Material Properties

CHARACTERISTIC	V	T	B	G	J	K*	P*	UNITS
Initial Permeability (µi)	15,000	10,000	5000	1500	850	125	40	
Loss Factor (tan δ/µi)	≤ 7	≤ 7	≤ 15	60		150	85	X 10^{-6}
at frequency =	0.01	0.01	0.1	0.1	0.1	10	10	MHz
Hysteresis Factor (h/μ^2)	-	-	< 2	10	6	-	-	X 10^{-6}
Saturation Flux Density (B_S)	370	380	450	320	280	320	215	*m*Tesla
	3700	3800	4500	3200	2800	3200	2150	Gauss
at H max=	1000	1000	1000	1000	1000	2000	2000	A/*m*
	12.6	12.6	12.6	12.6	12.6	25	25	Oersted
Remanence (B_r)	150	140	100	150	180	160	40	*m*Tesla
	1500	1400	1000	1500	1800	1600	400	Gauss
Coercivity (H_C)	2.4	3.2	5.6	19.9	31.8	119	278	A/*m*
	0.03	0.04	0.07	0.25	0.4	1.5	3.5	Oersted
Curie Temperature (T_C)**	≥ 120	≥ 120	≥ 165	≥ 130	≥ 140	≥ 350	≥ 350	°C
Temperature Coefficient of µi (α) -40°C to +80°C (T.C.)	0.8	0.8	0.9	1.0	1.0	0.1	0.1	%/°C
Volume Resistivity (p)	25	40	≥ 10^2	≥ 10^6	≥ 10^5	≥ 10^7	≥ 10^6	Ω-cm

*In K and P materials, permeability and loss factor will irreversibly increase if excited with high magnetizing force. This should be considered when applying DC or high AC currents for test purposes.

**Consult factory for newest curie temperature update.

All values are typical and measured at 25°C except as noted.

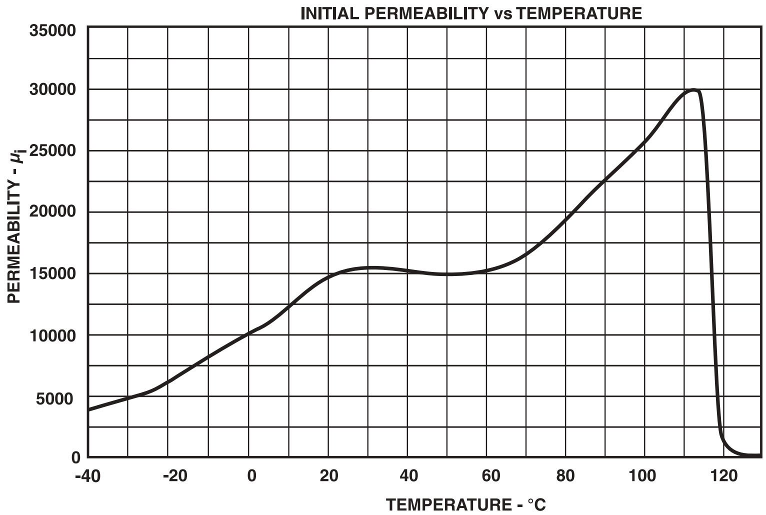
FERRITE MATERIAL CONSTANTS	
Specific heat	.25 cal/g/°C
Thermal conductivity	10 10^{-3} cal/sec/cm/°C
Coefficient of linear expansion	8-10 10^{-6}/°C
Tensile strength	7 10^3 lbs/in^2
Compressive strength	60 10^3 lbs/in^2
Youngs modulus	18 10^6 lbs/in^2
Hardness (Knoop)	650

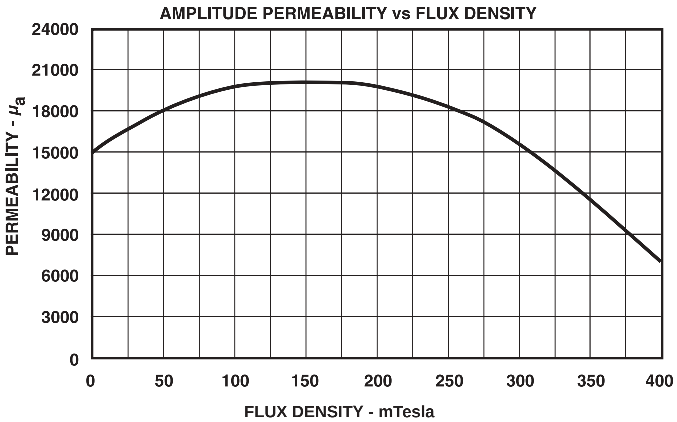
The above quoted properties are typical values on commercially available MnZn and NiZn ferrites.

