



Magnetic Powder Cores

HTC200[®] Iron Powder Cores
Iron Powder Cores





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Iron Powder Cores

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HTC200[®] Iron Powder Cores

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Iron Powder Cores

Products Characteristics

Toroidal Cores

E Cores

Plain Cores

I Cores

Hollow Cores

Bus Bar Cores

U Cores

Magnetic Characteristics

Products Characteristics

Material Properties

Material Mix Number	(μ_0) Reference Permeability	Temp. Coef. Of Perm(+ppm/°C)	Coef. of in Expan(+ppm/°C)	Color Code
-2	10	100	10	Red/Clear
-8	35	285	10	Yellow/Red
-14	14	155	10	Black/Red
-18	55	385	11	Green/Red
-19	55	650	11	Red/Green
-26	75	825	12	Yellow/White
-28	22	510	11	Gray/Green
-30	22	510	11	Green/Gray
-33	33	665	11	Gray/Yellow
-34	33	565	11	Gray/Blue
-35	33	665	11	Yellow/Gray
-38	85	955	12	Gray/Black
-40	60	950	11	Green/Yellow
-45	100	1045	12	Black/Black
-52	75	650	12	Green/Blue

Core Loss Comparison(mW/cm³)

Material Mix No .	60Hz @5000Gs	1kHz @1500Gs	10kHz @500Gs	50kHz @225Gs	100kHz @140Gs	500kHz @50Gs	Permeability With DC Bias HDC=500e@10kHz	
							% μ_n	$\mu_{effective}$
-2	-	-	-	28	19	12	100	10.0
-8	45	64	59	50	35	28	91	31.9
-14	-	-	-	29	21	17	100	14.0
-18	48	72	70	63	46	37	74	40.7
-19	31	60	72	71	54	49	74	40.7
-26	32	60	75	89	83	139	51	38.3
-28	38	80	120	164	158	247	91	20.0
-30	37	80	120	149	129	129	91	20.0
-33	37	80	126	182	180	291	84	27.7
-34	29	61	87	100	82	78	84	27.7
-35	33	73	109	137	119	123	84	27.7
-38	31	57	72	99	103	217	51	43.4
-40	29	62	93	130	127	223	62	37.7
-45	26	49	60	69	61	92	46	46.0
-52	30	56	68	72	58	63	59	44.3

Products Characteristics

Temperature Characteristics

Typical operating temperature for iron powder core is between -65°C to $+125^{\circ}\text{C}$. If the operating temperature is above 150°C , the organic epoxy-resin binder starts to decompose, resulting in characteristics degradation in terms of temperature rise (watt losses), DC bias as well as life time. Such phenomenon really depends on operating time period, temperature, core size, switching frequency and the flux density.

Surface Coating

The toroidal and bus bar cores listed in this catalogue are epoxy-coated. All finishes can resist most cleaning solvents. Extended exposures to certain solvents may have detrimental effects. The E Cores and the U cores are treated to resist corrosion. Coating is tested at 50Hz, 1250Vrms for 5 seconds to meet the minimum dielectric strength (Hi-pot test). The toroidal cores can be double or triple coated for greater dielectric strength.

Magnetic Tolerance

Material (Mix No.)	-2	-8	-14	-18	-19	-26	-28	-30	-33	-34	-35	-38	-40	-45	-52
A_L Tolerance	$\pm 10\%$	$\pm 10\%$	$\pm 10\%$	$\pm 10\%$	$\pm 10\%$	$\pm 10\%$	$\pm 10\%$	$\pm 10\%$	$\pm 10\%$	$\pm 10\%$	$\pm 10\%$	$\pm 10\%$	$\pm 10\%$	$\pm 10\%$	$\pm 10\%$

Cores are manufactured based on their A_L values within certain tolerance. The permeability of each material is only for reference. A_L value is tested under 10kHz and 10G (or 1mT) at all time. For toroids, winding should be fully and evenly distributed throughout the core to minimize the leakage inductance. Iron powder toroidal cores will always have higher inductance measurement reading than expected if the number of turns is low resulting in winding not evenly distributed throughout the core. For E-cores, 100 turns will be used as the standard testing criteria. The typical tolerance of A_L value shown above is $\pm 10\%$ while the tolerance of core loss curve for the above listed materials is $\pm 15\%$.

Products Characteristics

Material Description

Material description

-2/-14 Materials: The low permeability of these materials will result in lower operating AC flux density than other materials with no additional gap-loss. The -14 Material is similar to -2 Material with slightly higher permeability.

-8/Material: This material has low core loss and good linearity under high bias conditions. A good high frequency material. The highest cost material.

-18Material: This material has low core loss similar to the -8 Material with higher permeability and a lower cost. Good DC saturation characteristics.

-19Material: An inexpensive alternate to the -18 Material with the same permeability and somewhat higher core losses.

-26Material: The most popular material. It is a cost effective general purpose material that is useful in a wide variety of power conversion and line filter applications.

-28/-30Materials: The good linearity, low cost, and relatively low permeability of this material make it popular in large sizes for high power UPS chokes.

-33/-34/-35 Materials: An inexpensive alternate to the -8 Material for applications where high frequency core loss is not critical. Good linearity with high bias.

-38Material: with its high magnetic permeability, is a low budget alternate of -26 Material. It is the best choice for linear frequency application.

-40Material: The least expensive material. It has characteristics quite similar to the very popular -26 Material. Popular in large sizes.

-45Material: The highest permeability Material. A high permeability alternate to -52 Material with slightly higher core losses.

-52Material: This Material has lower core loss at high frequency and the same permeability as the -26 Material. It is very popular for high frequency choke designs.

Products Characteristics

Material Applications

Typical Application	-2	-8	-14	-18	-19	-26	-28	-30	-33	-34	-35	-38	-40	-45	-52
Light Dimmer Chokes						X						X	X	X	
60 Hz Differential-mode EMI Line Chokes						X						X	X	X	X
DC Chokes: < 50kHz or low Et/N(Buck/Boost)						X	X	X	X	X	X	X	X	X	
DC Chokes: ≥ 50kHz or higher Et/N(Buck/Boost)		X	X	X	X		X	X	X	X	X				X
Power Factor Correction Chokes: < 50kHz						X	X	X	X	X	X		X		
Power Factor Correction Chokes: ≥ 50kHz	X	X	X	X	X		X	X	X	X	X				
Resonant Inductors: ≥ 50kHz	X		X												

Core Tolerance(mm)

Toroidal Cores	KDM Part No.	OD	ID	HT	KDM Part No.	OD	ID	HT
	KT14 - KT20	± 0.25	± 0.25	± 0.25	KT150- KT225	± 0.63	± 0.63	± 0.75
	KT22 - KT38	± 0.38	± 0.38	± 0.50	KT249 - KT400	± 0.75	± 0.75	± 0.75
	KT40 - KT72	± 0.50	± 0.50	± 0.50	KT520 - KT650	± 1.25	± 1.25	± 1.25
	KT80 - KT141	± 0.50	± 0.50	± 0.63				

Tolerance includes coating

E Cores	KDM Part No.	A	B	C	D	F	G	MAX GAP*
	KE13 - KE30	± 0.25	± 0.25	± 0.12	± 0.17	± 0.12	± 0.17	± 0.038
	KE32 - KE41	± 0.38	± 0.38	± 0.17	± 0.25	± 0.17	± 0.25	± 0.038
	KE43 - KE57	± 0.38	± 0.38	± 0.25	± 0.25	± 0.17	± 0.25	± 0.05
	KE77 - KE114	± 0.75	± 0.75	± 0.38	± 0.50	± 0.38	± 0.50	± 0.07
	KE155	± 1.0	± 1.0	± 0.63	± 0.75	± 0.63	± 0.75	± 0.12

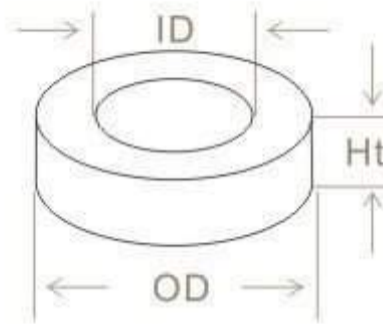
Gap per piece

Toroidal Cores

TYPICAL PART NO . KT 50-52 B

KDM Toroidal Cores
 OD in 100th inches
 KDM Material Mix No.
 Letter Indicates Alternate Height

ℓ_e : (Mean Magnetic Path Length)
 A_c : (Cross Section Area)
 V : (Core Volume)



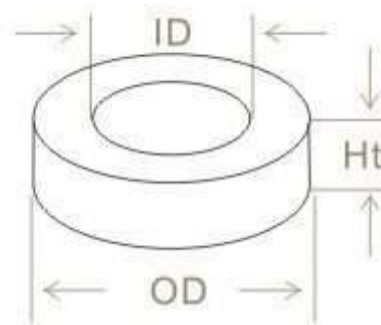
KDM Part No.	A_c nH/N ²	OD in/mm	ID in/mm	Ht in/mm	ℓ_e cm	A_c cm ²	V cm ³
KT14-26A	12.5	.135/3.43	.067/1.70	.060/1.52	.810	.012	.0098
KT14-45A	16.5						
KT14-52A	11.5						
KT16-2	2.2	.160/4.06	.078/1.98	.060/1.52	.930	.015	.014
KT16-8	6.0						
KT16-18	9.5						
KT16-26	14.5						
KT16-40	12.5						
KT16-45	17.0						
KT16-52	13.5						
KT20-2	2.5	.200/5.08	.088/2.24	.070/1.78	1.15	.023	.026
KT20-8	7.8						
KT20-18	13.0						
KT20-26	18.5						
KT20-40	16.0						
KT20-45	22.5						
KT20-52	17.5						
KT22-26	38.5	.223/5.66	.097/2.46	.143/3.63	1.28	.052	.067
KT22-52	38.5						
KT25-2	3.4	.225/6.48	.120/3.05	.096/2.44	1.50	.037	.055
KT25-8	10.0						
KT25-18	17.0						
KT25-26	24.5						
KT25-40	20.5						
KT25-52	31.0						
KT25-52	23.0						
KT26-8	24.0	.265/6.73	.105/2.67	.190/4.83	1.47	.090	.133
KT26-18	41.5						
KT26-26	57.0						
KT26-45	77.0						
KT26-52	56.0						
KT27-2	3.3	.280/7.11	.151/3.84	.128/3.25	1.71	.047	.080
KT27-8	11.5						
KT27-18	18.5						
KT27-26	27.5						
KT27-52	25.5						
KT30-2	4.3	.307/7.80	.151/3.84	.128/3.25	1.84	.060	.110
KT30-8	14.0						
KT30-18	22.0						
KT30-26	33.5						
KT30-40	28.0						
KT30-45	40.5						
KT30-52	30.5						

Toroidal Cores

TYPICAL PART NO. KT 50-52 B

KDM Toroidal Cores
 OD in 100th inches
 KDM Material Mix No.
 Letter Indicates Alternate Height

ℓ_m : (Mean Magnetic Path Length)
 A_c : (Cross Section Area)
 V : (Core Volume)



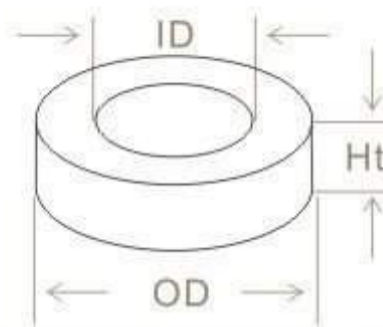
KDM Part No.	A_c nH/N ²	OD in/mm	ID in/mm	Ht in/mm	ℓ_m cm	A_c cm ²	V cm ³
KT32-52	35.0	.327/8.31	.169/4.29	.158/4.01	1.96	.073	.144
KT37-2	4.0	.375/9.53	.205/5.21	.128/3.25	2.31	.064	.147
KT37-8	12.0						
KT37-18	19.0						
KT37-19	19.0						
KT37-26	28.5						
KT37-40	24.5						
KT37-45	34.0						
KT37-52	26.0						
KT38-2	7.4	.375/9.53	.175/4.45	.190/4.83	2.18	.114	.248
KT38-8	20.0						
KT38-18	36.0						
KT38-19	36.0						
KT38-26	49.0						
KT38-40	41.5						
KT38-45	65.0						
KT38-52	49.0						
KT40-26	36.0	.400/10.2	.205/5.21	.163/4.14	2.41	.093	.223
KT40-52	36.0						
KT44-2	5.2	.440/11.2	.229/5.82	.159/4.04	2.68	.099	.266
KT44-8	18.0						
KT44-14	6.2						
KT44-18	25.5						
KT44-19	25.5						
KT44-26	37.0						
KT44-40	31.0						
KT44-45	46.5						
KT44-52	35.0						
KT44-52C	55.0	.440/11.2	.229/5.82	.250/6.35	2.68	.157	.419
KT44-52D	70.0	.440/11.2	.229/5.82	.338/8.59	2.68	.212	.567
KT50-2	4.9	.500/12.7	.303/7.70	.190/4.83	3.19	.112	.358
KT50-8	17.5						
KT50-14	5.9						
KT50-18	24.0						
KT50-19	24.0						
KT50-26	33.0						
KT50-38	37.5						
KT50-40	29.5						
KT50-45	44.0						
KT50-52	33.0						

Toroidal Cores

TYPICAL PART NO. KT 50-52 B

KDM Toroidal Cores
 OD in 100th inches
 KDM Material Mix No.
 Letter Indicates Alternate Height

ℓ_m : (Mean Magnetic Path Length)
 A: (Cross Section Area)
 V: (Core Volume)



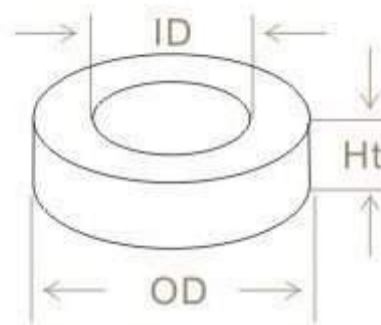
KDM Part No.	A _c nH/N ²	OD in/mm	ID in/mm	Ht in/mm	ℓ_m cm	A _c cm ²	V cm ³
KT50-8B	23.0	.500/12.7	.303/7.70	.250/6.35	3.19	.148	.471
KT50-18B	32.0						
KT50-19B	32.0						
KT50-26B	43.5						
KT50-38B	49.5						
KT50-40B	38.5						
KT50-45B	58.0						
KT50-52B	43.5						
KT50-8C	28.3	.500/12.7	.303/7.70	.335/8.51	3.19	.200	.637
KT50-26C	61.0						
KT50-26D	72.0	.500/12.7	.303/7.70	.375/9.53	3.19	.223	.711
KT50-40D	59.0						
KT50-52D	66.0						
KT51-8C	37.0	.500/12.7	.200/5.08	.250/6.35	2.79	.223	.622
KT51-18C	55.0						
KT51-26C	83.0						
KT51-40C	67.0						
KT51-52C	75.0						
KT57-45	67.0	.573/14.6	.273/6.93	.196/4.98	3.38	.178	.601
KT57-52	49.5						
KT57-45A	88.0	.573/14.6	.273/6.93	.263/6.68	3.38	.239	.805
KT57-52A	66.0						
KT60-2	6.5	.600/15.2	.336/8.53	.234/5.94	3.74	.187	.699
KT60-8	19.0						
KT60-14	8.3						
KT60-18	34.5						
KT60-19	34.5						
KT60-26	50.0						
KT60-40	41.5						
KT60-52	47.0						
KT60-26D	97.0	.600/15.2	.336/8.53	.470/11.9	3.74	.374	1.400
KT60-52D	94.0						
KT68-2	5.7	.690/17.5	.370/9.40	.190/4.83	4.23	.179	.759
KT68-8	19.5						
KT68-14	7.0						
KT68-18	29.0						
KT68-19	29.0						
KT68-26	43.5						
KT68-38	45.0						
KT68-40	35.0						
KT68-45	53.0						
KT68-52	40.0						

Toroidal Cores

TYPICAL PART NO .KT 50-52 B

KDM Toroidal Cores
 OD in 100th inches
 KDM Material Mix No.
 Letter Indicates Alternate Height

l_m : (Mean Magnetic Path Length)
 A : (Cross Section Area)
 V : (Core Volume)



KDM Part No.	A_c nH/N ²	OD in/mm	ID in/mm	Ht in/mm	l_m cm	A_c cm ²	V cm ³
KT68-2A	7.0	.690/17.5	.370/9.40	.250/6.35	4.23	.242	1.03
KT68-8A	26.0						
KT68-14A	9.5						
KT68-18A	39.5						
KT68-19A	39.5						
KT68-26A	58.0						
KT68-38A	61.0						
KT68-40A	47.0						
KT68-45A	71.0						
KT68-52A	54.0						
KT68-2D	11.4	.690/17.5	.370/9.40	.375/9.53	4.23	.358	1.52
KT68-14D	14.2						
KT68-26D	87.0						
KT68-40D	70.0						
KT68-52D	80.0	.690/17.5	.336/8.53	.367/9.32	4.09	.394	1.61
KT69-45	120.0						
KT72-2	12.8	.720/18.3	.280/7.11	.260/6.60	4.01	.349	1.40
KT72-8	36.0						
KT72-18	60.0						
KT72-26	90.0						
KT72-40	71.0						
KT72-52	82.0						
KT80-2	5.5	.795/20.2	.495/12.6	.250/6.35	5.14	.231	1.19
KT80-8	18.0						
KT80-14	7.4						
KT80-18	31.0						
KT80-19	31.0						
KT80-26	46.0						
KT80-38	48.0						
KT80-40	39.5						
KT80-45	56.0						
KT80-52	42.0						
KT80-8B	29.5	.795/20.2	.495/12.6	.375/9.53	5.14	.347	1.78
KT80-14B	11.0						
KT80-18B	46.5						
KT80-19B	46.5						
KT80-26B	71.0						
KT80-38B	72.0						
KT80-40B	59.0						
KT80-45B	84.0						
KT80-52B	63.0						
KT80-26D	92.0	.795/20.2	.495/12.6	.500/12.7	5.14	.453	2.33
KT80-40D	79.0						
KT80-52D	83.0						

Toroidal Cores

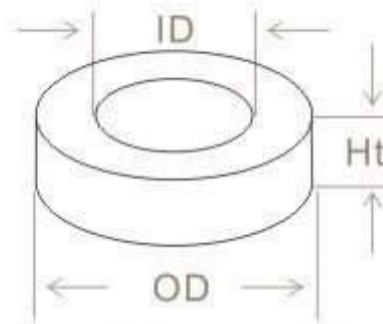
TYPICAL PART NO. KT 50-52 B

KDM Toroidal Cores
 OD in 100th inches
 KDM Material Mix No.
 Letter Indicates Alternate Height

l_m : (Mean Magnetic Path Length)

A_c : (Cross Section Area)

V_c : (Core Volume)



