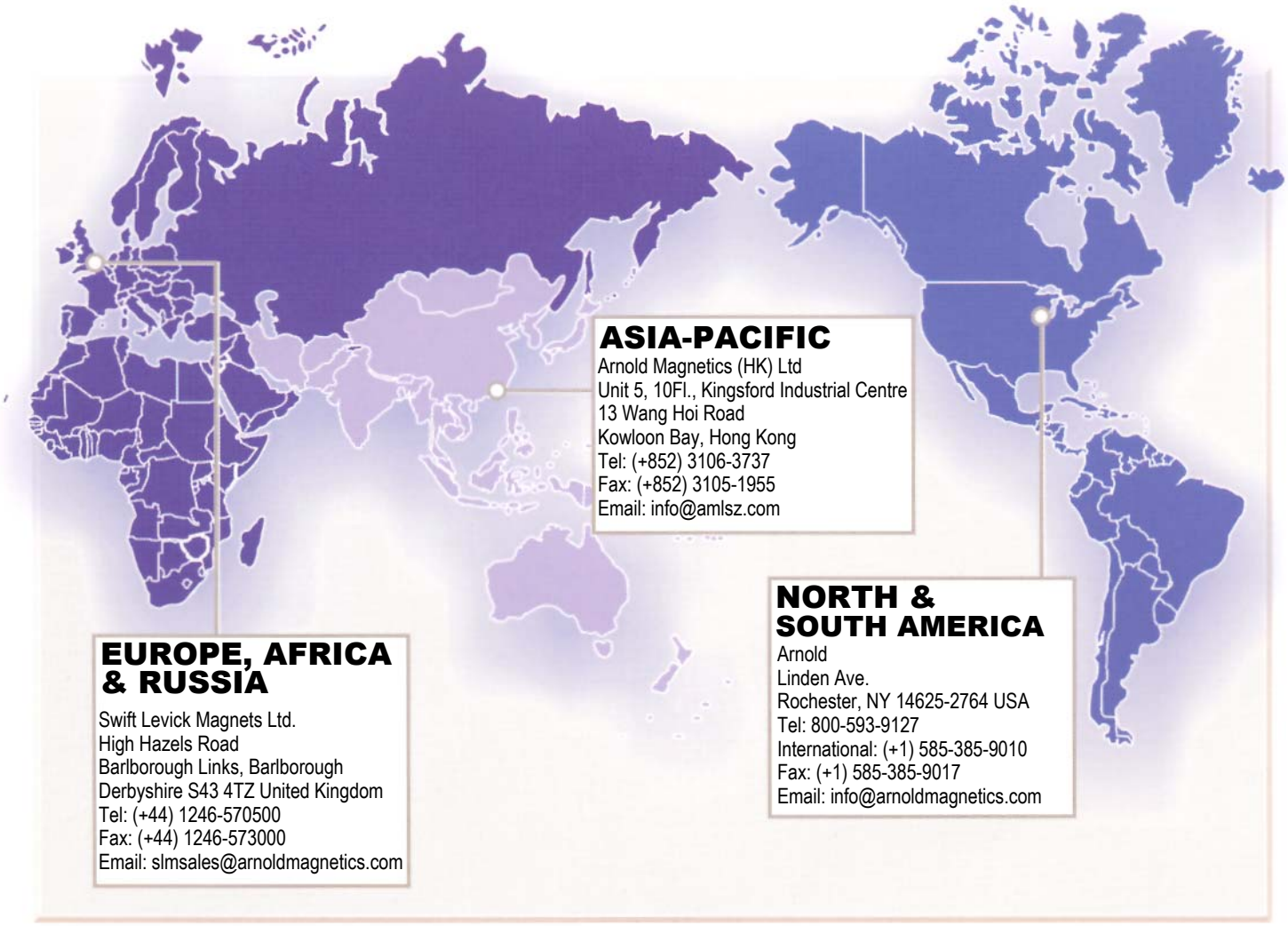

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