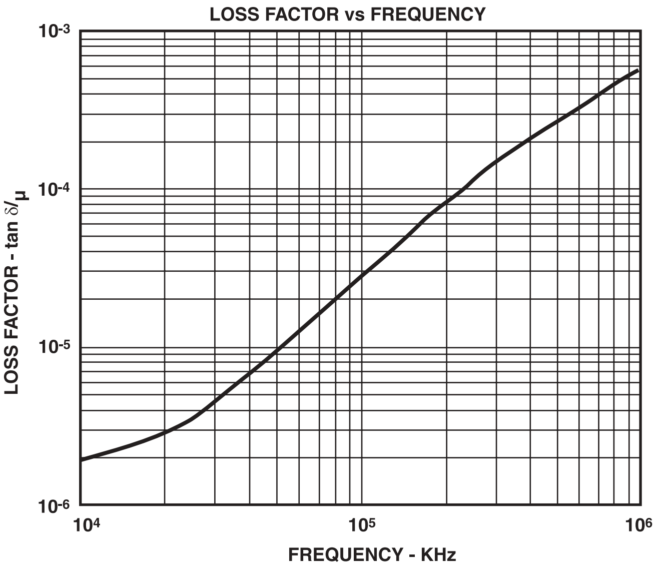
CONVERSION TABLE	
1 T (Tesla) = 1 Vs/m2	= 10^4 gauss
1 mT	= 10 gauss
1 A/m = 10^{-2} A/cm	= .01257 oersted
.1 mT	= 1 gauss
79.55 A/m	= 1 oersted

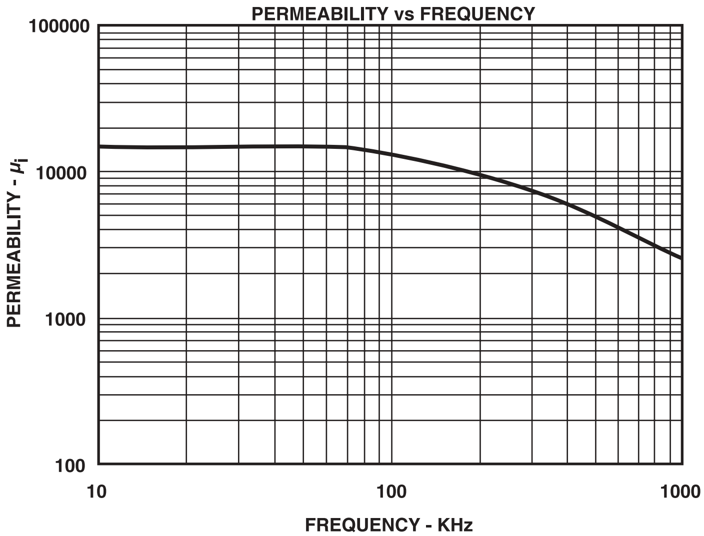
Material Properties

V MATERIAL (15,000μ_i) is a manganese-zinc ferrite characterized by high permeability with improved stability over temperature suitable for wide band filter and pulse applications.