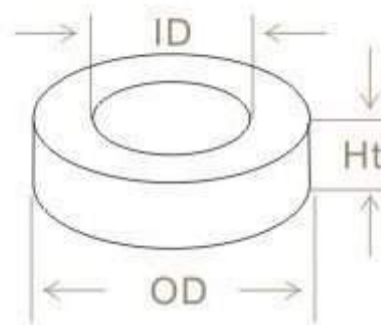
KDM Part No.	A_c nH/N ²	OD in/mm	ID in/mm	Ht in/mm	l_m cm	A_c cm ²	V_c cm ³
KT90-8	30.0	.900/22.9	.550/14.0	.375/9.53	5.78	.395	2.28
KT90-18	47.0						
KT90-19	47.0						
KT90-26	70.0						
KT90-38	73.0						
KT90-40	57.0						
KT90-45	85.0						
KT90-52	64.0						
KT94-2	8.4	.942/23.9	.560/14.2	.312/7.92	5.97	.362	2.16
KT94-8	25.0						
KT94-14	10.0						
KT94-18	42.0						
KT94-19	42.0						
KT94-26	60.0						
KT94-38	65.0						
KT94-40	49.0						
KT94-45	76.0						
KT94-52	57.0						
KT95-26B	84.0	.942/23.9	.495/12.6	.375/9.53	5.72	.510	2.91
KT95-52B	84.0						
KT106-2	13.5	1.060/26.9	.570/14.5	.437/11.1	6.49	.659	4.28
KT106-8	45.0						
KT106-14	17.0						
KT106-18	70.0						
KT106-19	70.0						
KT106-26	93.0						
KT106-28	30.0						
KT106-30	30.0						
KT106-33	40.0						
KT106-34	40.0						
KT106-35	40.0						
KT106-38	108.0						
KT106-40	81.0						
KT106-45	125.0						
KT106-52	95.0						
KT106-18A	49.0	1.060/26.9	.570/14.5	.312/7.92	6.49	.461	3.00
KT106-26A	67.0						
KT106-40A	58.0						
KT106-52A	67.0						
KT106-18B	91.0	1.060/26.9	.570/14.5	.575/14.6	6.49	.858	5.57
KT106-19B	91.0						
KT106-26B	124.0						
KT106-40B	106.0						
KT106-52B	124.0						
KT124-26	58.0	1.245/31.6	.710/18.0	.280/7.11	7.75	.459	3.55
KT130-2	11.0	1.300/33.0	.780/19.8	.437/11.1	8.28	.698	5.78
KT130-8	35.0						
KT130-14	14.0						
KT130-18	58.0						
KT130-19	58.0						

Toroidal Cores

TYPICAL PART NO . KT 50-52 B

KDM Toroidal Cores
 OD in 100th inches
 KDM Material Mix No.
 Letter Indicates Alternate Height

l_m : (Mean Magnetic Path Length)
 A : (Cross Section Area)
 V : (Core Volume)



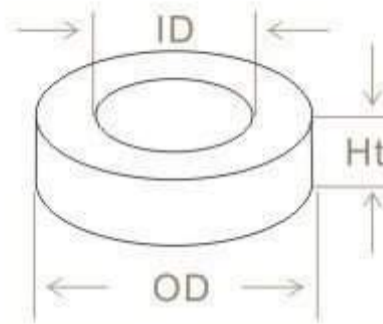
KDM Part No.	A_c nH/N ²	OD in/mm	ID in/mm	Ht in/mm	l_m cm	A_c cm ²	V cm ³
KT130-26	81.0	1.300/33.0	.780/19.8	.438/11.1	8.28	.698	5.78
KT130-28	25.0						
KT130-30	25.0						
KT130-33	33.5						
KT130-34	33.5						
KT130-35	33.5						
KT130-38	90.0						
KT130-40	69.0						
KT130-45	105.0						
KT130-52	79.0						
KT130-26A	41.0	1.300/33.0	.780/19.8	.225/5.72	8.28	.361	2.99
KT130-40A	34.0						
KT131-8	52.5	1.300/33.0	.640/16.3	.437/11.1	7.72	.885	6.84
KT131-18	79.0						
KT131-19	79.0						
KT131-26	116.0						
KT131-33	46.5						
KT131-34	46.5						
KT131-35	46.5						
KT131-40	93.0						
KT131-52	108.0						
KT132-26	103.0	1.300/33.0	.700/17.8	.437/11.1	7.96	.805	6.41
KT132-40	83.0						
KT132-52	95.0						
KT141-8	32.0	1.415/35.9	.880/22.4	.412/10.5	9.14	.674	6.16
KT141-26	75.0						
KT141-40	60.0						
KT141-52	69.0						
KT150-18	65.0	1.510/38.4	.845/21.5	.437/11.1	9.38	.887	8.31
KT150-26	96.0						
KT150-40	78.0						
KT150-52	89.0						
KT150-26A	66.0	1.510/38.4	.845/21.5	.325/8.26	9.38	.657	6.16
KT150-38A	74.5						
KT150-45A	84.0						
KT157-2	14.0	1.570/39.9	.950/24.1	.570/14.5	10.1	1.06	10.7
KT157-8	42.0						
KT157-14	17.5						
KT157-18	73.0						
KT157-19	73.0						
KT157-26	100.0						
KT157-28	31.5						
KT157-30	31.5						
KT157-33	43.5						
KT157-34	43.5						
KT157-35	43.5						
KT157-38	112.0						
KT157-40	86.0						
KT157-45	130.0						
KT157-52	99.0						

Toroidal Cores

TYPICAL PART NO . KT 50-52 B

KDM Toroidal Cores
 OD in 100th inches
 KDM Material Mix No.
 Letter Indicates Alternate Height

l_m : (Mean Magnetic Path Length)
 A_c : (Cross Section Area)
 V : (Core Volume)



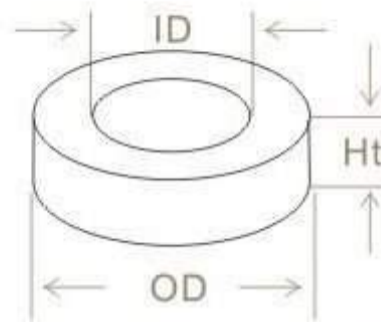
KDM Part No.	A_c nH/N ²	OD in/mm	ID in/mm	Ht in/mm	l_m cm	A_c cm ²	V cm ³
KT175-2	15.0	1.750/44.5	1.070/27.2	.650/16.5	11.2	1.34	15.0
KT175-8	48.0						
KT175-18	82.0						
KT175-26	105.0						
KT175-40	90.0						
KT175-52	105.0						
KT184-2	24.0	1.840/46.7	.950/24.1	.710/18.0	11.2	1.88	21.0
KT184-8	72.0						
KT184-14	28.0						
KT184-18	116.0						
KT184-19	116.0						
KT184-26	169.0						
KT184-28	51.0						
KT184-30	51.0						
KT184-33	70.0						
KT184-34	70.0						
KT184-35	70.0						
KT184-40	143.0						
KT184-52	159.0						
KT200-2	12.0	2.000/50.8	1.250/31.8	.550/14.0	13.0	1.27	16.5
KT200-8	42.5						
KT200-18	67.0						
KT200-19	67.0						
KT200-26	92.0						
KT200-33	37.0						
KT200-34	37.0						
KT200-35	37.0						
KT200-40	79.0						
KT200-52	92.0						
KT200-2B	21.8	2.000/50.8	1.250/31.8	1.000/25.4	13.0	2.32	30.00
KT200-8B	78.5						
KT200-18B	120.0						
KT200-19B	120.0						
KT200-26B	160.0						
KT200-30B	51.0						
KT200-35B	74.0						
KT200-40B	142.0						
KT200-52B	155.0						
KT201-8	104.0	2.000/50.8	.950/24.1	.875/22.2	11.8	2.81	33.2
KT201-18	164.0						
KT201-26	224.0						
KT201-40	194.0						
KT201-52	224.0						
KT224-26C	155.0	2.250/57.2	1.250/31.8	.750/19.1	14.0	2.31	32.2
KT224-52C	155.0						
KT225-2	12.0	2.250/57.2	1.405/35.7	.550/14.0	14.6	1.42	20.7
KT225-8	42.5						
KT225-18	67.0						
KT225-19	67.0						

Toroidal Cores

TYPICAL PART NO .KT 50-52 B

KDM Toroidal Cores
 OD in 100th inches
 KDM Material Mix No.
 Letter Indicates Alternate Height

l_e : (Mean Magnetic Path Length)
 A: (Cross Section Area)
 V: (Core Volume)



KDM Part No.	A_c nH/N ²	OD in/mm	ID in/mm	Ht in/mm	l_e cm	A_c cm ²	V cm ³
KT225-26	98.0	2.250/57.2	1.405/35.7	.550/14.0	14.6	1.42	20.7
KT225-28	28.0						
KT225-30	28.0						
KT225-33	37.0						
KT225-34	37.0						
KT225-35	37.0						
KT225-40	78.0						
KT225-52	92.0						
KT225-2B	21.5	2.250/57.2	1.405/35.7	1.000/25.4	14.6	2.59	37.8
KT225-14B	28.0						
KT225-26B	160.0						
KT225-34B	67.0						
KT225-52B	155.0						
KT249-26	203.0	2.500/63.5	1.405/35.7	1.000/25.4	15.6	3.36	52.3
KT249-34	89.0						
KT249-52	203.0						
KT250-8	113.0	2.500/63.5	1.250/31.8	1.000/25.4	15.0	3.84	57.4
KT250-14	43.0						
KT250-18	177.0						
KT250-19	177.0						
KT250-26	242.0						
KT250-30	71.0						
KT250-34	106.0						
KT250-40	194.0						
KT250-52	242.0						
KT260-18	128.0	2.670/67.9	1.600/40.7	1.000/25.4	17.1	3.45	59.0
KT260-26	175.0						
KT260-28	51.0						
KT260-30	51.0						
KT260-33	76.5						
KT260-34	76.5						
KT260-35	76.5						
KT260-40	140.0						
KT260-52	175.0						
KT300-2	11.4	3.040/77.2	1.930/49.0	.500/12.7	19.8	1.68	33.4
KT300-8	37.0						
KT300-18	58.0						
KT300-19	58.0						
KT300-26	80.0						
KT300-28	23.0						
KT300-30	23.0						
KT300-33	34.5						
KT300-34	34.5						
KT300-35	34.5						
KT300-40	71.0						
KT300-52	80.0						

Toroidal Cores

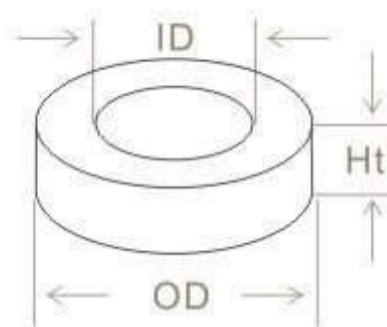
TYPICAL PART NO. KT 50-52 B

KDM Toroidal Cores
 OD in 100th inches
 KDM Material Mix No.
 iLetter Indicates Alternate Height

l_m : (Mean Magnetic Path Length)

A_c : (Cross Section Area)

V : (Core Volume)



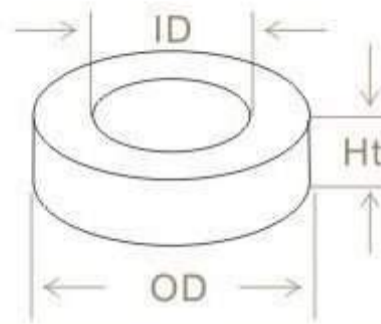
KDM Part No.	A_c nH/N ²	OD in/mm	ID in/mm	Ht in/mm	l_m cm	A_c cm ²	V cm ³
KT300-2D	22.8	3.040/77.2	1.930/49.0	1.000/25.4	19.8	3.38	67.0
KT300-14D	28.0						
KT300-18D	116.0						
KT300-19D	116.0						
KT300-26D	160.0						
KT300-28D	46.0						
KT300-30D	46.0						
KT300-33D	69.0						
KT300-34D	69.0						
KT300-35D	69.0						
KT300-40D	142.0						
KT300-52D	160.0						
KT350-18	125.0	3.500/89.0	2.140/54.4	1.000/25.4	22.5	4.39	98.0
KT350-26	171.0						
KT350-28	50.0						
KT350-30	50.0						
KT350-33	75.0						
KT350-34	75.0						
KT350-35	75.0						
KT350-40	137.0						
KT350-52	171.0						
KT400-2	18.0	4.000/102	2.250/57.2	.650/16.5	25.0	3.46	86.4
KT400-8	60.0						
KT400-18	96.0						
KT400-19	96.0						
KT400-26	131.0						
KT400-28	40.5						
KT400-30	40.5						
KT400-33	55.0						
KT400-34	55.0						
KT400-35	55.0						
KT400-40	115.0						
KT400-52	131.0						
KT400-26B	205.0	4.000/102	2.250/57.2	1.000/25.4	25.0	5.35	133

Toroidal Cores

TYPICAL PART NO . KT 50-52 B

KDM Toroidal Cores
 OD in 100th inches
 KDM Material Mix No.
 Letter Indicates Alternate Height

l_e : (Mean Magnetic Path Length)
 A : (Cross Section Area)
 V : (Core Volume)



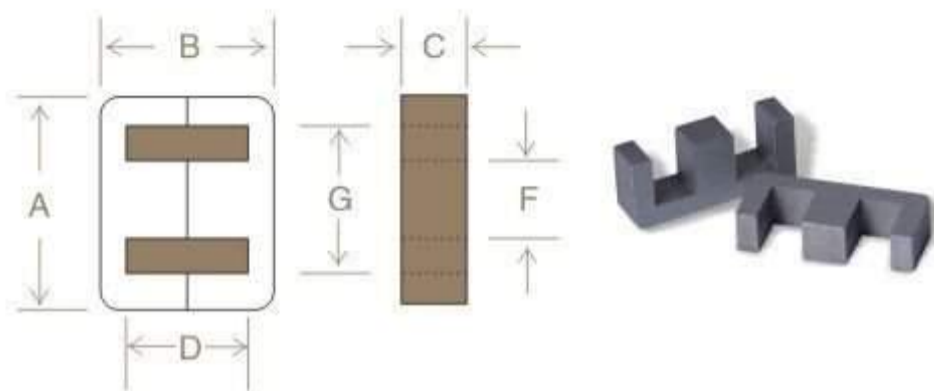
KDM Part No.	A_c nH/N ²	OD in/mm	ID in/mm	Ht in/mm	l_e cm	A_c cm ²	V cm ³
KT400-2D	36.0	4.000/102	2.250/57.2	1.300/33.0	25.0	6.85	171
KT400-14D	45.5						
KT400-26D	262.0						
KT400-28D	81.0						
KT400-30D	81.0						
KT400-33D	110.0						
KT400-34D	110.0						
KT400-35D	110.0						
KT400-40D	230.0						
KT520-2	20.0	5.200/132	3.080/78.2	.800/20.3	33.1	5.24	173
KT520-8	65.0						
KT520-26	149.0						
KT520-28	45.0						
KT520-30	45.0						
KT520-33	65.0						
KT520-34	65.0						
KT520-35	65.0						
KT520-40	119.0						
KT520-52	137.0						
KT520-28D	90.0	5.200/132	3.080/78.2	1.600/40.6	33.1	10.5	347
KT520-30D	90.0						
KT520-33D	130.0						
KT520-34D	130.0						
KT520-35D	130.0						
KT520-40D	240.0						
KT650-2	58.0	6.500/165	3.500/88.9	2.000/50.8	39.9	18.4	734
KT650-8	200.0						
KT650-26	434.0						
KT650-28	127.0						
KT650-30	127.0						
KT650-33	191.0						
KT650-34	191.0						
KT650-35	191.0						
KT650-40	376.0						
KT650-52	405.0						

E Cores

TYPICAL PART NO. KE 25-26 A

KDM E Cores
 :A Size
 :KDM Material Mix No.
 Letter Indicates Alternate Height

l_m : (Mean Magnetic Path Length)
 A: (Cross Section Area)
 V (Core Volume)
 W: (Window Area)



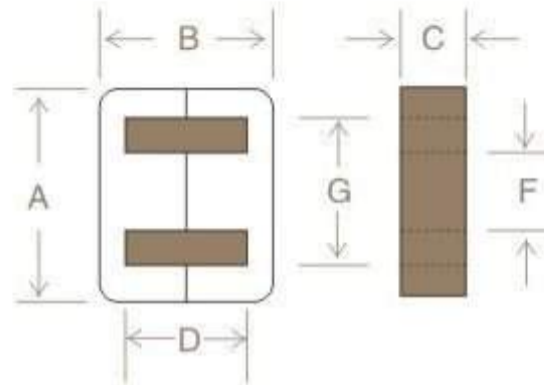
KDM Part No.	Micrometals Part No.	A_c nH/N ²	A in/mm	B in/mm	C in/mm	D in/mm	F in/mm	G in/mm	l_m cm	A_w cm ²	V cm ³	W cm ²
KE13-8	E49-8	20.5	.500/12.7	.437/11.1	.125/3.18	.312/7.93	.125/3.18	.375/9.53	2.86	.101	.288	.252
KE13-18	E49-18	29.0										
KE13-26	E49-26	38.0										
KE13-52	E49-52	38.0										
KE16-8	E65-8	30.5	.645/16.4	.640/16.3	.182/4.62	.471/12.0	.182/4.62	.445/11.3	3.98	.224	.861	.399
KE16-26	E65-26	58.0										
KE16-40	E65-40	51.0										
KE16-52	E65-52	56.0										
KE19-2	E75-2	14.5	.750/19.1	.635/16.1	.187/4.75	.455/11.6	.187/4.75	.562/14.3	4.20	.226	.936	.551
KE19-8	E75-8	33.5										
KE19-26	E75-26	64.0										
KE19-40	E75-40	55.0										
KE19-52	E75-52	59.0										
KE20-26	E79-26	49.0	.793/20.1	.884/22.5	.140/3.56	.634/16.1	.250/6.35	.546/13.9	5.24	.225	1.18	.605
KE20-8A	E80-8	38.0	.795/20.2	.784/19.9	.230/5.84	.550/14.0	.230/5.84	.575/14.6	4.84	.333	1.63	.613
KE20-26A	E80-26	73.0										
KE20-52A	E80-52	73.0										
KE25-8	E99-8	51.0	1.000/25.4	1.000/25.4	.287/7.29	.690/17.5	.287/7.29	.695/17.7	6.08	.548	3.38	.908
KE25-26	E99-26	96.0										
KE25-52	E99-52	96.0										
KE25-2A	E100-2	21.0	1.000/25.4	.750/19.1	.250/6.35	.500/12.7	.250/6.35	.750/19.1	5.08	.403	2.05	.806
KE25-8A	E100-8	48.0										
KE25-18A	E100-18	65.0										
KE25-26A	E100-26	92.0										
KE25-40A	E100-40	81.0										
KE25-52A	E100-52	85.0										
KE26-2	E101-2	53.0	1.020/25.9	.750/19.1	.555/14.1	.350/8.89	.250/6.35	.765/19.4	3.93	.895	2.36	.581
KE26-8	E101-8	116.0										
KE30-26	E118-26	90.0	1.185/30.1	1.185/30.1	.278/7.06	.782/19.9	.278/7.06	.782/19.9	7.14	.498	4.60	1.27
KE30-40	E118-40	80.0										
KE30-52	E118-52	90.0										
KE32-26	E125-26	134.0	1.255/31.8	1.215/30.8	.378/9.60	.835/21.2	.378/9.60	.885/22.5	7.45	.922	6.82	1.37
KE32-33	E125-33	63.5										
KE32-40	E125-40	113.0										
KE35-2	E137-2	32.0	1.375/34.9	1.145/29.1	.375/9.53	.770/19.6	.375/9.53	1.000/25.4	7.40	.907	6.72	1.55
KE35-8	E137-8	67.0										
KE35-18	E137-18	100.0										
KE35-26	E137-26	134.0										
KE35-40	E137-40	113.0										
KE35-52	E137-52	131.0										

