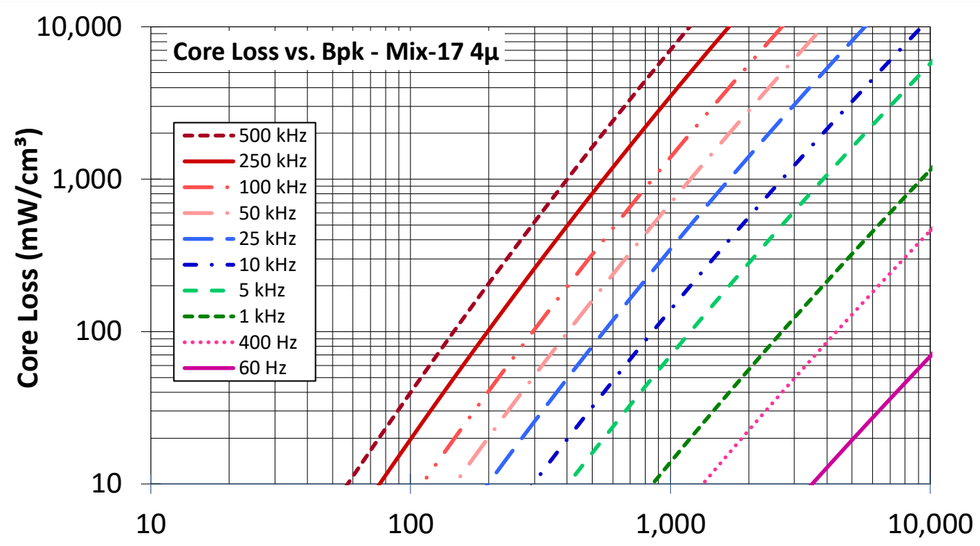
Mix:	-17

Revision 2023-Dec-15 - Generated 2023-Dec-15

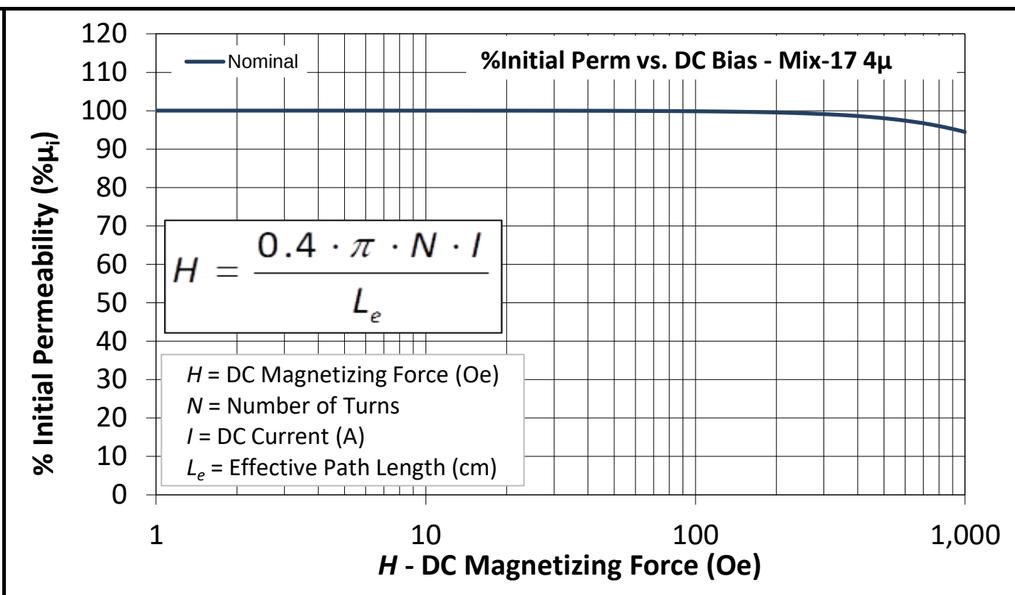
µi(reference)	4
Typical AL tolerance	± 5%
Color Code	Blue/Yellow
Density	4.0 g/cm³
Bsat	12.8kG
Core Loss (100kHz, 140g)	18 mW/cm³ (nom) 20 mW/cm³ (max)
%Perm at DC Bias (200 Oe)	99.5% (nom) 99.4% (min)



$$\text{Core Loss (mW/cm}^3) = \frac{f}{\frac{a}{B_{pk}^{\ 3}} + \frac{b}{B_{pk}^{\ 2.3}} + \frac{c}{B_{pk}^{\ 1.65}}} + d \cdot B_{pk}^{\ 2} \cdot f^2$$

where B_{pk} expressed in gauss, f expressed in hertz, and:

a=4.00E+09, b=3.00E+08, c=2.70E+06, d=4.40E-16



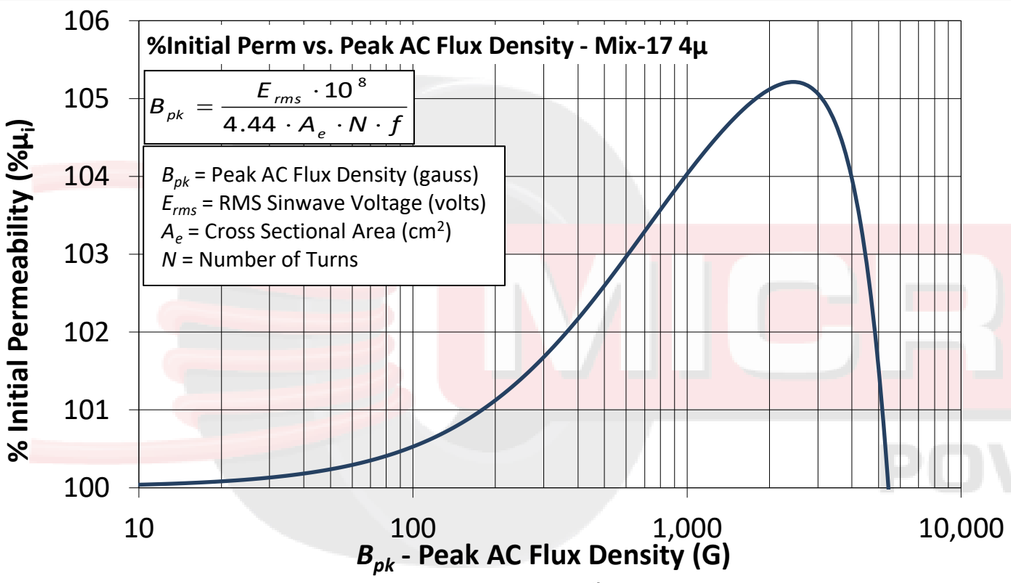
$$H = \frac{0.4 \cdot \pi \cdot N \cdot I}{L_e}$$

H = DC Magnetizing Force (Oe)
N = Number of Turns
I = DC Current (A)
L_e = Effective Path Length (cm)

$$\%\mu_i = \frac{1}{a + b \cdot H^c} + d$$

where H expressed in oersteds, and:

a=1.00E-02, b=1.34E-08, c=1.55, d=0.00



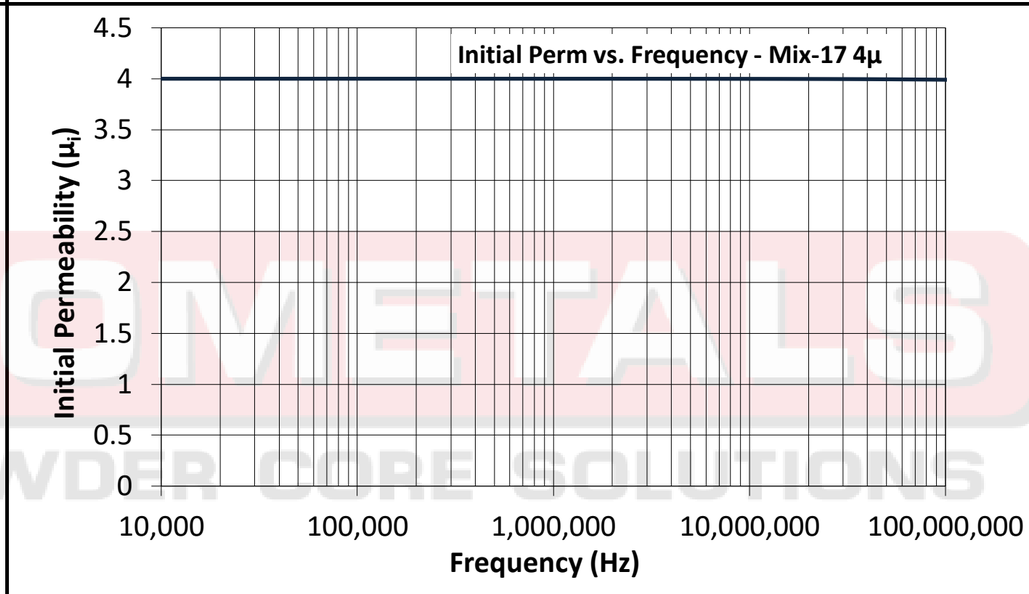
$$B_{pk} = \frac{E_{rms} \cdot 10^8}{4.44 \cdot A_e \cdot N \cdot f}$$

B_{pk} = Peak AC Flux Density (gauss)
E_{rms} = RMS Sinwave Voltage (volts)
A_e = Cross Sectional Area (cm²)
N = Number of Turns

$$\%\mu_i = \frac{1}{\frac{1}{a + bB_{pk}^{\ c}} + \frac{1}{dB_{pk}^{\ e}} + \frac{1}{f}}$$

where B_{pk} expressed in gauss, and:

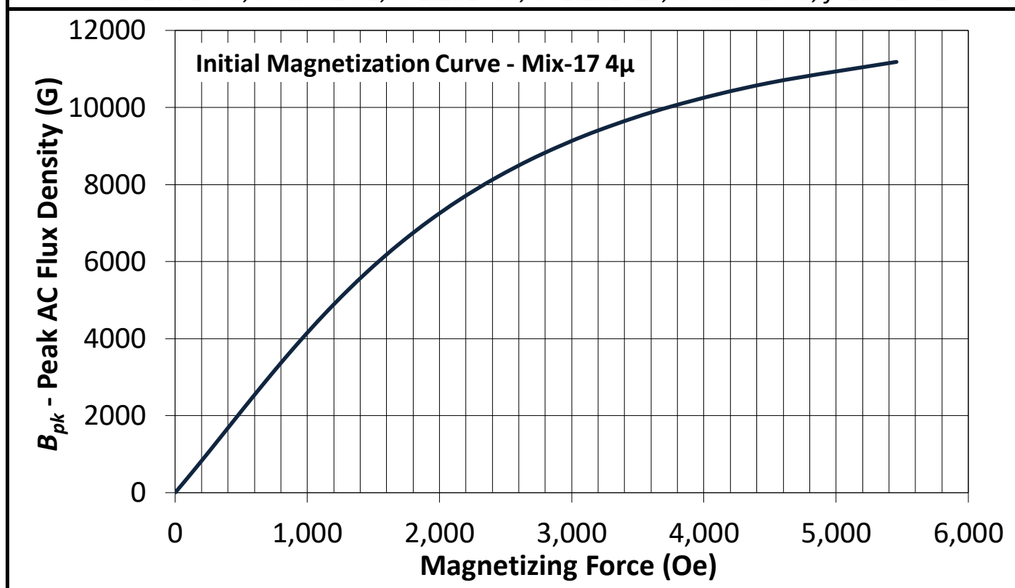
a=1.57E+03, b=4.50E-01, c=1.25E+00, d=1.16E+17, e=-3.70E+00, f=1.07E+02



$$\mu_i = \frac{1}{a + bf^{\ c}} + d$$

where f expressed in hertz, and:

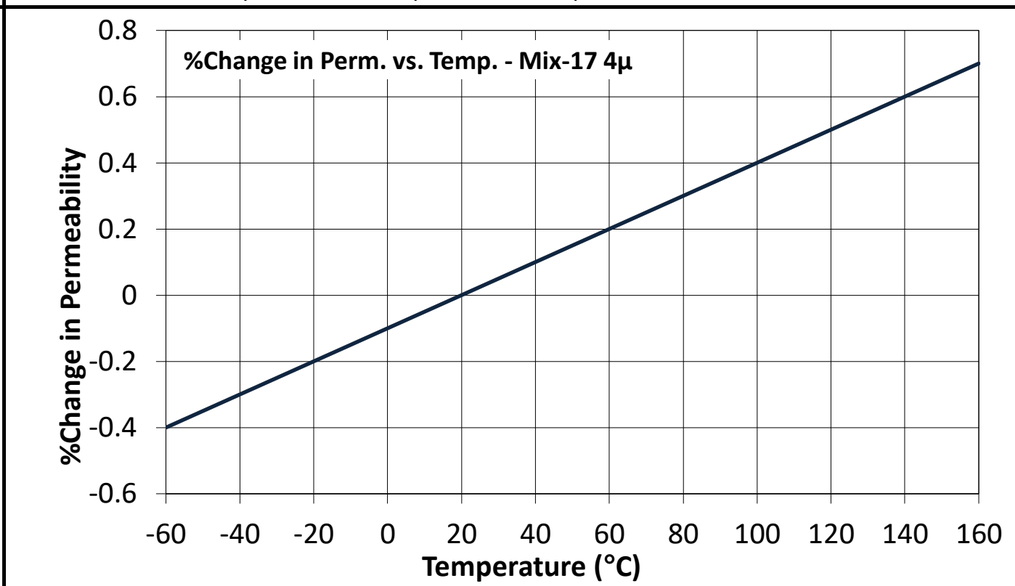
a=3.33E-01, b=7.01E-11, c=9.00E-01, d=1.00E+00



$$B_{pk} = \frac{\mu_i}{\frac{1}{H + aH^{\ b}} + \frac{1}{cH^{\ d}} + \frac{1}{e}}$$

where B_{pk} expressed in gauss, H in oested, and:

a=4.51E-04, b=2.03E+00, c=9.96E+08, d=1.58E-01, e=3.20E+03



$$\left(\frac{\Delta\mu_i}{\mu_i}\right) ppm = a(T - 20)$$

where T expressed in celsius, and:

a=50

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