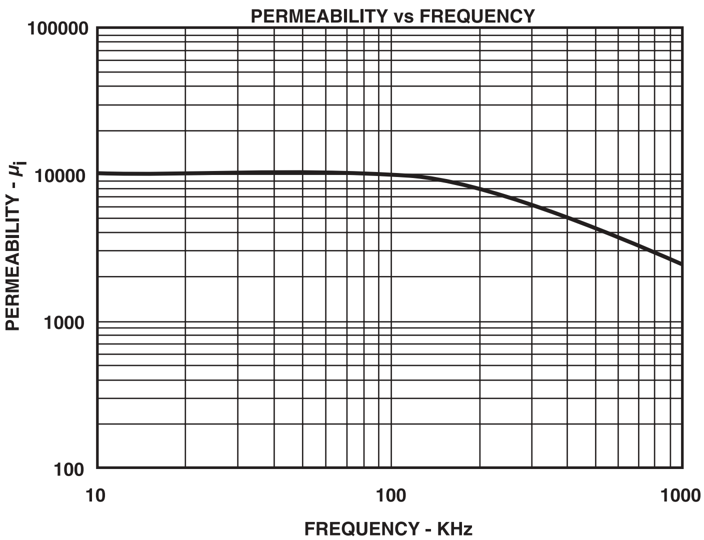


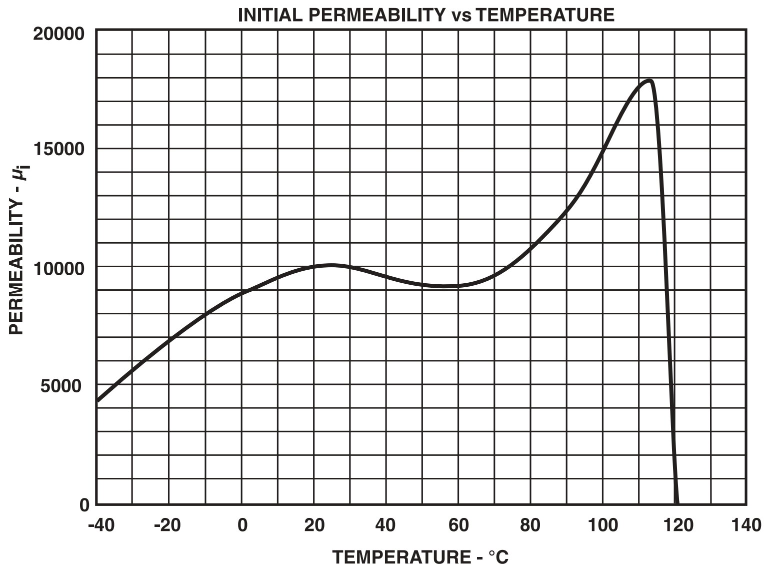


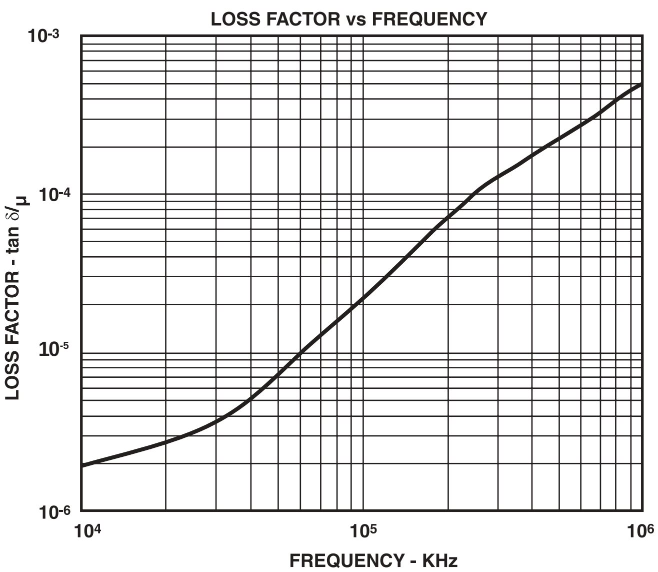


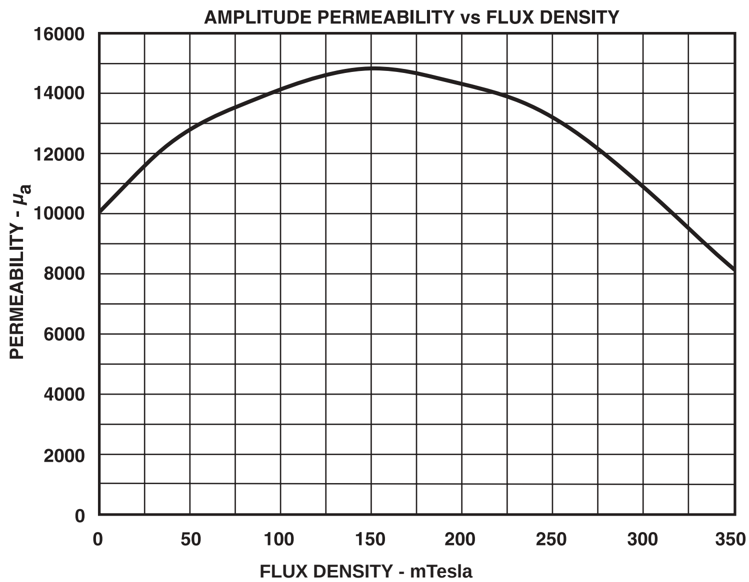
Material Properties

T MATERIAL (10,000μ_i) is a manganese-zinc ferrite characterized by high temperature stability suitable for wideband, filter and pulse applications.