E Cores

TYPICAL PART NO. KE 25-26 A

KDM E Cores
 A Size
 KDM Material Mix No.
 Letter Indicates Alternate Height

l_m : (Mean Magnetic Path Length)
 A_w : (Cross Section Area)
 V : (Core Volume)
 W : (Window Area)



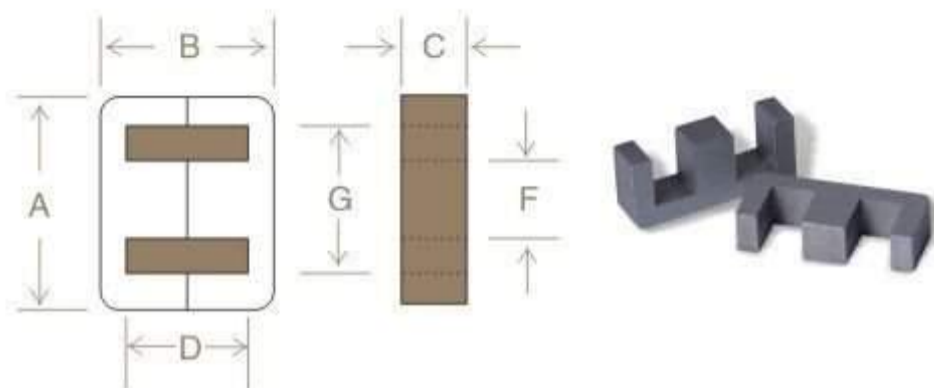
KDM Part No.	Micrometals Part No.	A_w nH/N ²	A in/mm	B in/mm	C in/mm	D in/mm	F in/mm	G in/mm	l_m cm	A_w cm ²	V cm ³	W cm ²
KE37-18	E145-18	112.0	1.455/37.0	1.370/34.8	.425/10.8	.950/24.1	.425/10.8	1.035/26.3	8.50	1.17	9.89	1.84
KE37-26	E145-26	146.0										
KE37-52	E145-52	146.0										
KE41-8	E162-8	105.0	1.625/41.3	1.342/34.1	.500/12.7	.842/21.4	.500/12.7	1.125/28.6	8.41	1.61	13.6	1.70
KE41-18	E162-18	149.0										
KE41-26	E162-26	210.0										
KE41-40	E162-40	175.0										
KE41-52	E162-52	199.0										
KE43-2	E168-2	43.5	1.685/42.8	1.660/42.2	.590/15.0	1.210/30.7	.475/12.0	1.210/30.7	10.4	1.81	18.5	2.87
KE43-8	E168-8	97.0										
KE43-18	E168-18	135.0										
KE43-26	E168-26	195.0										
KE43-40	E168-40	163.0										
KE43-52	E168-52	179.0										
KE43-2A	E168-2A	55.0	1.685/42.8	1.660/42.2	.787/20.0	1.210/30.7	.475/12.0	1.210/30.7	10.4	2.41	24.6	2.87
KE43-8A	E168-8A	116.0										
KE43-18A	E168-18A	170.0										
KE43-26A	E168-26A	232.0										
KE43-40A	E168-40A	196.0										
KE43-52A	E168-52A	230.0										
KE47-8	E187-8	144.0	1.865/47.4	1.552/39.4	.620/15.7	.952/24.2	.620/15.7	1.250/31.8	9.53	2.48	23.3	1.93
KE47-18	E187-18	213.0										
KE47-26	E187-26	265.0										
KE47-40	E187-40	240.0										
KE47-52	E187-52	265.0										
KE56-2	E220-2	69.0	2.210/56.1	2.180/55.4	.820/20.8	1.510/38.3	.680/17.3	1.520/38.6	13.2	3.60	47.7	4.09
KE56-8	E220-8	143.0										
KE56-18	E220-18	196.0										
KE56-26	E220-26	275.0										
KE56-30	E220-30	107.0										
KE56-34	E220-34	136.0										
KE56-40	E220-40	240.0										
KE56-52	E220-52	262.0										
KE57-2	E225-2	76.0	2.240/56.9	1.875/47.6	.745/18.9	1.140/29.0	.745/18.9	1.500/38.1	11.5	3.58	40.8	2.78
KE57-8	E225-8	173.0										
KE57-18	E225-18	240.0										
KE57-26	E225-26	325.0										
KE57-40	E225-40	290.0										
KE57-52	E225-52	325.0										

E Cores

TYPICAL PART NO. KE 25-26 A

KDM E Cores
 :A Size
 KDM Material Mix No.
 Letter Indicates Alternate Height

l_m : (Mean Magnetic Path Length)
 A: (Cross Section Area)
 V: (Core Volume)
 W: (Window Area)



KDM Part No.	Micrometals Part No.	A_c nH/N ²	A in/mm	B in/mm	C in/mm	D in/mm	F in/mm	G in/mm	l_m cm	A_w cm ²	V cm ³	W cm ²
KE77-2	E305-2	75.0	3.051/77.5	3.051/77.5	.933/23.7	2.118/53.8	.933/23.7	2.118/53.8	18.5	5.62	104	8.10
KE77-8	E305-8	156.0										
KE77-18	E305-18	222.0										
KE77-26	E305-26	287.0										
KE77-30	E305-30	124.0										
KE77-34	E305-34	150.0										
KE77-40	E305-40	255.0										
KE77-52	E305-52	287.0										
KE77-8A	E305-8A	208.0	3.051/77.5	3.051/77.5	1.244/31.6	2.118/53.8	.933/23.7	2.118/53.8	18.5	7.49	139	8.10
KE77-18A	E305-18A	280.0										
KE77-26A	E305-26A	382.0										
KE77-30A	E305-30A	165.0										
KE77-40A	E305-40A	339.0										
KE77-52A	E305-52A	382.0										
KE114-2	E450-2	132.0	4.500/114	3.636/92.4	1.375/34.9	2.250/57.2	1.375/34.9	3.120/79.3	22.9	12.2	280	12.7
KE114-8	E450-8	260.0										
KE114-18	E450-18	400.0										
KE114-26	E450-26	540.0										
KE114-30	E450-30	235.0										
KE114-34	E450-34	300.0										
KE114-40	E450-40	480.0										
KE114-52	E450-52	500.0										
KE114-8H	E450-8H	140.0	4.500/114	3.636/92.4	.688/17.5	2.250/57.2	1.375/34.9	3.120/79.3	22.9	6.1	140	12.7
KE114-18H	E450-18H	200.0										
KE114-52H	E450-52H	270.0										
KE155-2	E610-2	163.0	6.102/155	6.102/155	1.866/47.4	4.236/108	1.866/47.4	4.236/108	37.0	22.5	832	32.4
KE155-26	E610-26	588.0										
KE155-34	E610-34	314.0										

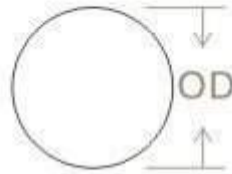
Plain Cores

TYPICAL PART NO . KP 3.45 x 19.7

KDM Plain Cores

OD(mm)

L(mm)



KDM Part No.	A_c nH/N ²	OD in/mm	L in/mm
KP3.45 x 19.7	7.6	.136/3.45	.775/19.7
KP4.83 x 19.1	12.5	.190/4.83	.750/19.1
KP6.35 x 19.1	16.0	.250/6.35	.750/19.1
KP6.35 x 25.4	16.0	.250/6.35	1.000/25.4
KP6.48 x 31.8	15.0	.255/6.48	1.250/31.8
KP6.48 x 38.1	14.5	.255/6.48	1.500/38.1
KP7.95 x 25.4	20.0	.313/7.95	1.000/25.4
KP7.95 x 31.8	20.0	.313/7.95	1.250/31.8
KP7.95 x 47.6	18.0	.313/7.95	1.875/47.6
KP9.53 x 25.4	25.5	.375/9.53	1.000/25.4
KP9.53 x 31.8	26.5	.375/9.53	1.250/31.8
KP9.53 x 38.1	25.0	.375/9.53	1.500/38.1
KP9.53 x 44.5	22.5	.375/9.53	1.750/44.5
KP12.7 x 25.4	30.0	.500/12.7	1.000/25.4
KP12.7 x 31.8	34.5	.500/12.7	1.250/31.8
KP12.7 x 38.1	33.0	.500/12.7	1.500/38.1
KP12.7 x 44.5	32.0	.500/12.7	1.750/44.5
KP12.7 x 50.8	31.0	.500/12.7	2.000/50.8
KP15.9 x 31.8	37.5	.625/15.9	1.250/31.8
KP15.9 x 38.1	41.5	.625/15.9	1.500/38.1
KP19.1 x 38.1	45.0	.750/19.1	1.500/38.1
KP19.1 x 60.3	49.5	.750/19.1	2.375/60.3
KP25.4 x 50.8	80.0	1.000/25.4	2.000/50.8

A_c Value Listed is approximate and is for indication only.

Plain Cores

Size Tolerance(mm)

KDM Part No.	OD	L
KP3.45–KP25.4	+0.00 -0.15	±0.5

Cylindrical Core Applications

The inductance and required number of turns for cylindrical shapes as plain and hollow cores can be closely approximated from the following equations:

Single-Layer Coil

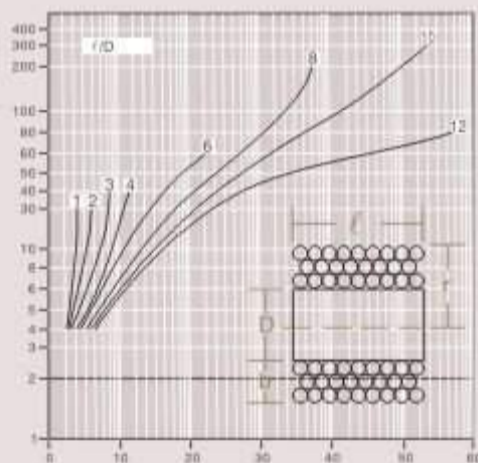
$$L = \frac{\mu_o (\Gamma N)^2}{9r + 10\ell}$$

$$N = \frac{1}{r} \left[\frac{L(9r + 10\ell)}{\mu_o} \right]^{1/2}$$

Multi-Layer Coil

$$L = \frac{(0.8)(\mu_o)(rN)^2}{6r + 9\ell + 10b}$$

$$N = \frac{1}{r} \left[\frac{L(6r + 9\ell + 10b)}{(0.8)(\mu_o)} \right]^{1/2}$$



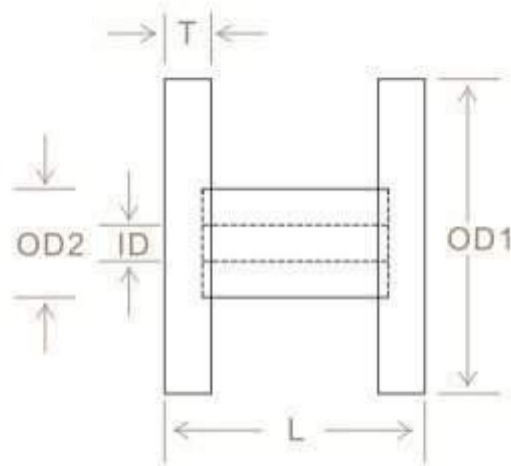
In formula
 Inductance(μ H)
 Effective permeability of core
 Number of turns
 Radius of coil(inches)
 Diameter of core(inches)
 Length of coil/core(inches)
 Coil build

The family of curves to the top shows how the effective permeability(μ_e) of a wound cylindrical core is a function of the core's wound length to diameter ratio(ℓ/D) as well as the initial material permeability(μ_o). These curves indicate that in many cases variations in the length / diameter ratio will more significantly affect the effective permeability than increases in permeability of the core material. This group of curves was calculated using a cylindrical core with a single layer winding closely wound over 95% of its length. It is also possible to use as a fair approximation of the effective permeability for multi-layer windings.

I Cores

TYPICAL PART NO .KI 36.1 x 33.3 x 12.7

KDM I Cores
 OD1 (mm)
 L (mm)
 OD2 (mm)



KDM Part No.	A_L nH/N ²	OD1 mm	OD2 mm	ID mm	T mm	L mm	Window cm ³
KI36.1 x 23.8 x 12.7	85	36.10	12.70	4.37	3.96	23.80	1.84
KI36.1 x 33.3 x 12.7	60	36.10	12.70	4.37	3.96	33.30	2.95
KI46.9 x 31.8 x 15.9	100	46.90	15.90	5.56	4.75	31.80	3.43
KI46.9 x 41.3 x 15.9	80	46.90	15.90	5.56	4.75	41.30	4.90
KI63.5 x 34.9 x 19.1	130	63.50	19.10	6.60	4.75	34.90	5.66
KI63.5 x 47.6 x 19.1	95	63.50	19.10	6.60	4.75	47.60	8.49

Size Tolerance (mm)

KDM Part No.	OD1	OD2	ID	L	T
KI36.1–KI63.5	± 0.5	+0.00 -0.15	+0.15 -0.00	± 0.50	± 0.20

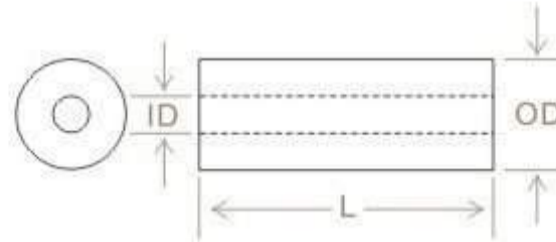
A_L Value Listed is approximate and is for indication only.

These I Cores provide an alternative shape for high current choke applications which can tolerate some electro –magnetic radiation. This configuration can be especially effective for high power speaker crossover coils.

Hollow Cores

TYPICAL PART NO .KH 12.7-40A

KDM Hollow Cores
 OD(mm)
 KDM Material Mix No.
 Letter Indicates Alternate Height



KDM Part No.	Micrometals Part No.	OD in/mm	ID in/mm	L in/mm
KH7.95-26	H512-1026	.312/7.95	.137/3.48	.750/19.1
KH12.7-40	H811-1140	.500/12.7	.172/4.37	.688/17.5
KH12.7-40A	H817-1140	.500/12.7	.172/4.37	1.064/27.0
KH12.7-40B	H822-1140	.500/12.7	.172/4.37	1.375/34.9
KH15.9-40	H1014-1040	.625/15.9	.219/5.56	.900/22.9
KH15.9-40A	H1015-1040	.625/15.9	.219/5.56	.955/24.3
KH15.9-40B	H1020-1040	.625/15.9	.219/5.56	1.250/31.8
KH15.9-40C	H1021-1040	.625/15.9	.219/5.56	1.330/33.8
KH19.1-40	H1217-1040	.750/19.1	.260/6.60	1.080/27.4
KH19.1-33A	H1224-1033	.750/19.1	.260/6.60	1.500/38.1
KH19.1-40B	H1225-1040	.750/19.1	.260/6.60	1.580/40.1
KH25.4-40	H1616-1040	1.000/25.4	.250/6.35	1.000/25.4

Size Tolerance(mm)

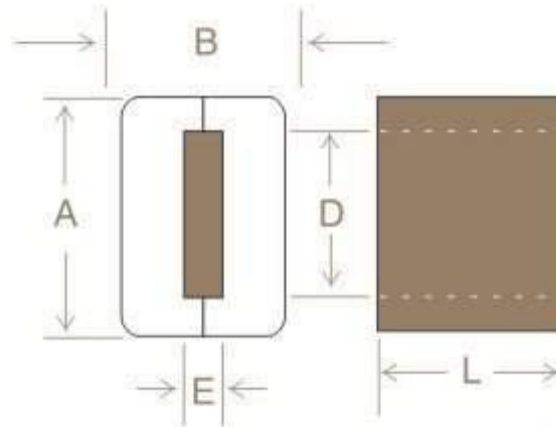
KDM Part No.	OD	ID	L
KH7.95-KH25.4	+0.00 -0.10	+0.10 -0.00	±0.25

Bus Bar Cores

TYPICAL PART NO . KHS 300-26 A

KDM Bus Bar Cores
 Code to Indicate Max Current
 KDM Material Mix No.
 Letter Indicates Alternate Height

l_e : (Mean Magnetic Path Length)
 A_e : (Cross Section Area)
 V : (Core Volume)



KDM Part No.	A_e nH/N ²	A in/mm	B in/mm	L in/mm	D in/mm	E in/mm	l_e cm	A_e cm ²	V cm ³
KHS300-8	68	1.02/25.9	0.65/16.5	0.5/12.7	0.52/13.2	0.14/3.56	5.92	.806	4.61
KHS300-26	147								
KHS300-52	147								
KHS300-8A	83	1.02/25.9	0.65/16.5	0.63/15.9	0.52/13.2	0.14/3.56	5.92	1.01	5.77
KHS300-26A	179								
KHS300-52A	179								
KHS300-8B	95	1.02/25.9	0.65/16.5	0.75/19.1	0.52/13.2	0.14/3.56	5.92	1.21	6.92
KHS300-26B	208								
KHS300-52B	208								
KHS300-8C	107	1.02/25.9	0.65/16.5	0.87/22.2	0.52/13.2	0.14/3.56	5.92	1.41	8.06
KHS300-26C	232								
KHS300-52C	232								
KHS400-26	221	1.5/38.1	0.96/24.4	0.75/19.1	0.76/19.4	0.21/5.21	8.71	1.78	15.1
KHS400-26A	286			1/25.4				2.37	20.1
KHS400-26B	335			1.25/31.8				2.96	25.2
KHS400-26C	371			1.5/38.1				3.56	30.2

Based on 25 turns test winding

Size Tolerance(mm)

KDM Part No.	A	B	D	E	L
KHS300-KHS400	±0.35	±0.35	±0.10	±0.10	±0.50

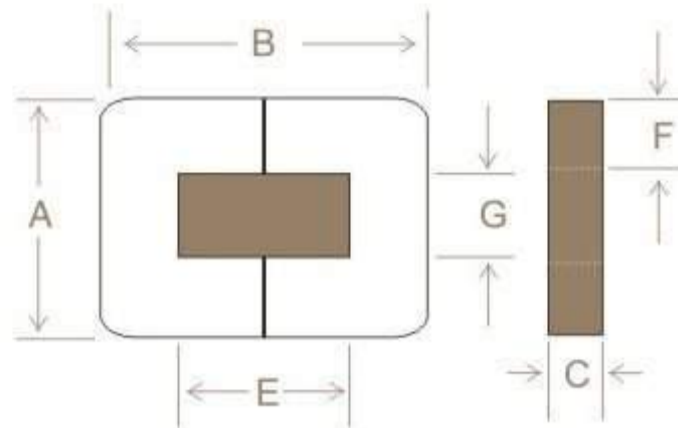
The listed tolerance includes coating

U Cores

TYPICAL PART NO. KU 80-26 A

KDM U Cores
 A in 100th inches
 KDM Material Mix No.
 Letter Indicates Alternate Height

l_m : (Mean Magnetic Path Length)
 A_e : (Cross Section Area)
 V : (Core Volume)