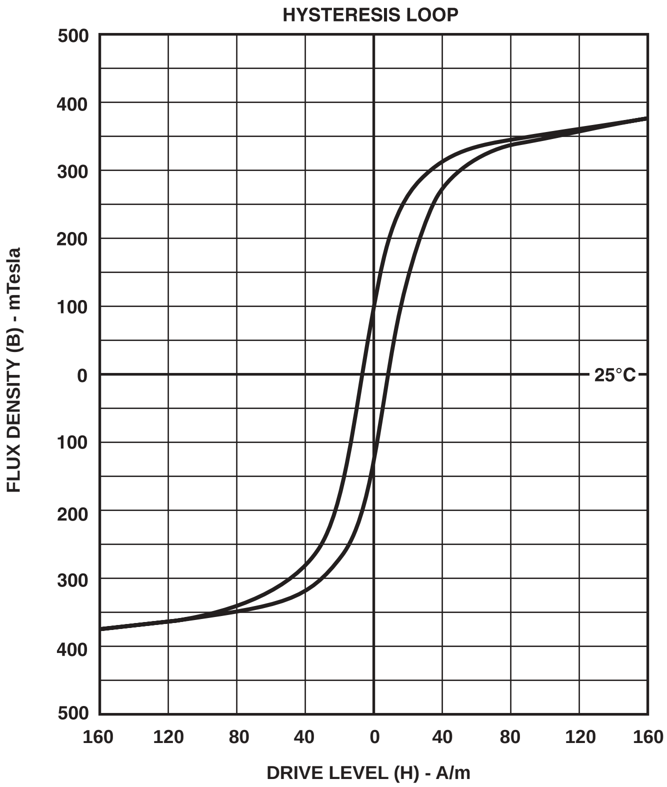


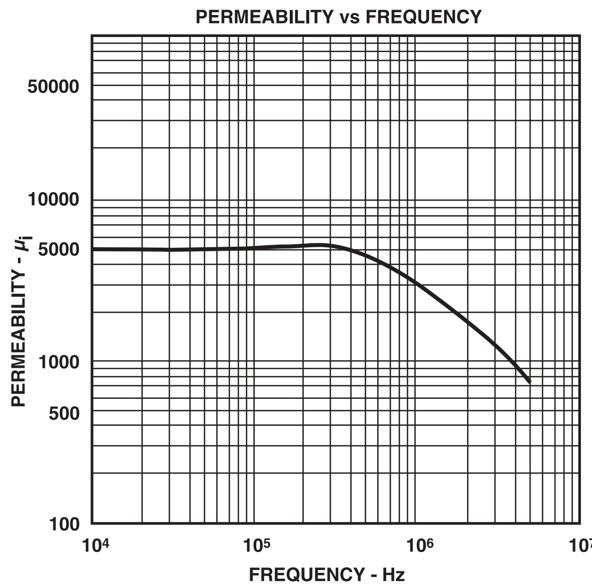


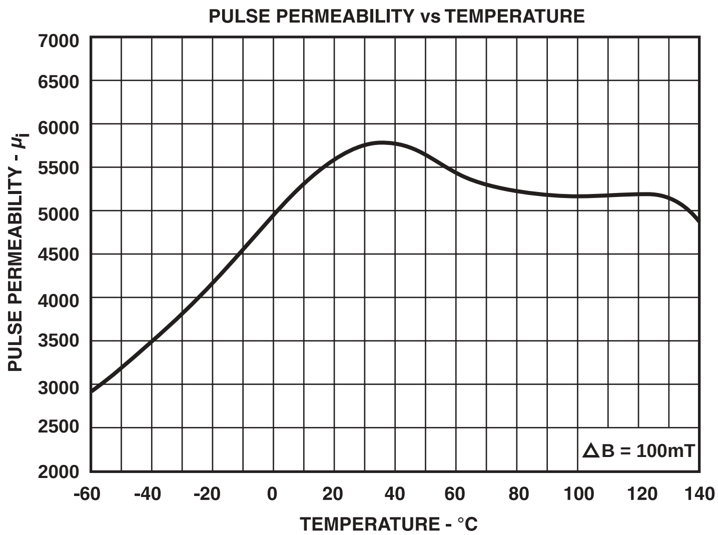


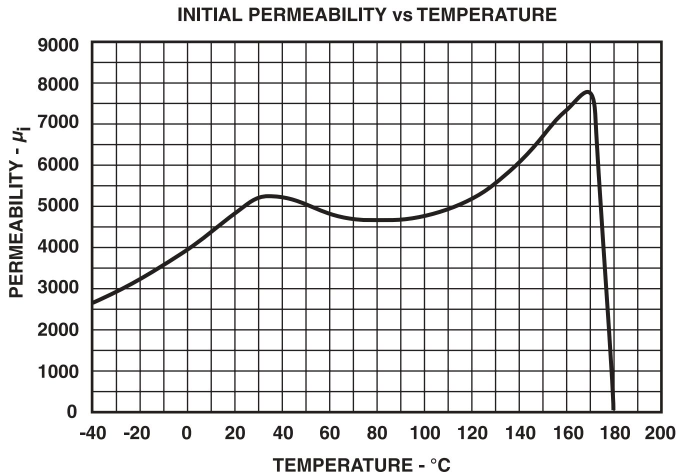
Material Properties

B MATERIAL (5,000μ_i) is a manganese-zinc ferrite suited for applications where high permeability and flux density and low power loss are required.