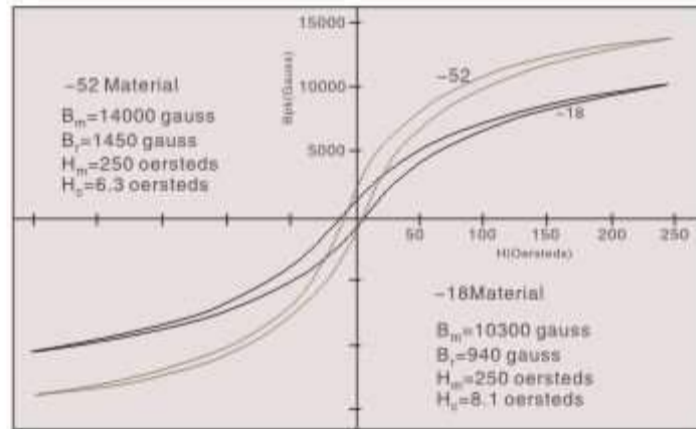
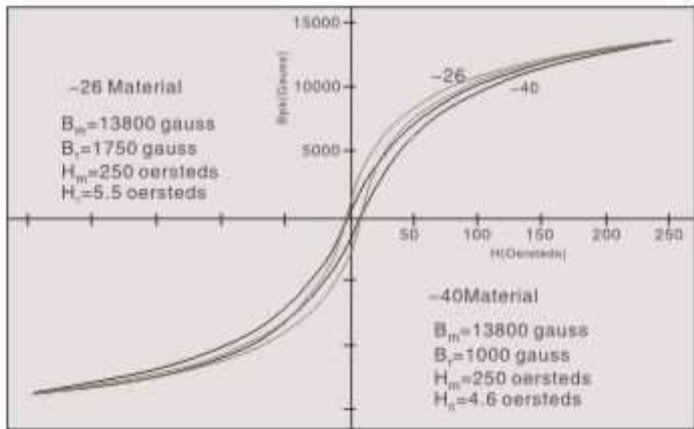
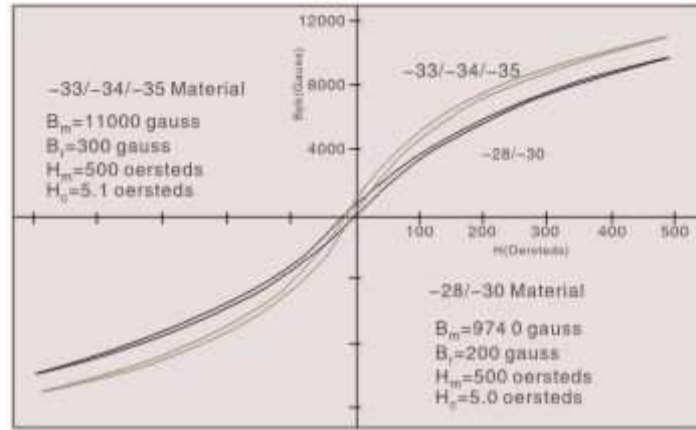
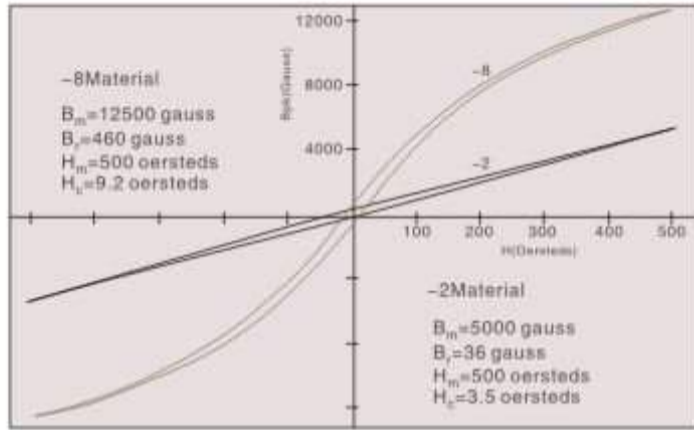
KDM Part No.	A_e nH/N ²	A in/mm	B in/mm	C in/mm	E in/mm	F in/mm	G in/mm	l_m cm	A_e cm ²	V cm ³
KU61-26	71.0	0.61/15.5	0.9/22.9	0.25/6.35	0.51/13.0	0.19/4.95	0.21/5.33	5.66	.315	1.81
KU80-8	42.4	0.80/20.3	1.25/31.8	0.25/6.35	0.75/19.1	0.25/6.35	0.3/7.62	7.87	.403	3.18
KU80-26	71.0									
KU80-40	64.0									
KU80-52	70.0									
KU350-2	59.0	3.5/88.9	5.75/146	1/25.4	3.25/82.6	1/25.4	1.5/38.1	35.6	6.45	250
KU350-40	235.5									

Size Tolerance(mm)

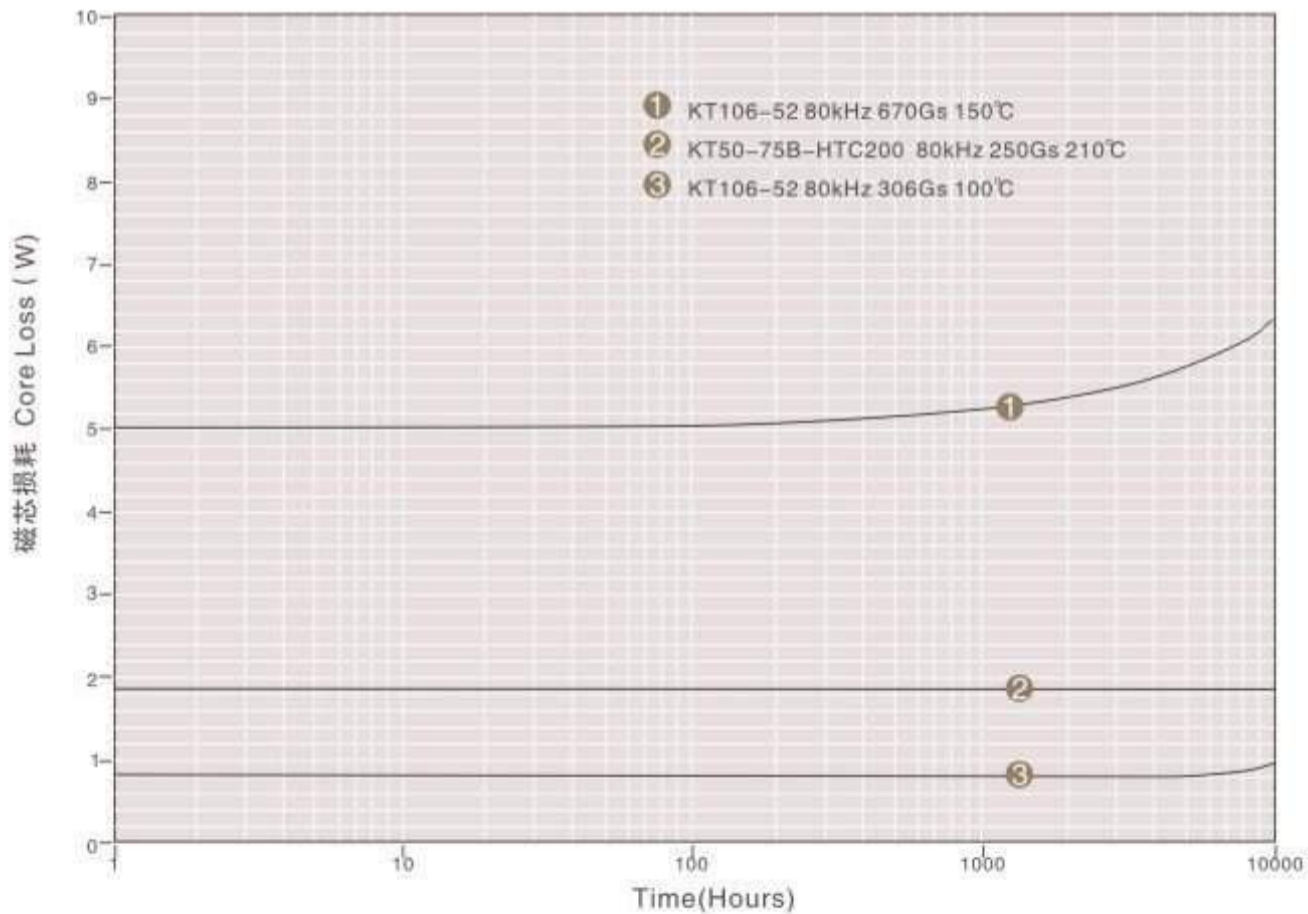
KDM Part No.	A	B	C	E	F	G
KU61-KU80	±0.25	±0.25	±0.25	±0.25	±0.25	±0.25
KU350	±0.50	±0.50	±0.35	±0.50	±0.35	±0.75

Magnetic Characteristics

B-H Curves

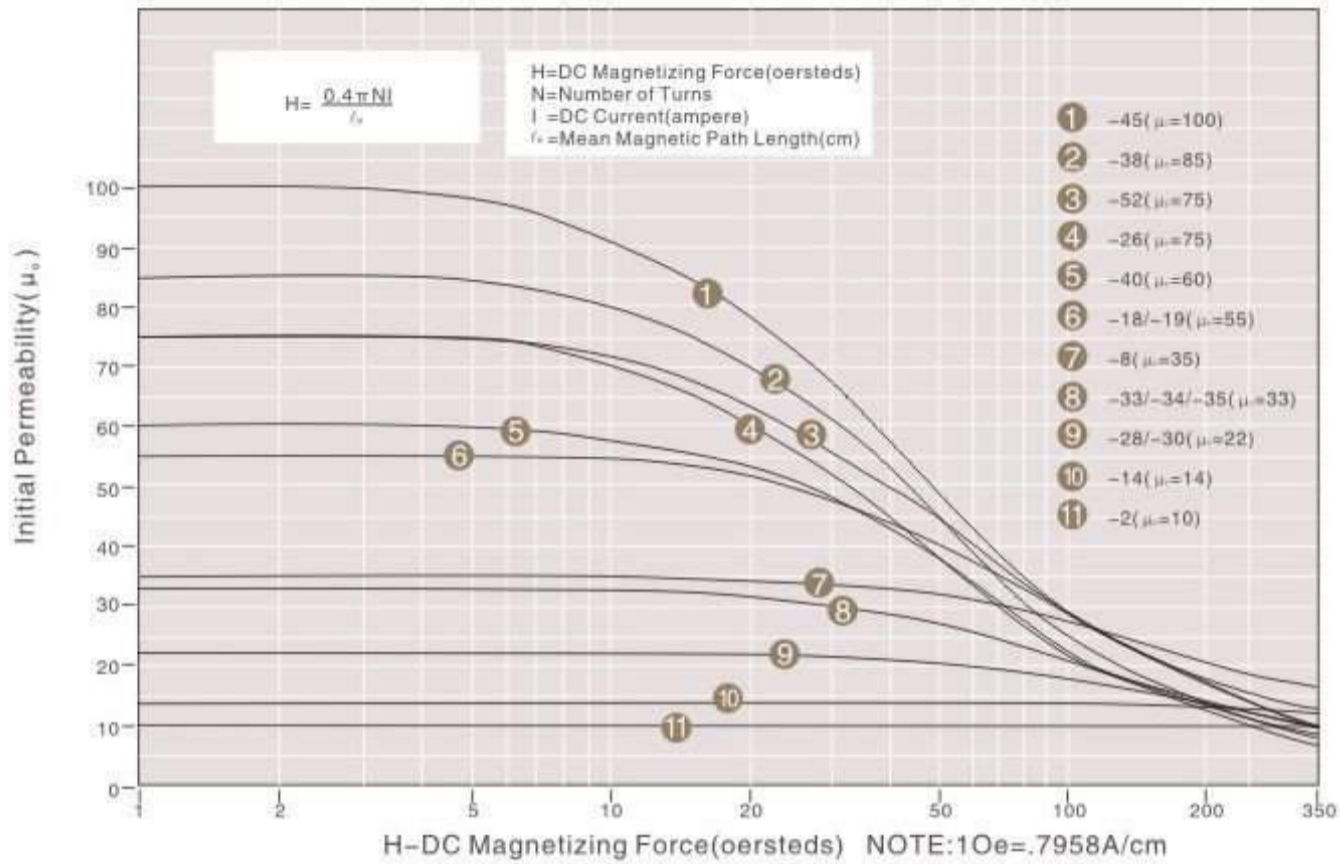


Core Loss vs Time

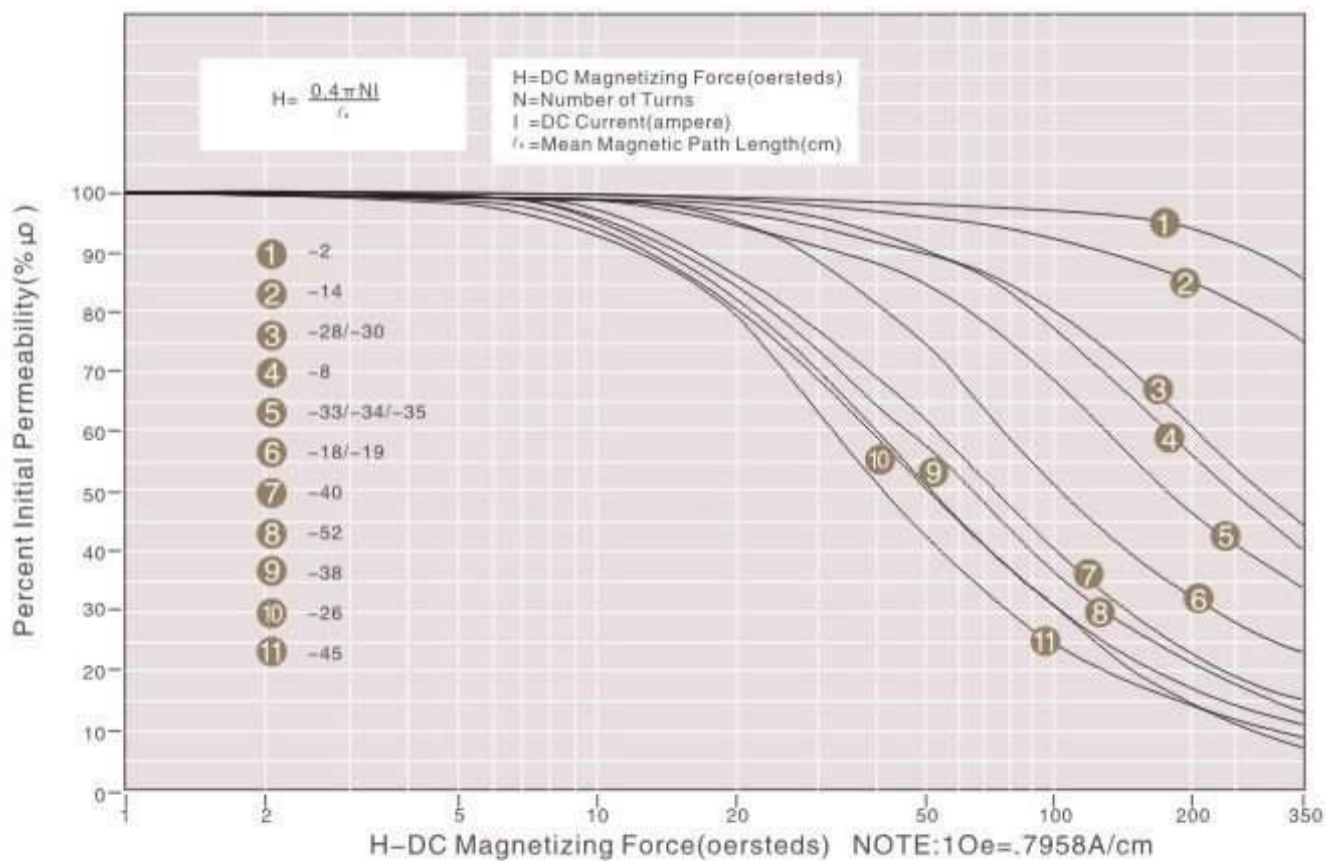


Magnetic Characteristics

Initial Permeability (μ_o) vs DC Magnetizing Force

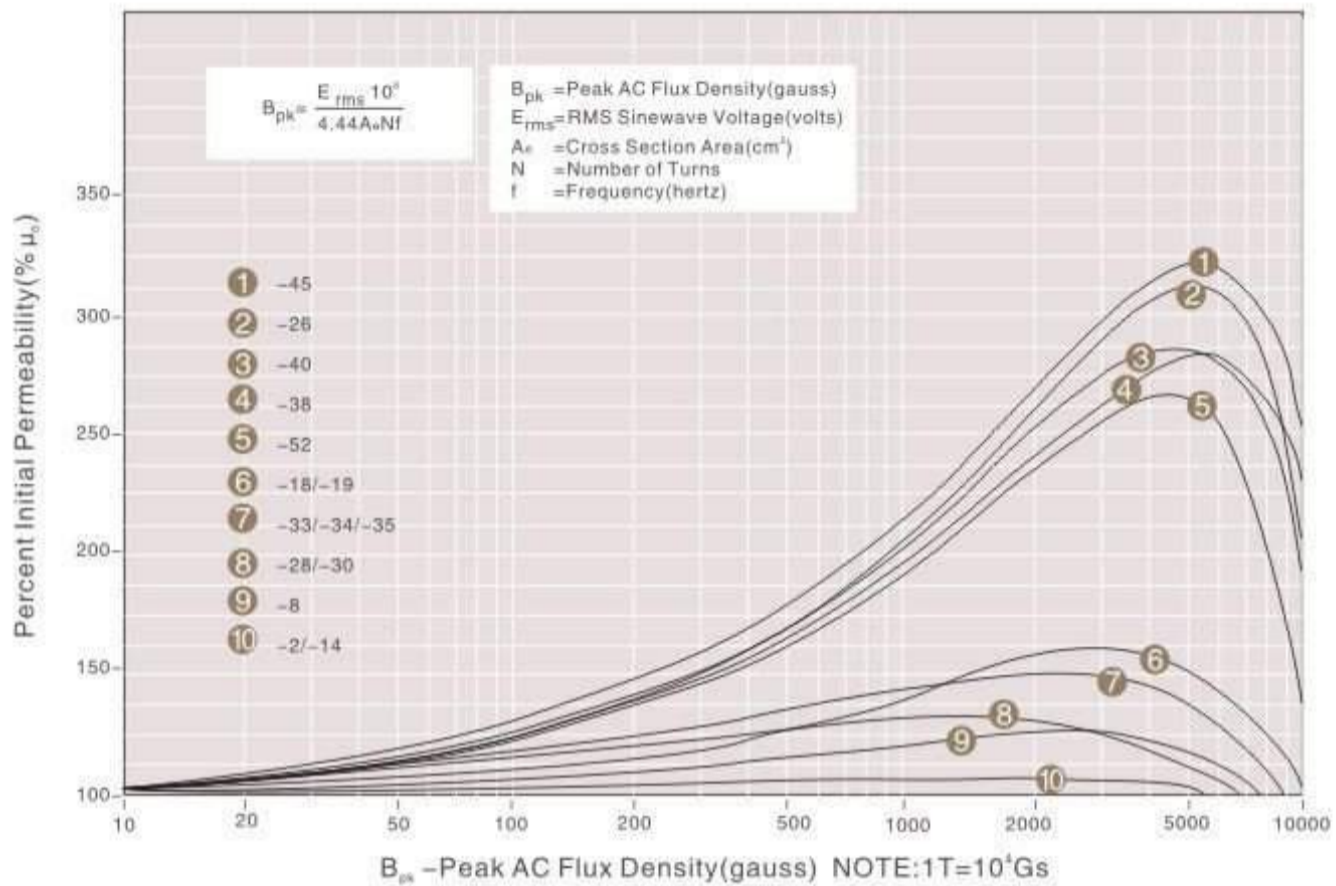


Percent Initial Permeability (% μ_o) vs DC Magnetizing Force

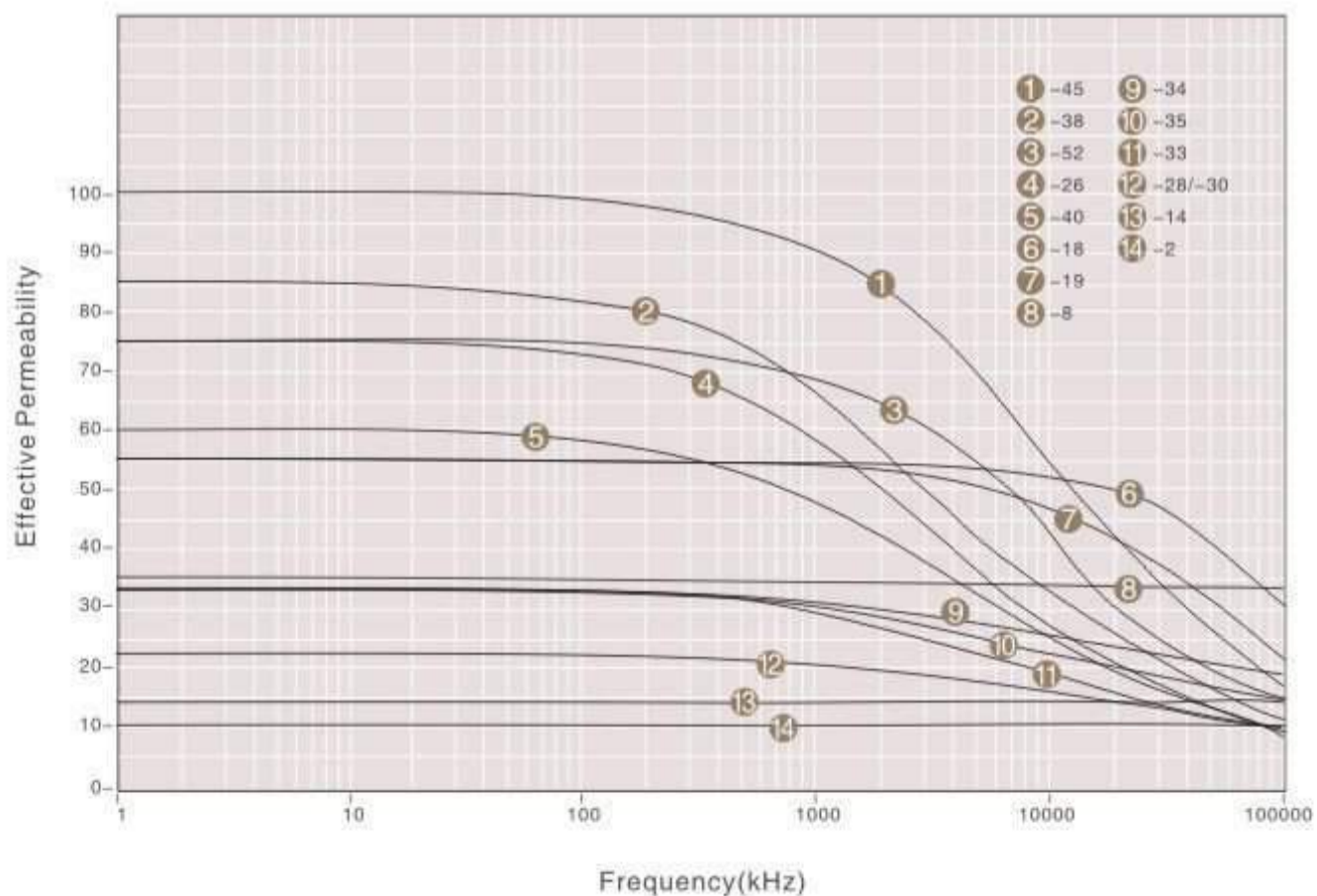


Magnetic Characteristics

Percent Initial Permeability(% μ_0) vs Peak AC Flux Density

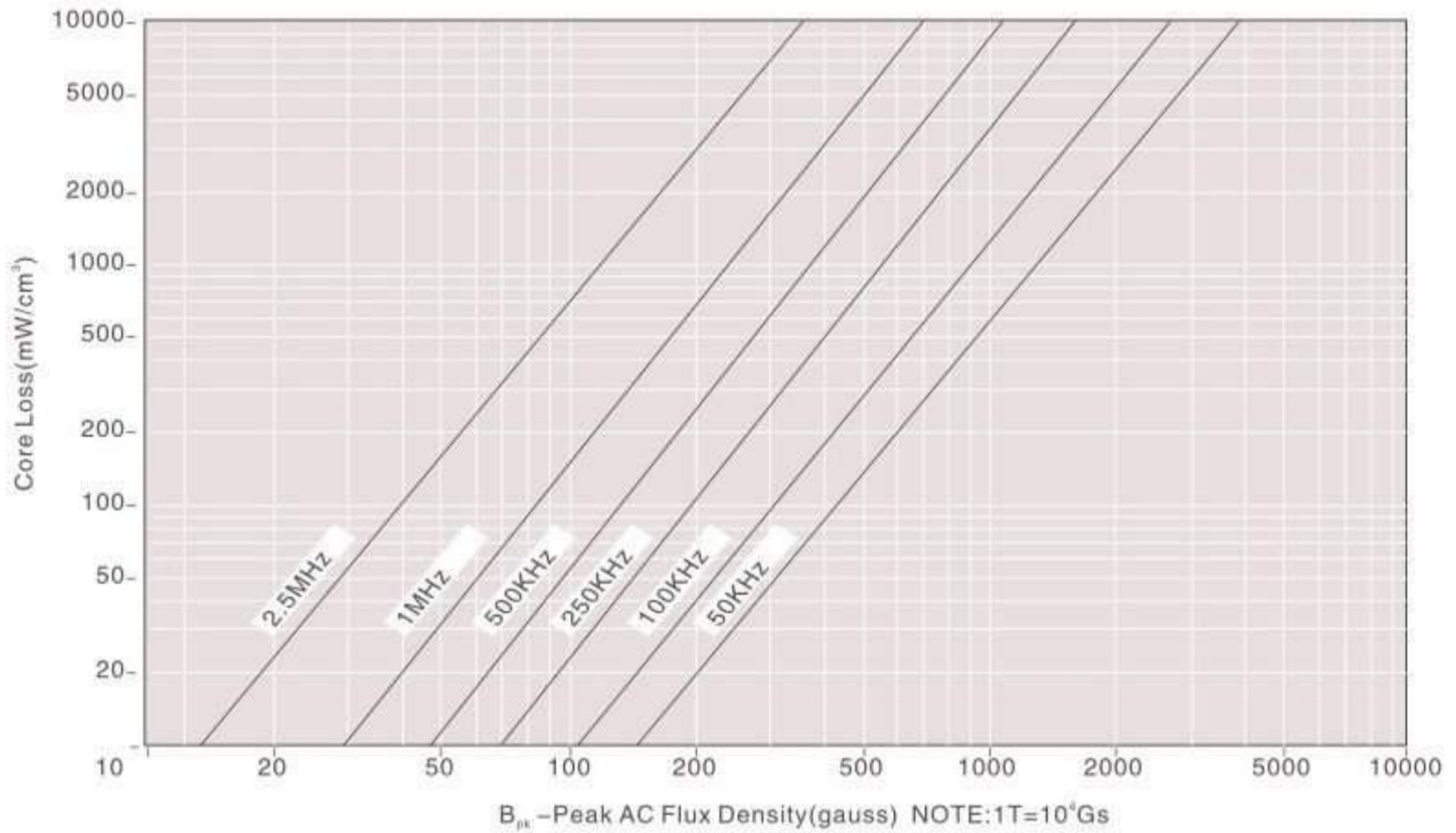


Effective Permeability vs Frequency

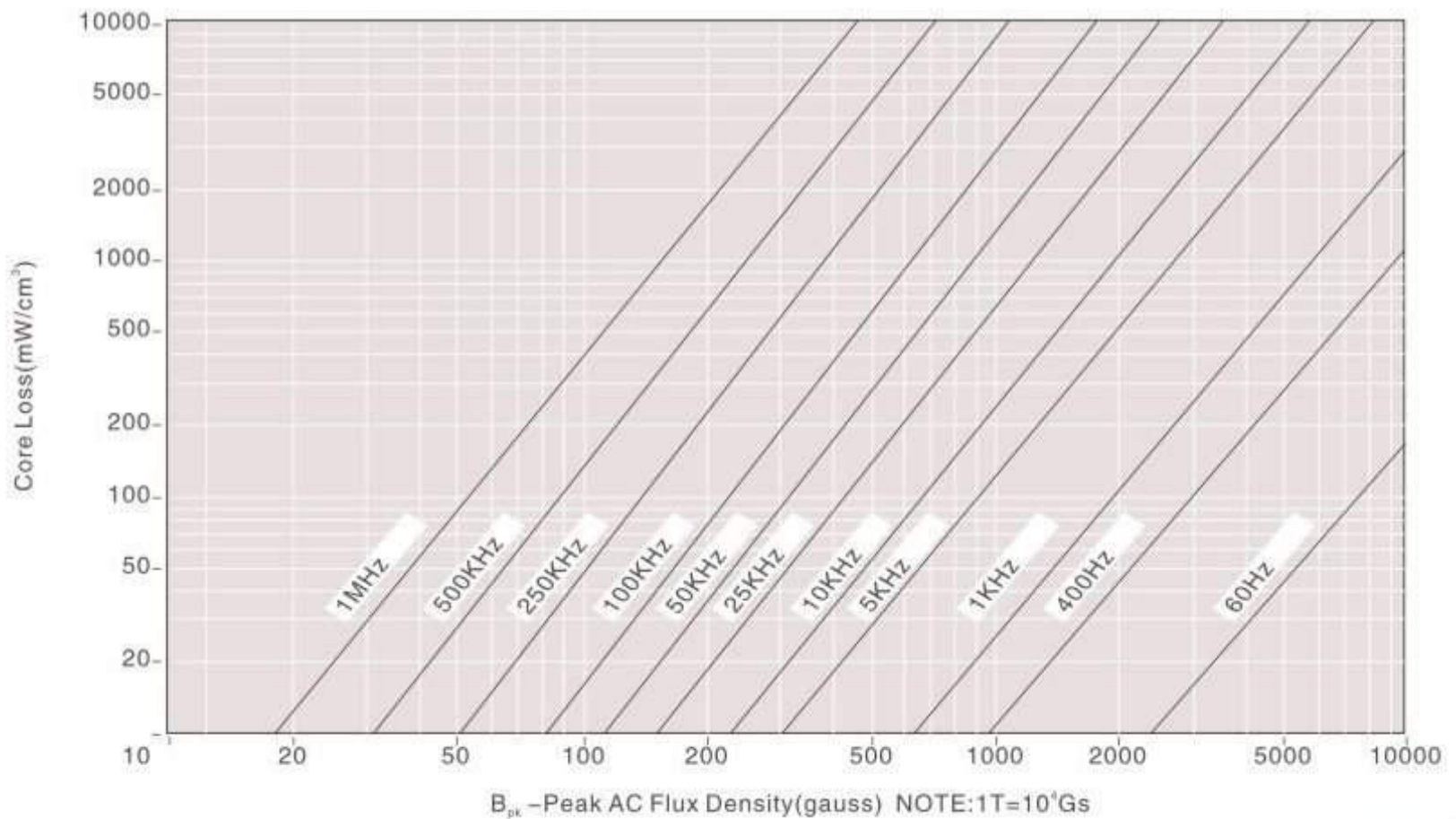


Magnetic Characteristics

-2Material $\mu_r=10$ Core Loss vs Peak AC Flux Density

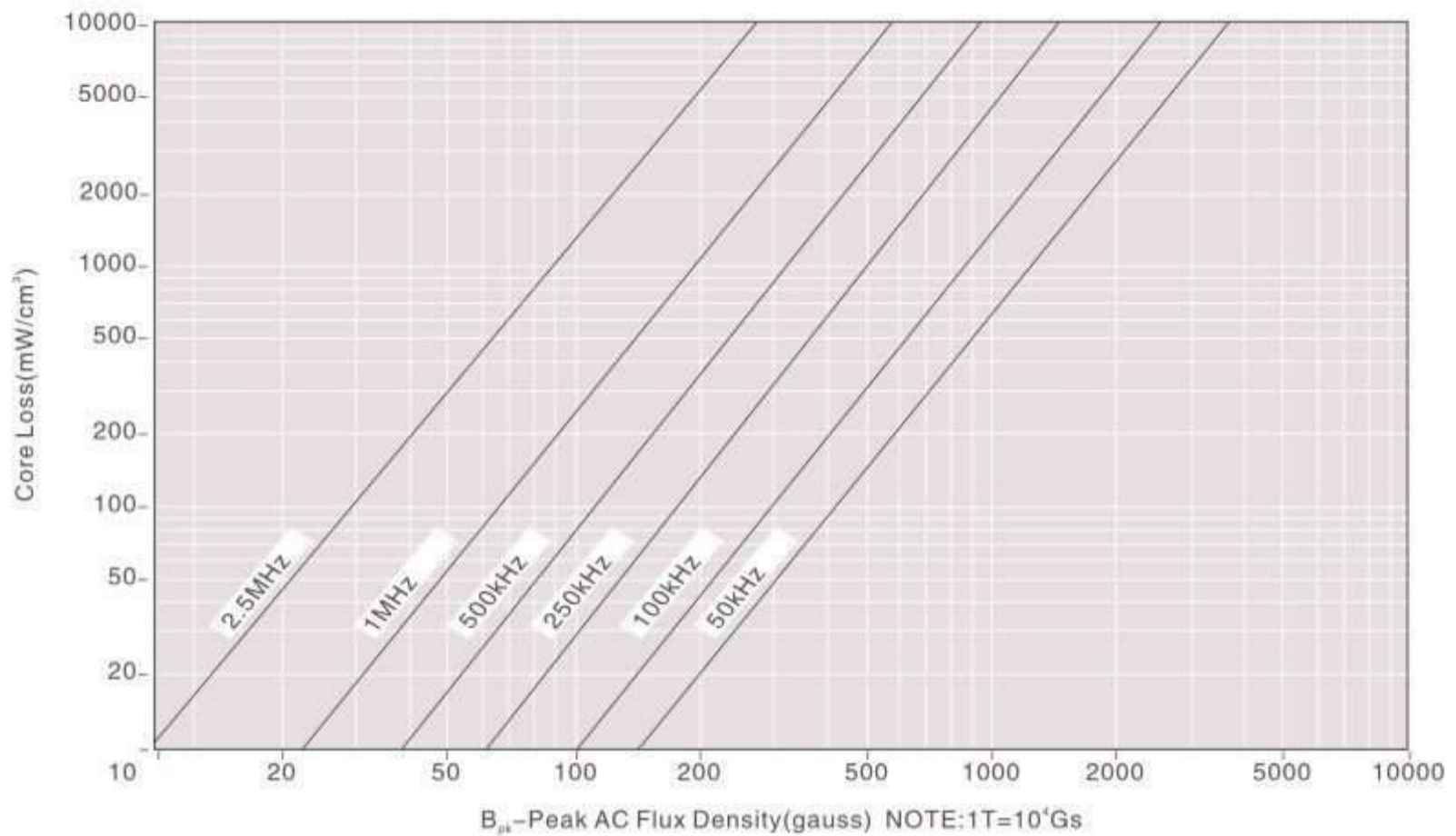


-8Material $\mu_r=35$ Core Loss vs Peak AC Flux Density

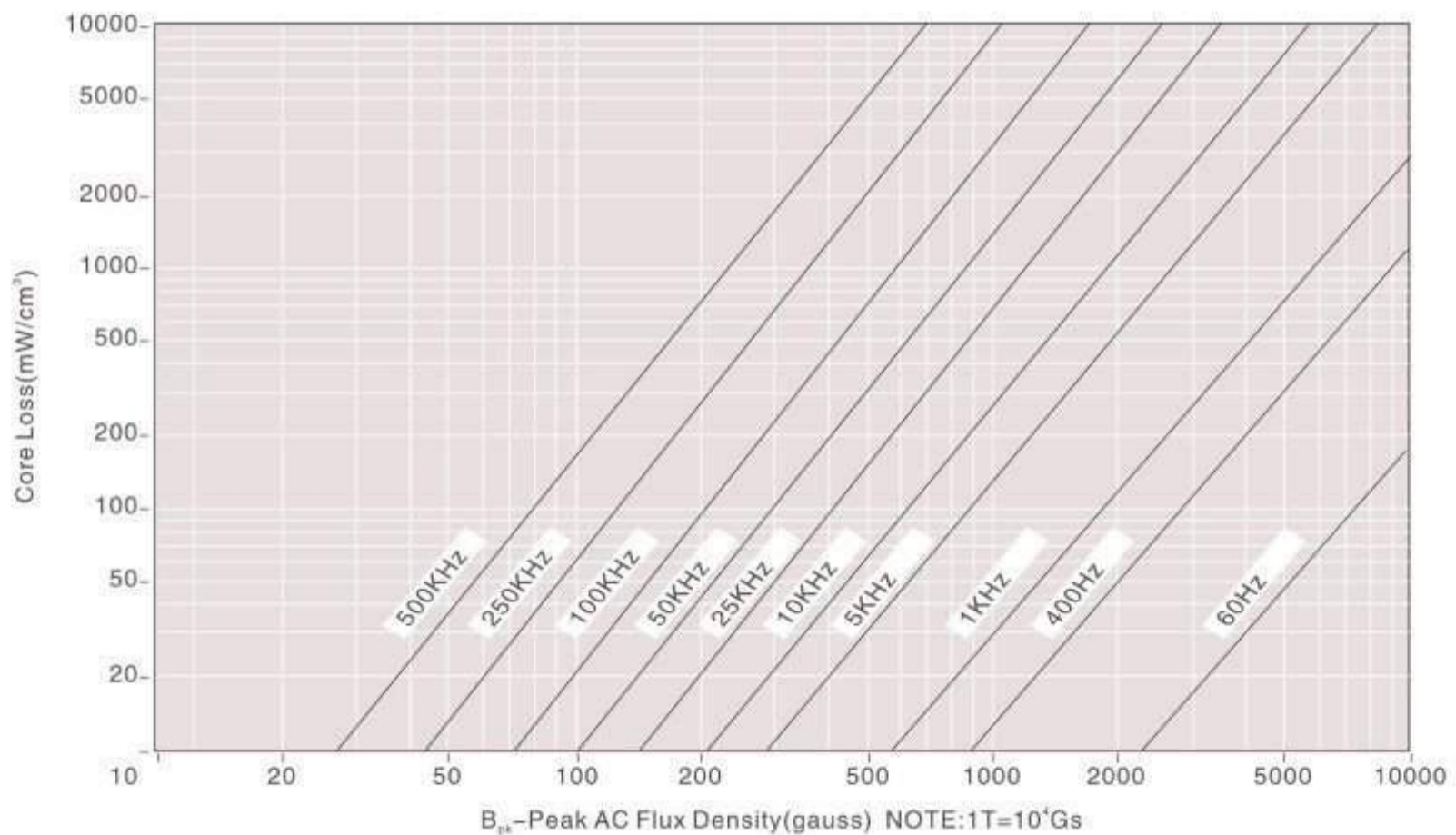


Magnetic Characteristics

-14Material $\mu_r = 14$ Core Loss vs Peak AC Flux Density

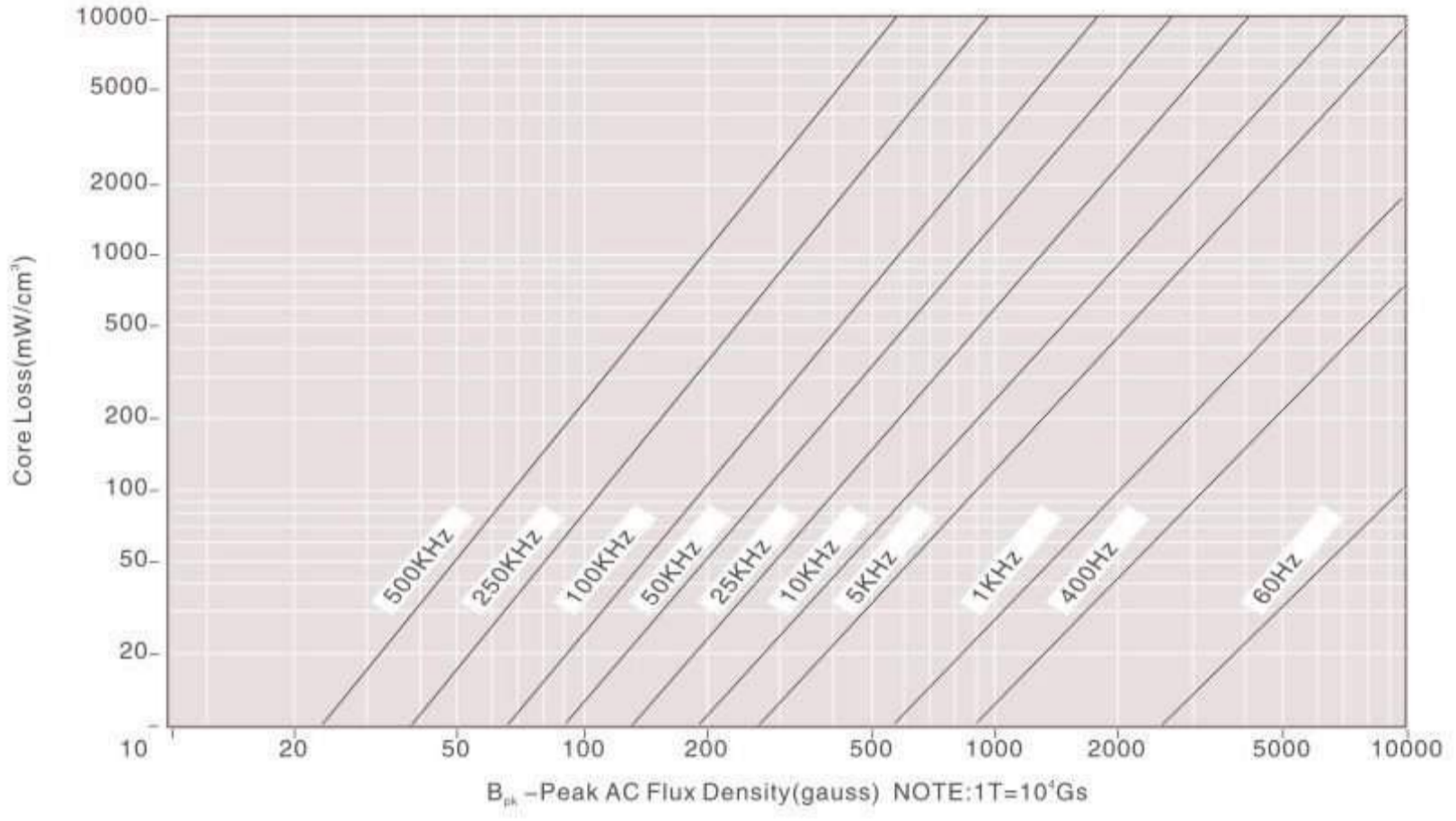


-18Material $\mu_r = 55$ Core Loss vs Peak AC Flux Density

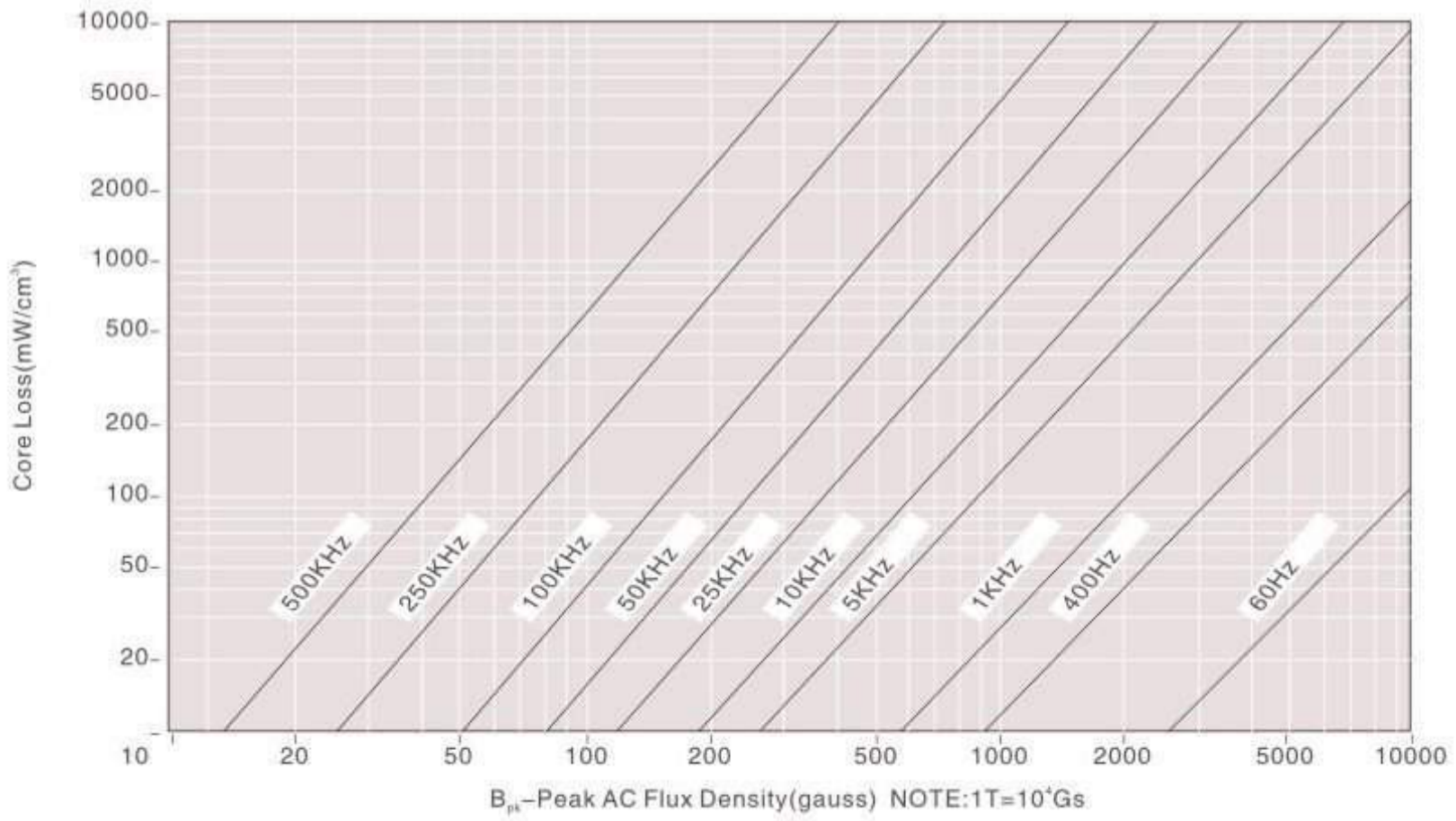


Magnetic Characteristics

-19Material $\mu_c=55$ Core Loss vs Peak AC Flux Density

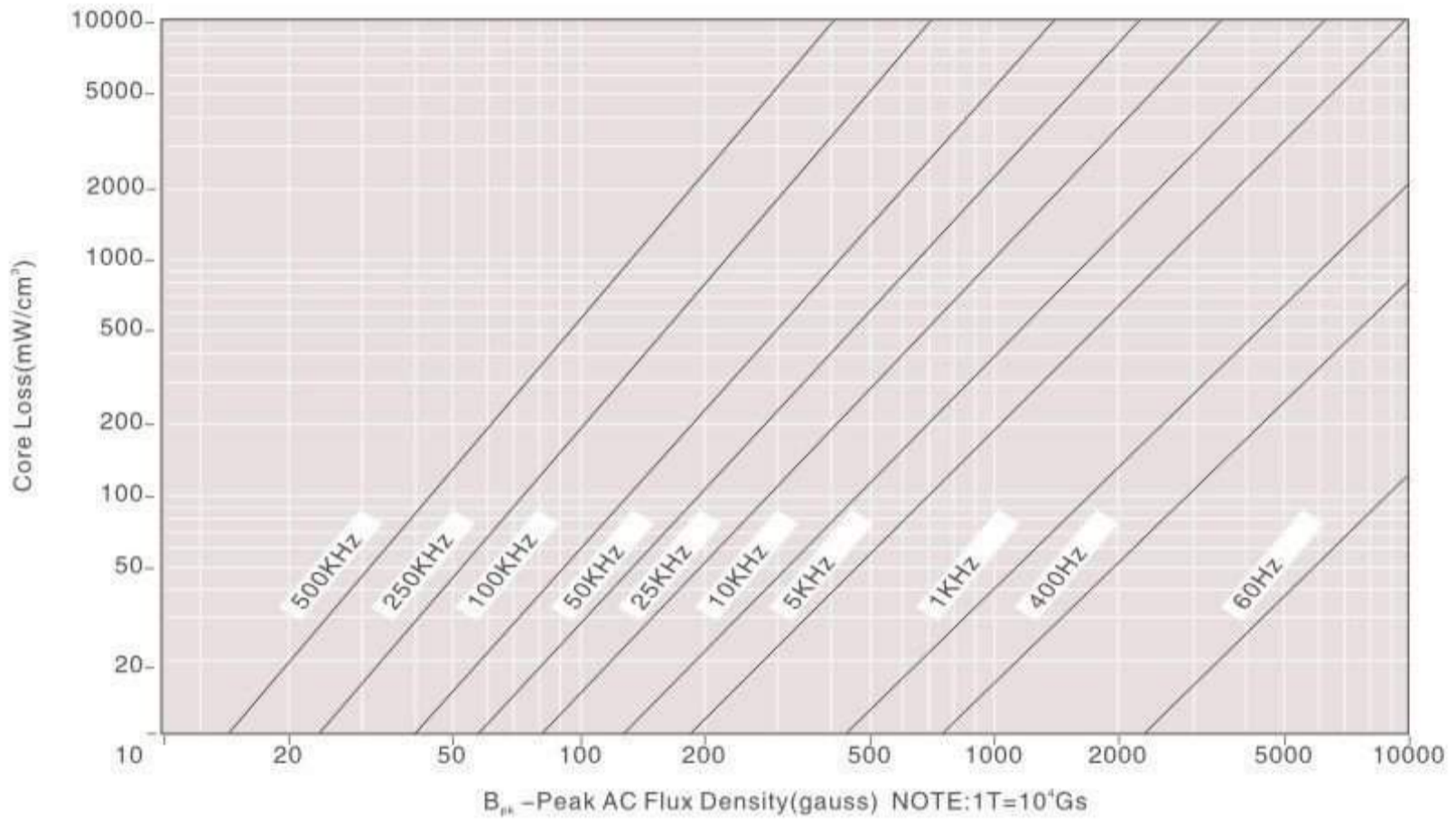


-26Material $\mu_c=75$ Core Loss vs Peak AC Flux Density

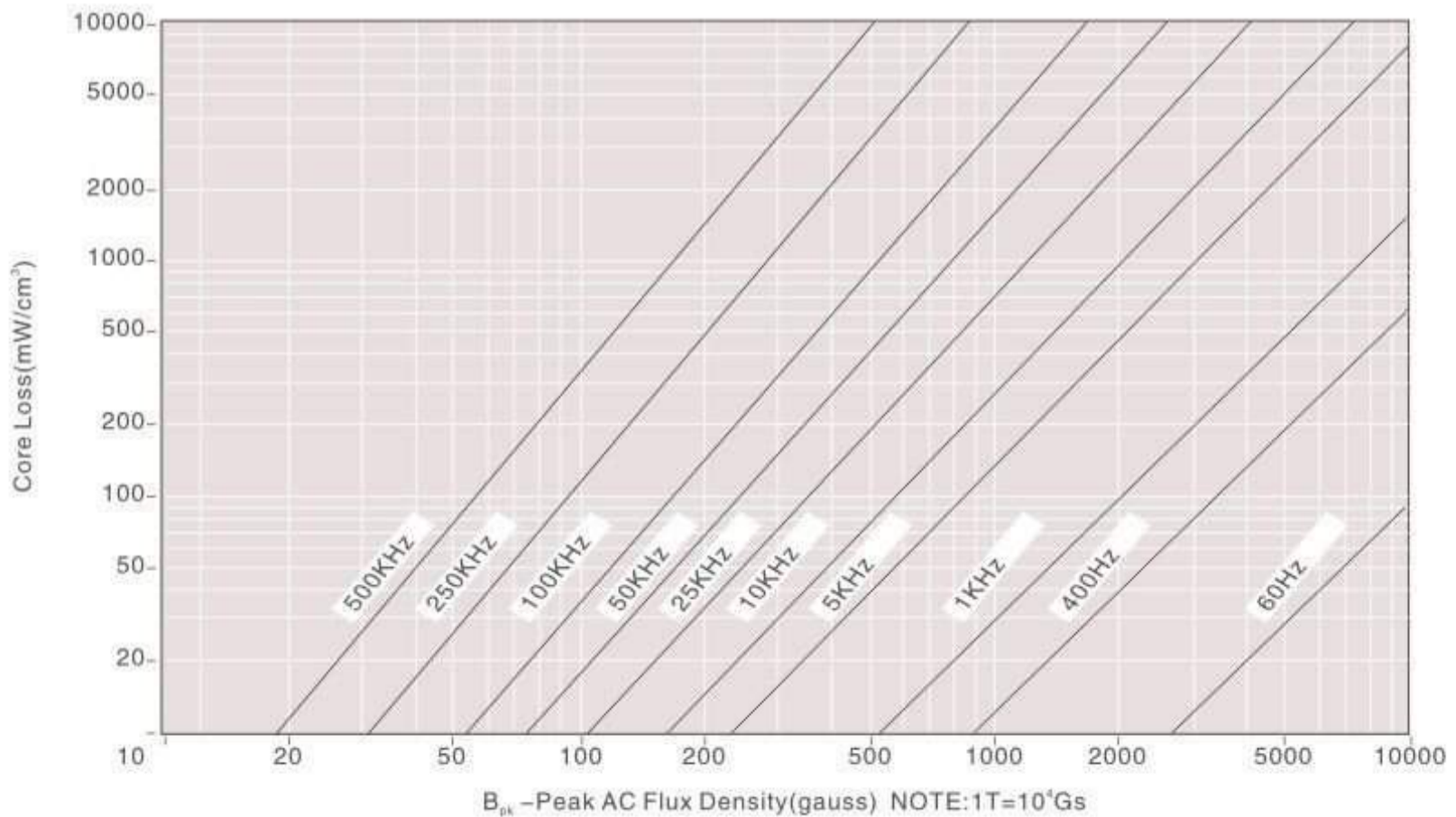


Magnetic Characteristics

-30Material $\mu_r = 22$ Core Loss vs Peak AC Flux Density

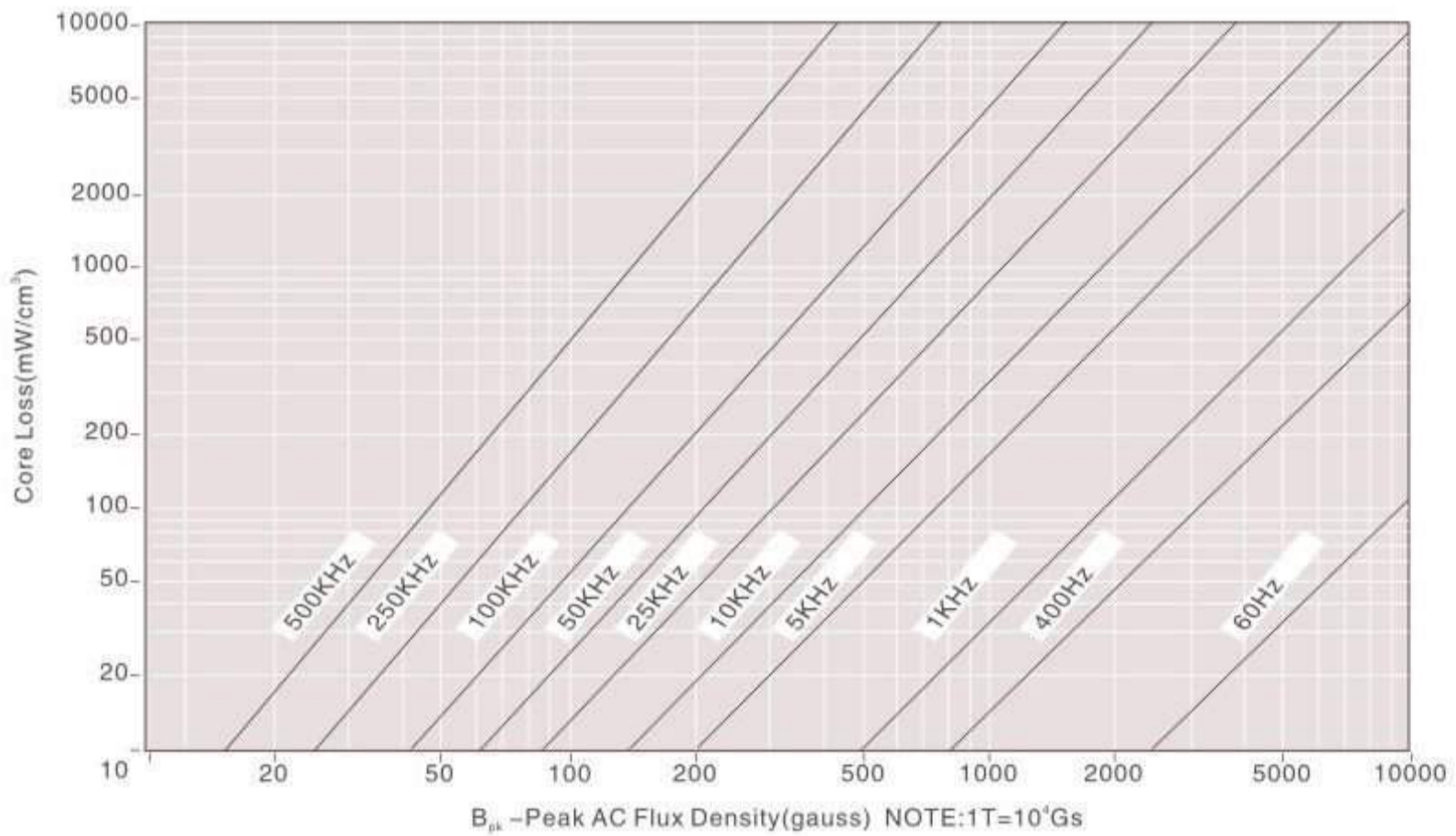


-34Material $\mu_r = 33$ Core Loss vs Peak AC Flux Density

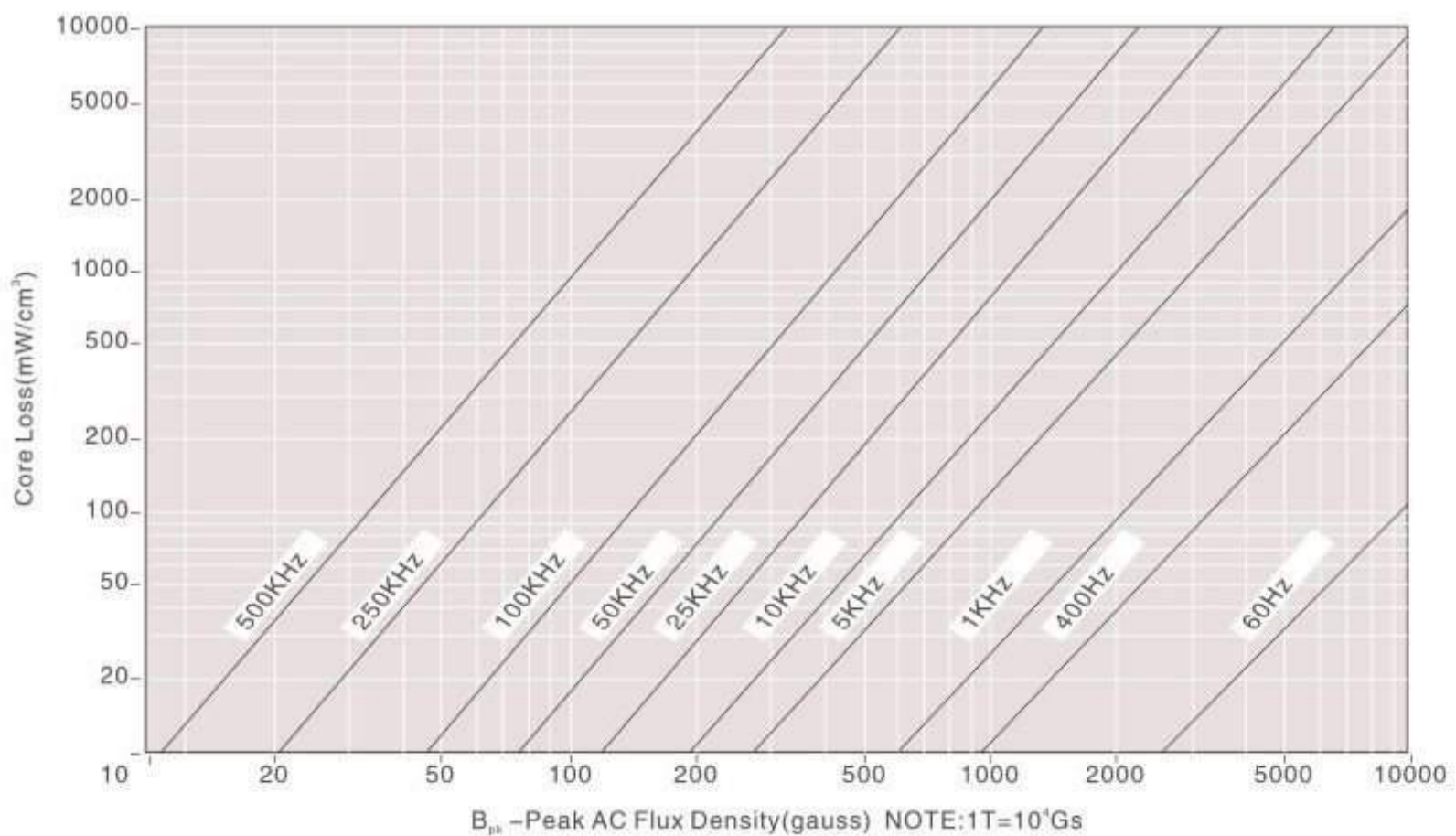