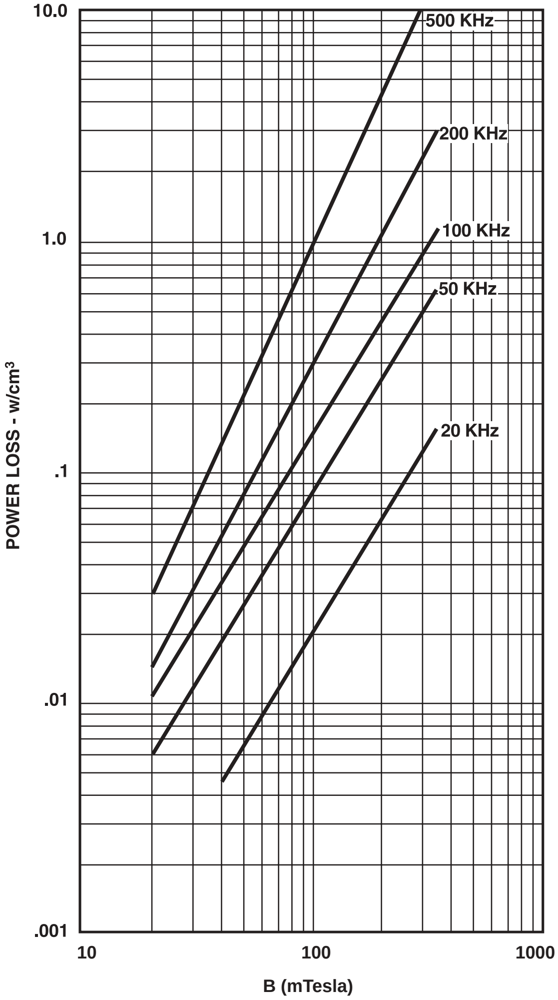




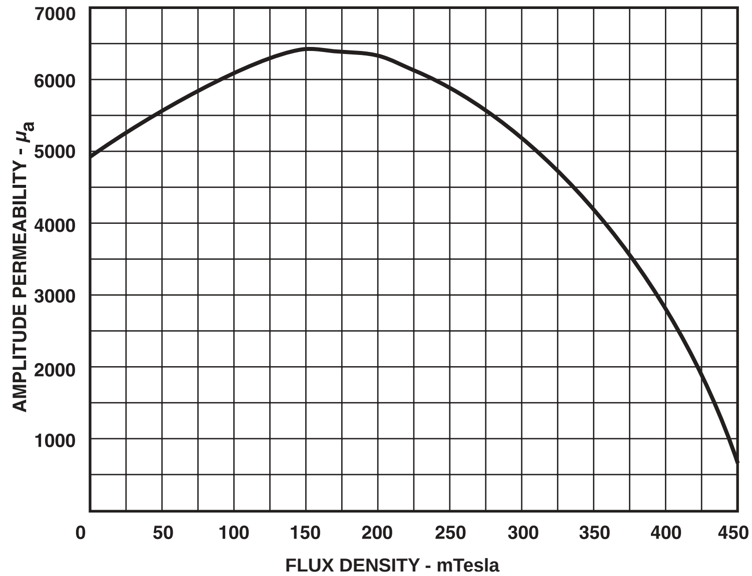


B MATERIAL

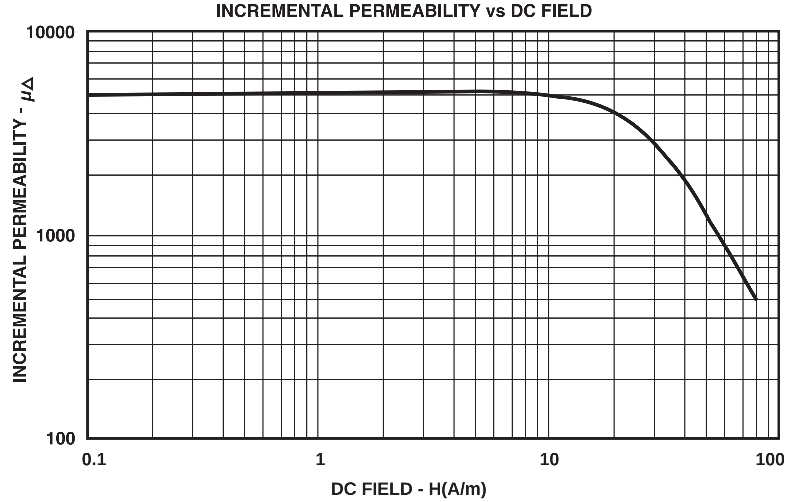
POWER LOSS vs FLUX DENSITY



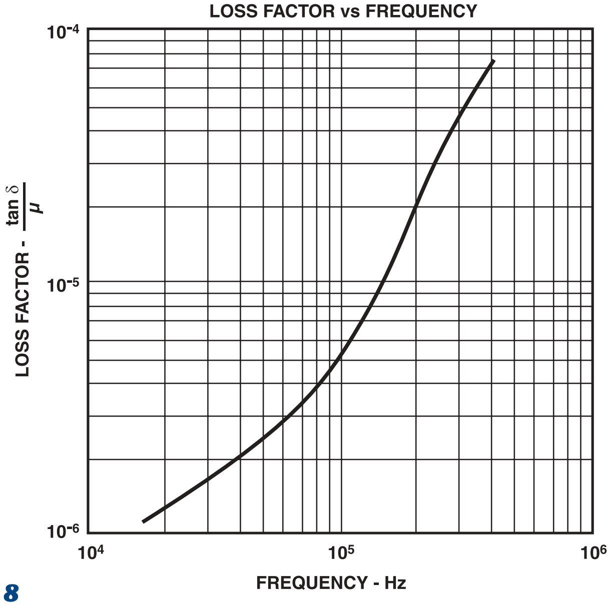
AMPLITUDE PERMEABILITY vs FLUX DENSITY