Magnetic Characteristics

-35Material $\mu_c = 33$ Core Loss vs Peak AC Flux Density

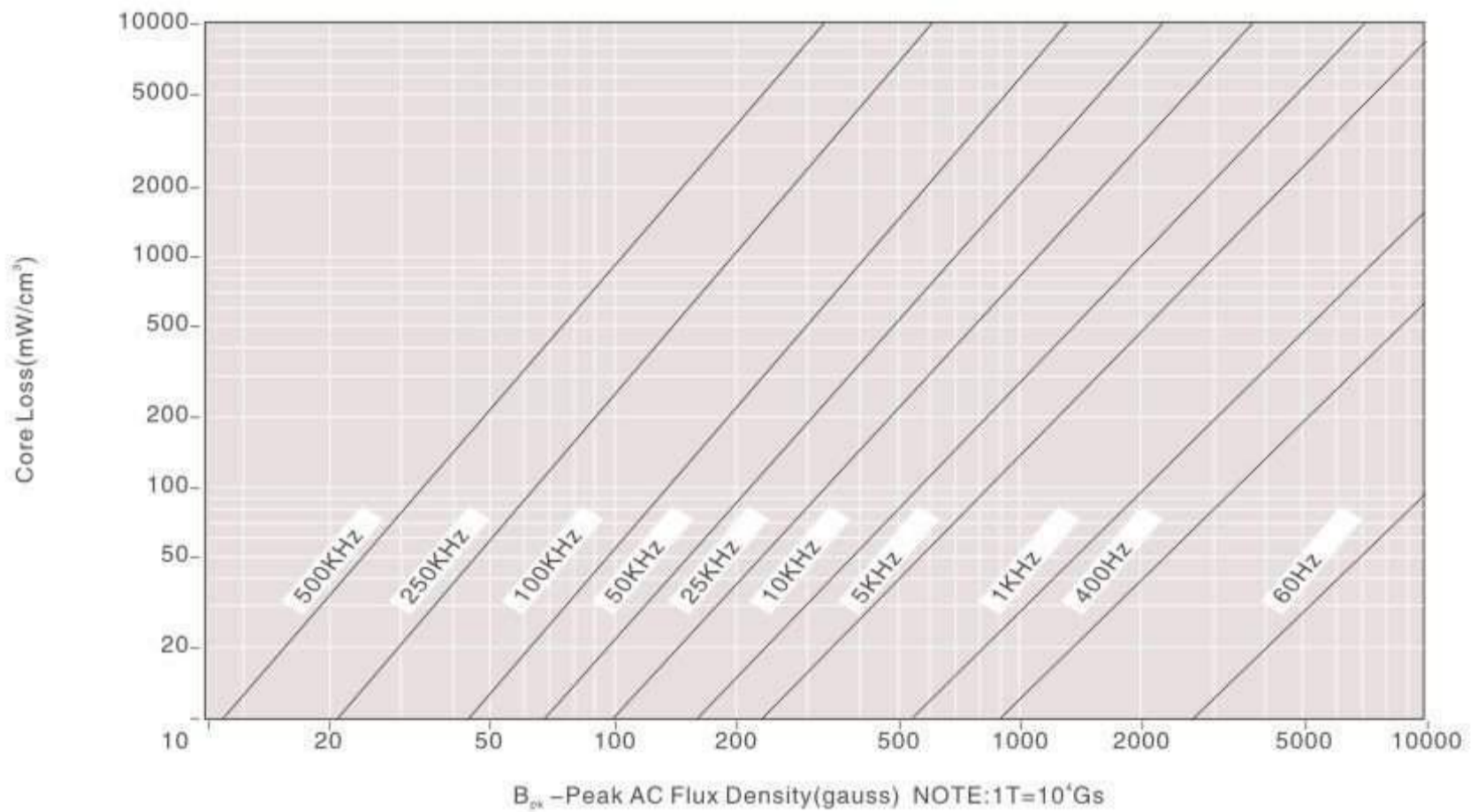


-38Material $\mu_c = 85$ Core Loss vs Peak AC Flux Density

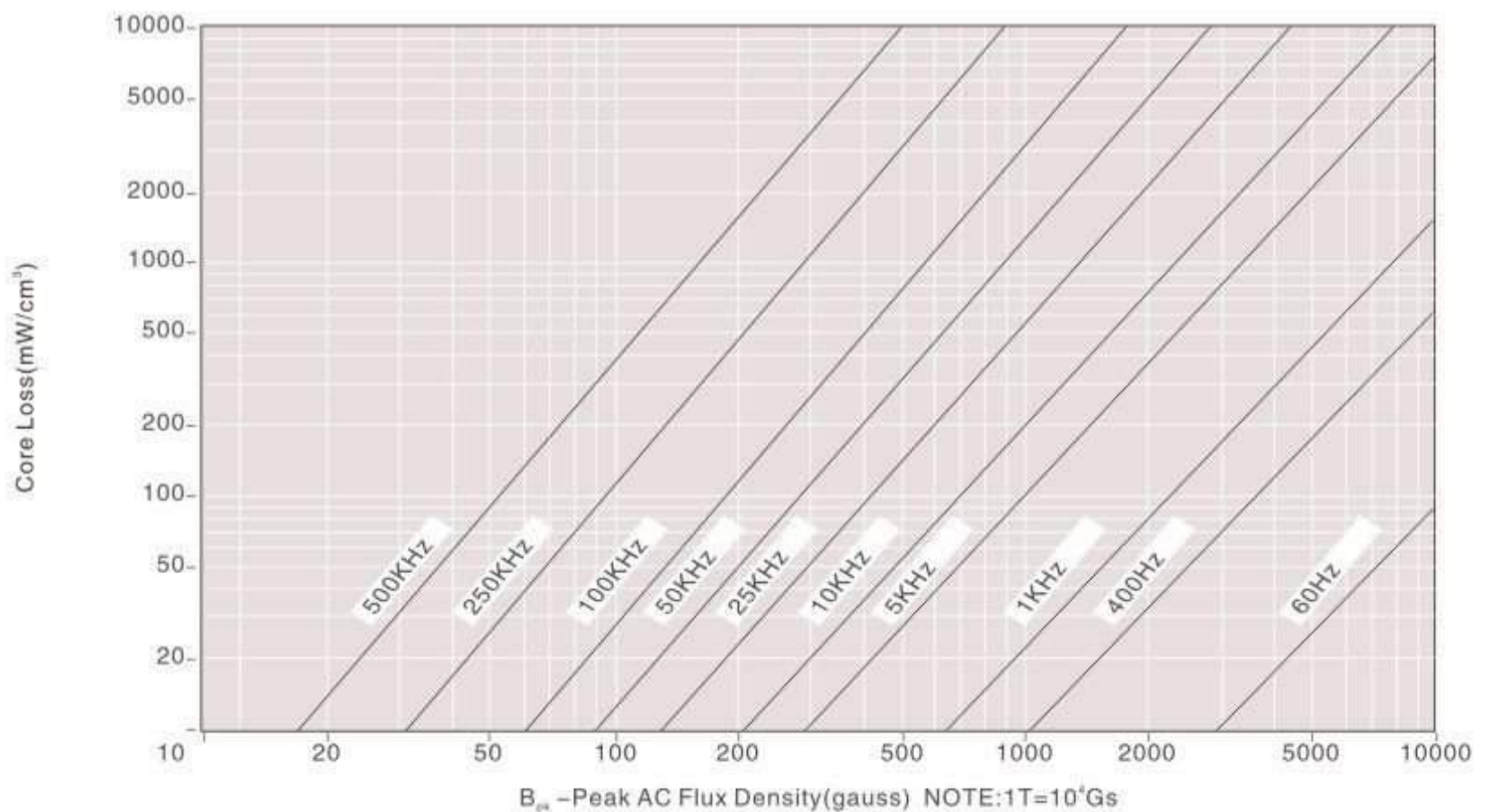


Magnetic Characteristics

-40Material $\mu_r=60$ Core Loss vs Peak AC Flux Density

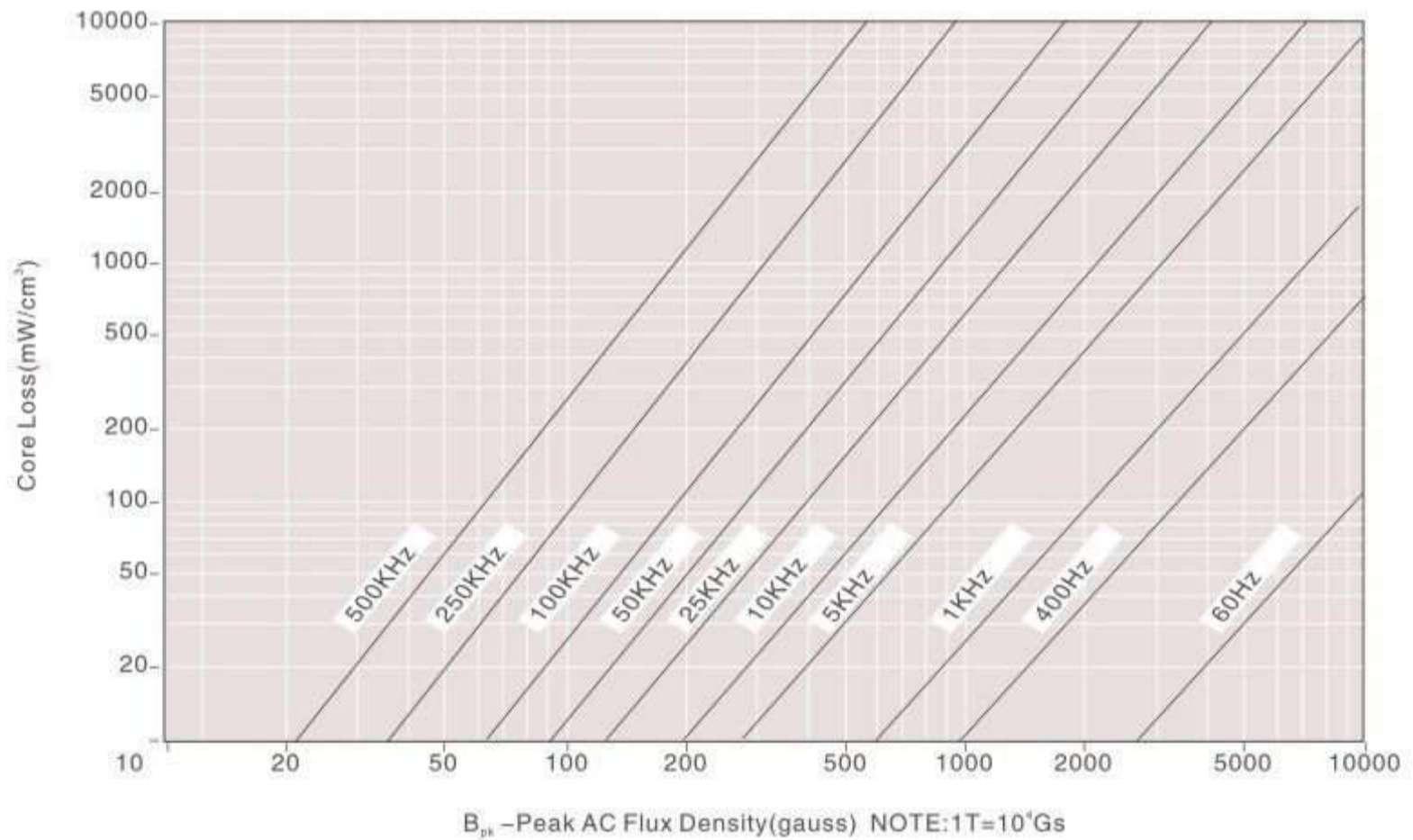


-45Material $\mu_r=100$ Core Loss vs Peak AC Flux Density



Magnetic Characteristics

-52Material $\mu_r = 75$ Core Loss vs Peak AC Flux Density





HTC2000[®] Iron Powder Cores

Introduction of Products
Products Characteristics
Core Size
Magnetic Characteristics

HTC200[®] Iron Powder Cores



HTC200[®] Iron Powder Cores

Introduction of products

Thermal Aging problem of Iron Powder Cores In general, conventional iron powder cores use the organic material as binder, such as epoxy. Due to the organic material's low resistance to high temperature, the general resin breakdown temperature is only about 125°C to 150°C. Iron powder cores using these binders will have their annealing temperature below 150°C. The stress force has not been eliminated completely and the cores' performance is affected. In the meantime, the demanding requirement of power and board density by electronics industry worsen the working environment. The elevated temperature operating environment causes the conventional iron powder cores to age in very short period of time. The eddy current loss will increase during the thermal aging process and cause overheating which eventually leads to the permanent damage of the core.

KDM HTC200[®] Iron Powder Cores Series are designed to be thermal aging free up to 200°C using KDM's state-of-the-art proprietary high temperature resistance binder. With the use of the high temperature resistance binder, core's annealing temperature can reach 500°C. The stress force can be better eliminated and the cores' property is improved. This enables our HTC200[®] cores to operate up to 200°C without breakdown. Design engineers can have more flexibility and peace of mind when they select KDM's HTC200[®] Iron Powder Cores Series for their power supply designs.

HTC200[®] is registered trademark of Zhejiang NBTM KeDa Magnetolectricity Co.,Ltd.

HTC200[®] Iron Powder Cores

Material Properties

KDM Mix No.	Perm. (μ_r)	Core Loss(mW/cm ³)		DC-Bias(% μ_o)		Color Code	Micrometals Mix No.	CURIE Mix No.
		100kHz 140Gs	250kHz 300Gs	HDC=50 Oe	HDC=100 Oe			
HTC200 [®] -76	75	58	950	59	36	Blue	/	75H-TAF200
HTC200 [®] -75	75	83	1200	51	31	Yellow	/	75-TAF200
HTC200 [®] -55	55	46	650	75	50	Green	-60	55-TAF200 SF53-TAF200
HTC200 [®] -35	35	82	1500	85	68	Gray	-61	33-TAF200
*KW-35 μ_i	35	30	490	92	77	Blue	-63	35-TAF200 SF36Q-TAF200
*KW-45 μ_i	45	28	390	85	70	Blue	/	SF49Q-TAF200
*KW-55 μ_i	55	28	480	80	63	Blue	/	SF56Q-TAF200
*KW-66 μ_i	66	21	440	65	40	Blue	-66	/

* KW is a low cost Si-Fe material produced by KDM, please contact R&D department to get more information.