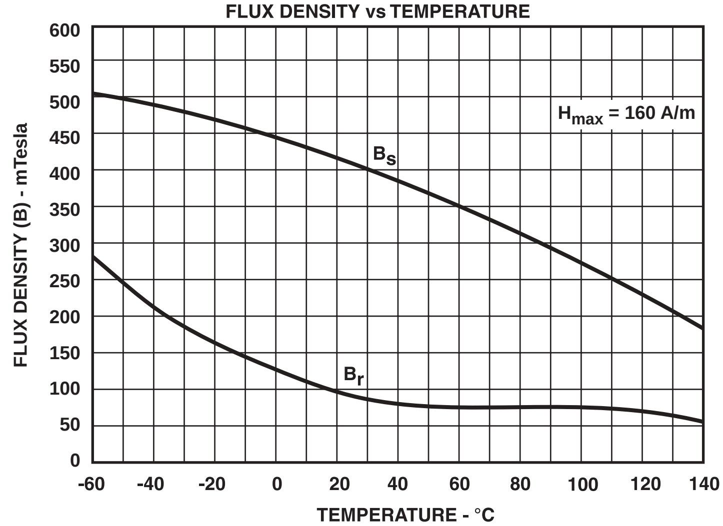
INCREMENTAL PERMEABILITY vs DC FIELD



LOSS FACTOR vs FREQUENCY

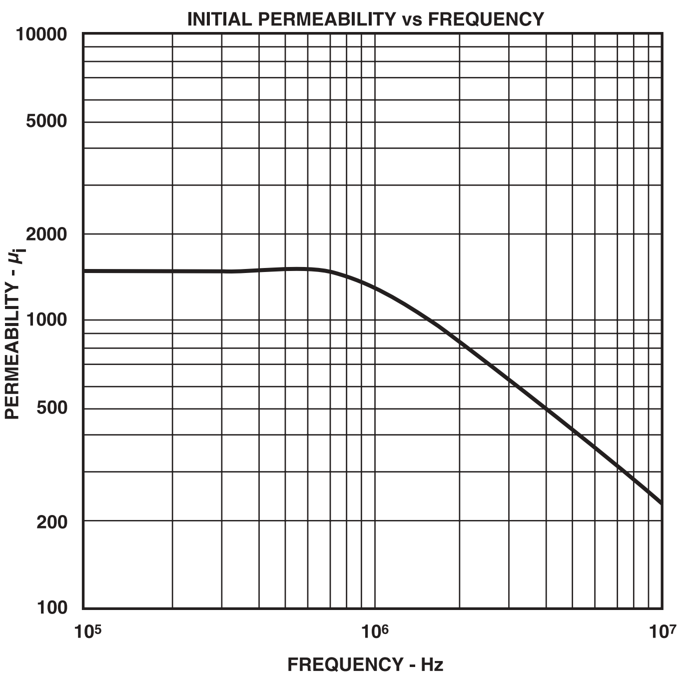


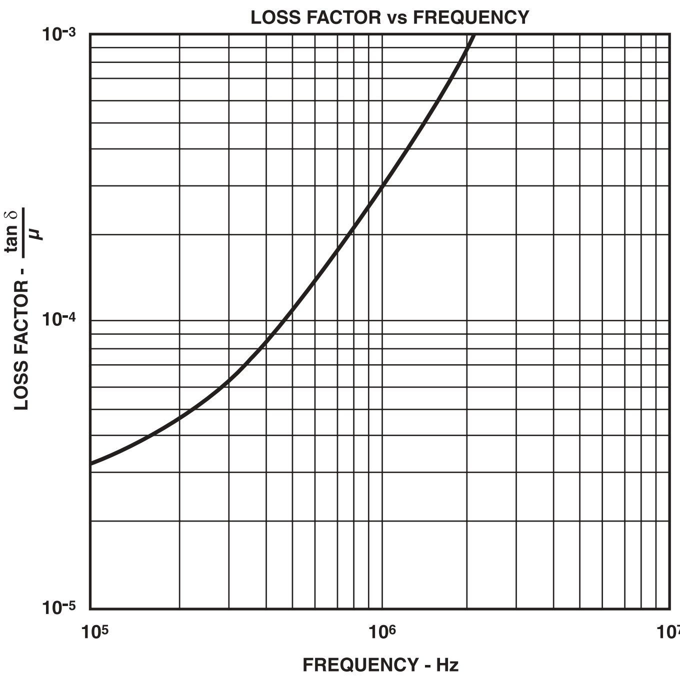
FLUX DENSITY vs TEMPERATURE



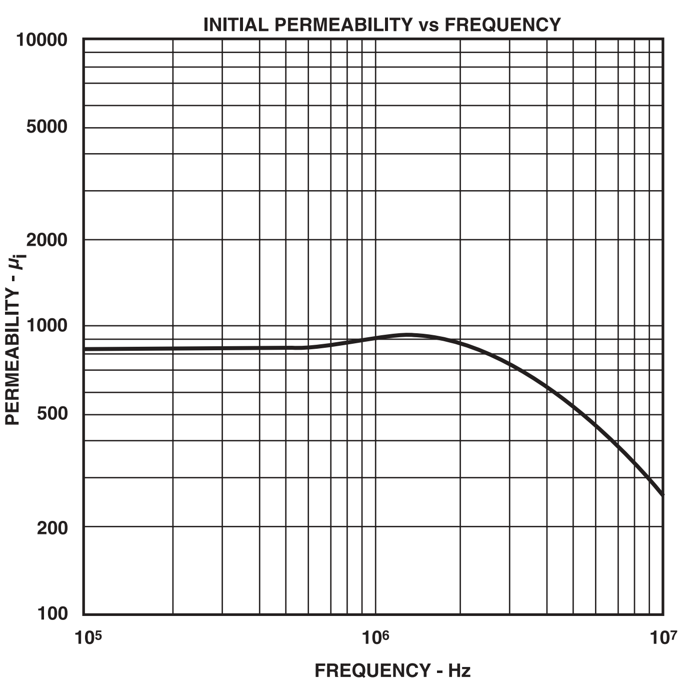
Material Properties

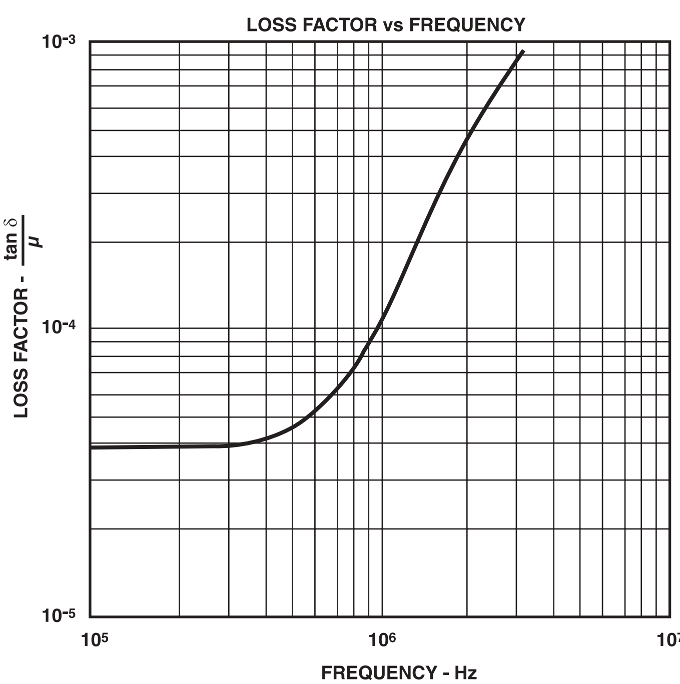
G MATERIAL (1,500μ_i) is a nickel-zinc ferrite with high permeability which allows for reduced core size enhancing high frequency performance in wideband applications.





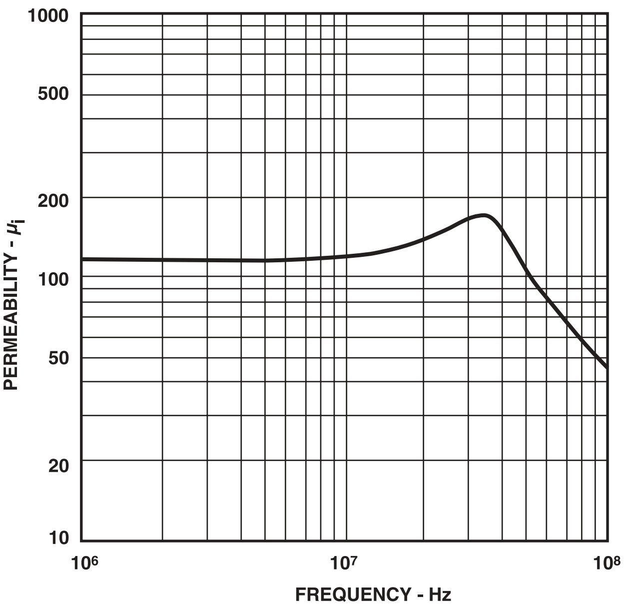
J MATERIAL (850μ_i) is a nickel-zinc ferrite useful at higher frequencies where high resistivity accounts for low eddy current losses. This makes it well suited for transformers and inductors operating above 500KHz and in particular for wideband devices above 5 MHz. It is also effective in 20 to 500 MHz noise suppression applications.



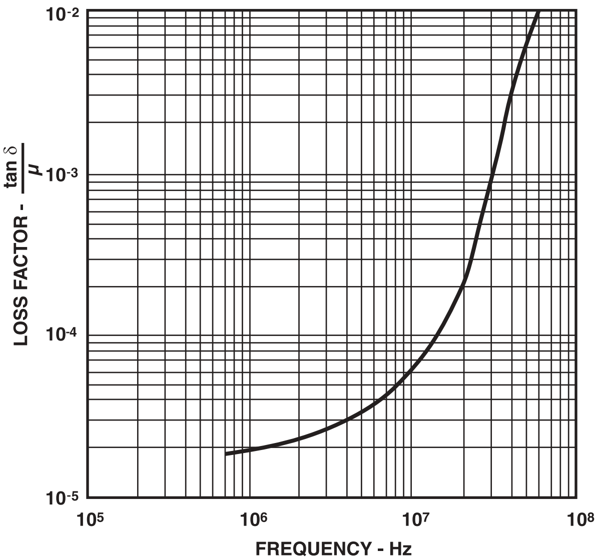


K MATERIAL (125μ_i) is a cobalt-nickel ferrite suited for higher frequency applications where low losses above 2MHz are required.

INITIAL PERMEABILITY vs FREQUENCY

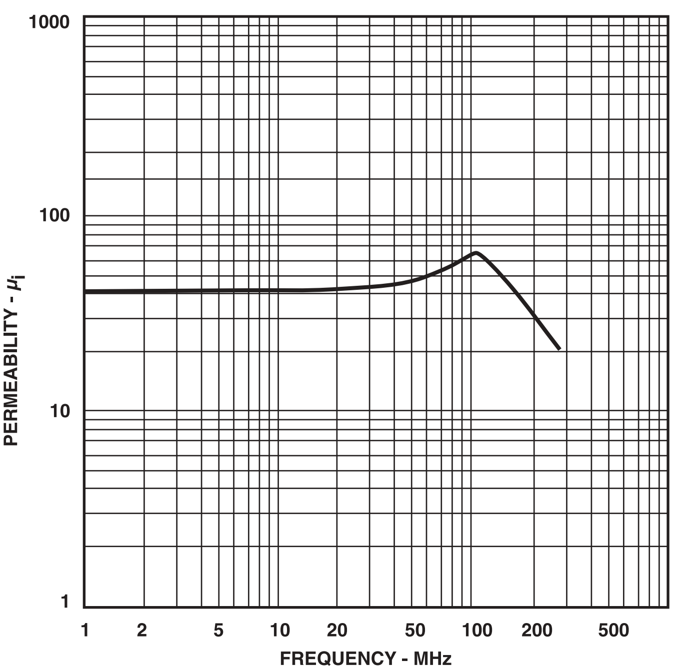


LOSS FACTOR vs FREQUENCY



P MATERIAL (40μ_i) is a cobalt-nickel-zinc ferrite suited for the highest frequency applications where low losses above 10 MHz are required.

INITIAL PERMEABILITY vs FREQUENCY



LOSS FACTOR vs FREQUENCY