Surface Coating

KDM HTC200[®] Iron Powder Cores Series are coated by improved epoxy that can resist high temperature up to H grade. The coating also complies with the requirement of environmental protection and RoHS. The finishing has a minimum dielectric strength of 600Vrms at 50Hz and can resist most cleaning solvents. However, extended exposures to certain solvents may have detrimental effects.

The method of testing the insulation strength of the surfacing coating: put two electroplates on the corners of the cores' two surfaces, applies 50Hz, 1250Vrms and last for 5 seconds.

Size Tolerance(mm)

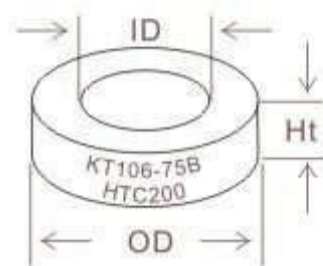
Toroidal Cores	KDM Part No.	OD	ID	Ht	KDM Part No.	OD	ID	Ht
	KT16 - KT20	± 0.25	± 0.25	± 0.25	KT150 - KT225	± 0.63	± 0.63	± 0.75
	KT25 - KT38	± 0.38	± 0.38	± 0.50	KT249 - KT400	± 0.75	± 0.75	± 0.75
	KT40 - KT72	± 0.50	± 0.50	± 0.50	KT520 - KT650	± 1.25	± 1.25	± 1.25
	KT80 - KT141	± 0.50	± 0.50	± 0.63				

Tolerance includes coating

HTC200[®] Iron Powder Cores

TYPICAL PART NO. KT106-75B-HTC200

KDM Toroidal Cores
 OD in 100th inches
 KDM Material Mix No.
 Letter Indicates Alternate Height
 HTC200[®] Iron Powder Cores



l_e : (Mean Magnetic Path Length)

A_e : (Cross Section Area)

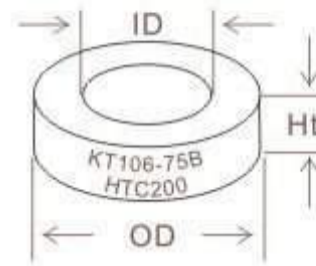
V : (Core Volume)

KDM Part No.	OD in/mm	ID in/mm	Ht in/mm	l_e cm	A_e cm ²	V cm ³	A_l (nH/N ²) ± 10%			
							76	75	55	35
KT16	.160/4.06	.078/1.98	.060/1.52	.930	.015	.014	13.5	14.5	9.5	6.0
KT20	.200/5.08	.088/2.24	.070/1.78	1.15	.023	.026	17.5	18.5	13.0	7.8
KT25	.225/6.48	.120/3.05	.096/2.44	1.50	.037	.055	23.0	24.5	17.0	10.0
KT26	.265/6.73	.105/2.67	.190/4.83	1.47	.090	.133	56.0	57.0	41.5	24.0
KT27	.280/7.11	.151/3.84	.128/3.25	1.71	.047	.080	25.5	27.5	18.5	11.5
KT30	.307/7.80	.151/3.84	.128/3.25	1.84	.060	.110	30.5	33.5	22.0	14.0
KT37	.375/9.53	.205/5.21	.128/3.25	2.31	.064	.147	26.0	28.5	19.0	12.0
KT38	.375/9.53	.175/4.45	.190/4.83	2.18	.114	.248	49.0	49.0	36.0	20.0
KT40	.400/10.2	.205/5.21	.163/4.14	2.41	.093	.223	36.0	36.0	26.0	16.5
KT44	.440/11.2	.229/5.82	.159/4.04	2.68	.099	.266	35.0	37.0	25.5	18.0
KT44D	.440/11.2	.229/5.82	.338/8.59	2.68	.212	.567	70.0	72.0	51.5	33.0
KT50	.500/12.7	.303/7.70	.190/4.83	3.19	.112	.358	33.0	33.0	24.0	17.5
KT50B	.500/12.7	.303/7.70	.250/6.35	3.19	.148	.471	43.5	43.5	32.0	23.0
KT50C	.500/12.7	.303/7.70	.335/8.51	3.19	.200	.637	59.0	61.0	43.0	28.3
KT50D	.500/12.7	.303/7.70	.375/9.53	3.19	.223	.711	66.0	72.0	48.5	31.0
KT51C	.500/12.7	.200/5.08	.250/6.35	2.79	.223	.622	75.0	83.0	55.0	37.0
KT60	.600/15.2	.336/8.53	.234/5.94	3.74	.187	.699	47.0	50.0	34.5	19.0
KT60D	.600/15.2	.336/8.53	.470/11.9	3.74	.374	1.400	94.0	97.0	69.0	44.0
KT68	.690/17.5	.370/9.40	.190/4.83	4.23	.179	.759	40.0	43.5	29.0	19.5

HTC200[®] Iron Powder Cores

TYPICAL PART NO. KT106-75B-HTC200

KDM Toroidal Cores
 OD in 100th inches
 KDM Material Mix No.
 Letter Indicates Alternate Height
 HTC200[®] Iron Powder Cores



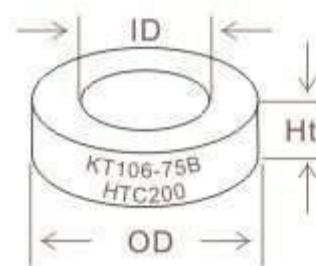
ℓ_e : (Mean Magnetic Path Length)
 A_e : (Cross Section Area)
 V : (Core Volume)

KDM Part No.	OD in/mm	ID in/mm	Ht in/mm	ℓ_e cm	A_e cm ²	V cm ³	A_L (nH/N ²) $\pm 10\%$			
							76	75	55	35
KT68A	.690/17.5	.370/9.40	.250/6.35	4.23	.242	1.03	54.0	58.0	39.5	26.0
KT68D	.690/17.5	.370/9.40	.375/9.53	4.23	.358	1.52	80.0	87.0	59.0	38.0
KT72	.720/18.3	.280/7.11	.260/6.60	4.01	.349	1.40	82.0	90.0	60.0	36.0
KT80	.795/20.2	.495/12.6	.250/6.35	5.14	.231	1.19	42.0	46.0	31.0	18.0
KT80B	.795/20.2	.495/12.6	.375/9.53	5.14	.347	1.78	63.0	71.0	46.5	29.5
KT80D	.795/20.2	.495/12.6	.500/12.7	5.14	.453	2.33	83.0	92.0	61.0	44.0
KT90	.900/22.9	.550/14.0	.375/9.53	5.78	.395	2.28	64.0	70.0	47.0	30.0
KT94	.942/23.9	.560/14.2	.312/7.92	5.97	.362	2.16	57.0	60.0	42.0	25.0
KT106	1.060/26.9	.570/14.5	.437/11.1	6.49	.659	4.28	95.0	93.0	70.0	45.0
KT106A	1.060/26.9	.570/14.5	.312/7.92	6.49	.461	3.00	67.0	67.0	49.0	31.5
KT106B	1.060/26.9	.570/14.5	.575/14.6	6.49	.858	5.57	124.0	124.0	91.0	58.0
KT124	1.245/31.6	.710/18.0	.280/7.11	7.75	.459	3.55	56.0	58.0	41.0	26.0
KT130	1.300/33.0	.780/19.8	.437/11.1	8.28	.698	5.78	79.0	81.0	58.0	35.0
KT130A	1.300/33.0	.780/19.8	.225/5.72	8.28	.361	2.99	41.0	41.0	30.0	19.0
KT131	1.300/33.0	.640/16.3	.437/11.1	7.72	.885	6.84	108.0	116.0	79.0	52.5
KT132	1.300/33.0	.700/17.8	.437/11.1	7.96	.805	6.41	95.0	103.0	70.0	44.5
KT141	1.415/35.9	.880/22.4	.412/10.5	9.14	.674	6.16	69.0	75.0	51.0	32.0
KT150	1.510/38.4	.845/21.5	.437/11.1	9.38	.887	8.31	89.0	96.0	65.0	41.5
KT150A	1.510/38.4	.845/21.5	.325/8.26	9.38	.657	6.16	66.0	66.0	48.5	31.0

HTC200[®] Iron Powder Cores

TYPICAL PART NO. KT106-75B-HTC200

KDM Toroidal Cores
 OD in 100th inches
 KDM Material Mix No.
 Letter Indicates Alternate Height
 HTC200[®] Iron Powder Cores



ℓ_e : (Mean Magnetic Path Length)

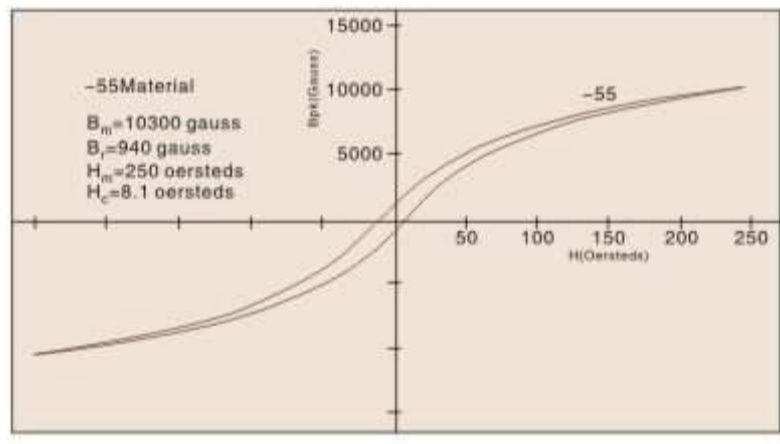
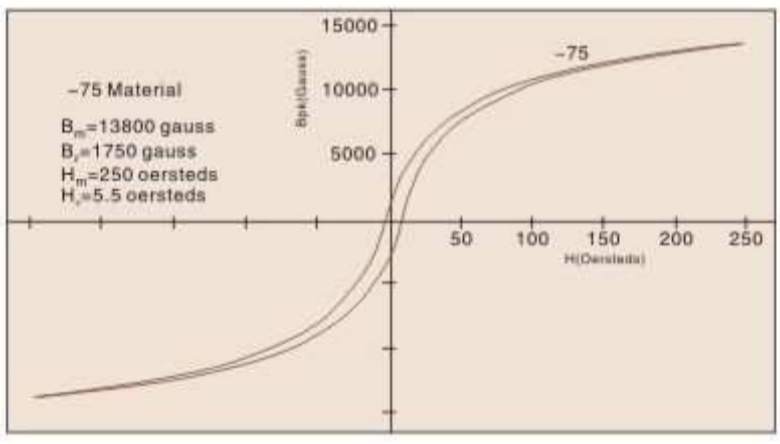
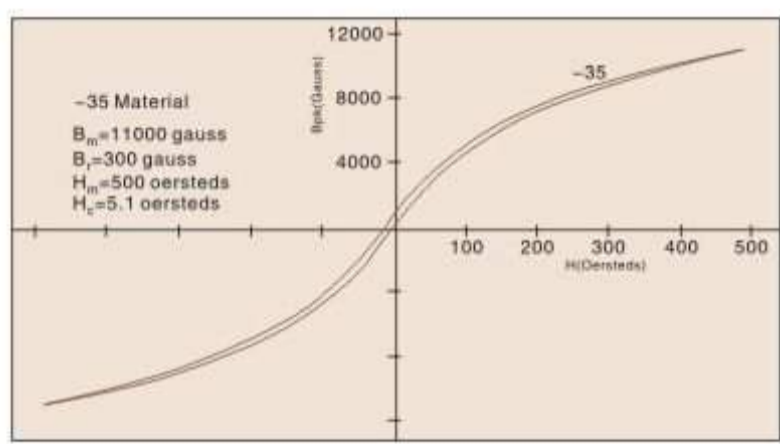
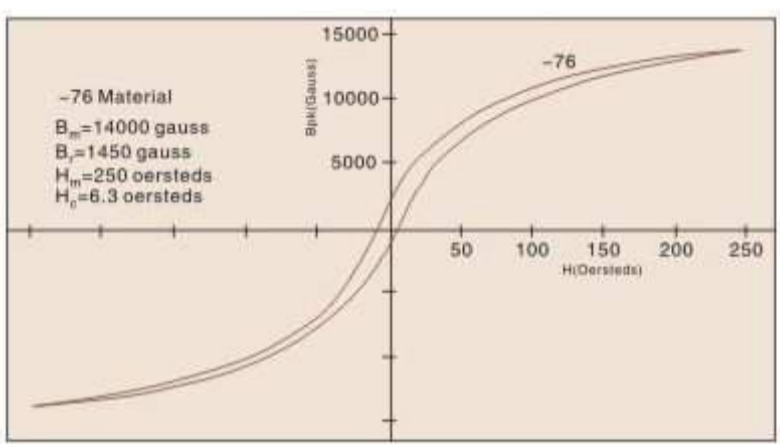
A_c : (Cross Section Area)

V : (Core Volume)

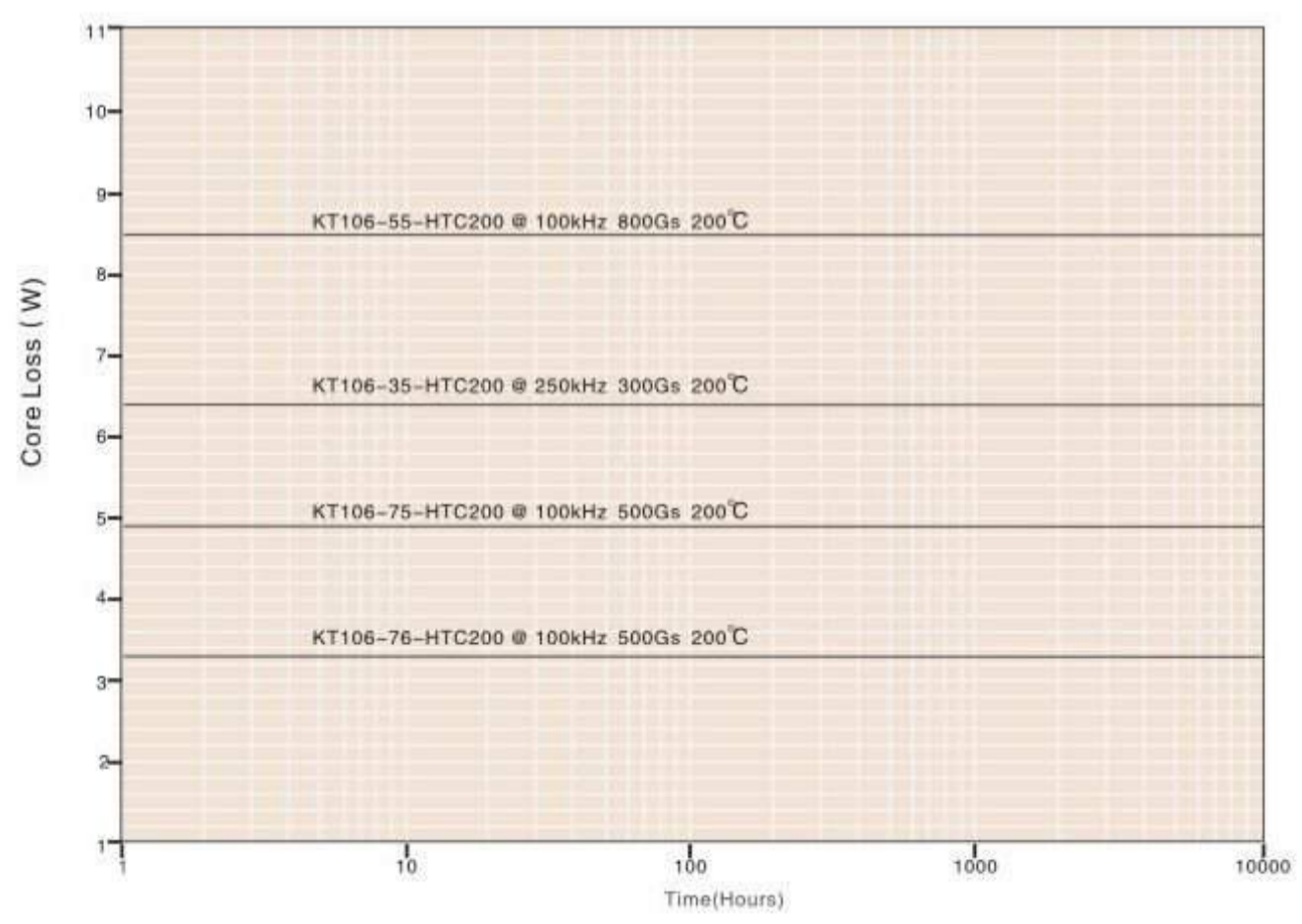
KDM Part No.	OD in/mm	ID in/mm	Ht in/mm	ℓ_e cm	A_c cm ²	V cm ³	A_L (nH/N ²) $\pm 10\%$			
							76	75	55	35
KT157	1.570/39.9	.950/24.1	.570/14.5	10.1	1.06	10.7	99.0	100.0	73.0	42.0
KT175	1.750/44.5	1.070/27.2	.650/16.5	11.2	1.34	15.0	105.0	105.0	82.0	48.0
KT184	1.840/46.7	.950/24.1	.710/18.0	11.2	1.88	21.0	159.0	169.0	116.0	72.0
KT200	2.000/50.8	1.250/31.8	.550/14.0	13.0	1.27	16.5	92.0	92.0	67.0	42.5
KT200B	2.000/50.8	1.250/31.8	1.000/25.4	13.0	2.32	30.0	155.0	160.0	120.0	78.5
KT201	2.000/50.8	.950/24.1	.875/22.2	11.8	2.81	33.2	224.0	224.0	164.0	104.0
KT224C	2.250/57.2	1.250/31.8	.750/19.1	14.0	2.31	32.2	155.0	155.0	114.0	72.0
KT225	2.250/57.2	1.405/35.7	.550/14.0	14.6	1.42	20.7	92.0	98.0	67.0	42.5
KT225B	2.250/57.2	1.405/35.7	1.000/25.4	14.6	2.59	37.8	155.0	160.0	114.0	72.0
KT249	2.500/63.5	1.405/35.7	1.000/25.4	15.6	3.36	52.3	203.0	203.0	149.0	95.0
KT250	2.500/63.5	1.250/31.8	1.000/25.4	15.0	3.84	57.4	242.0	242.0	177.0	113.0
KT300	3.040/77.2	1.930/49.0	.500/12.7	19.8	1.68	33.4	80.0	80.0	58.0	37.0
KT300D	3.040/77.2	1.930/49.0	1.000/25.4	19.8	3.38	67.0	160.0	160.0	116.0	74.0
KT350	3.500/89.0	2.140/54.4	1.000/25.4	22.5	4.39	98.0	171.0	171.0	125.0	79.0
KT400	4.000/102	2.250/57.2	.650/16.5	25.0	3.46	86.4	131.0	131.0	96.0	60.0
KT400D	4.000/102	2.250/57.2	1.300/33.0	25.0	6.85	171	262.0	262.0	192.0	120.0
KT520	5.200/132	3.080/78.2	.800/20.3	33.1	5.24	173	137.0	149.0	100.0	68.0
KT520D	5.200/132	3.080/78.2	1.600/40.6	33.1	10.5	347	274.0	298.0	200.0	130.0
KT650	6.500/165	3.500/88.9	2.000/50.8	39.9	18.4	734	405.0	434.0	310.0	200.0

HTC200[®] Iron Powder Cores

B-H Curves

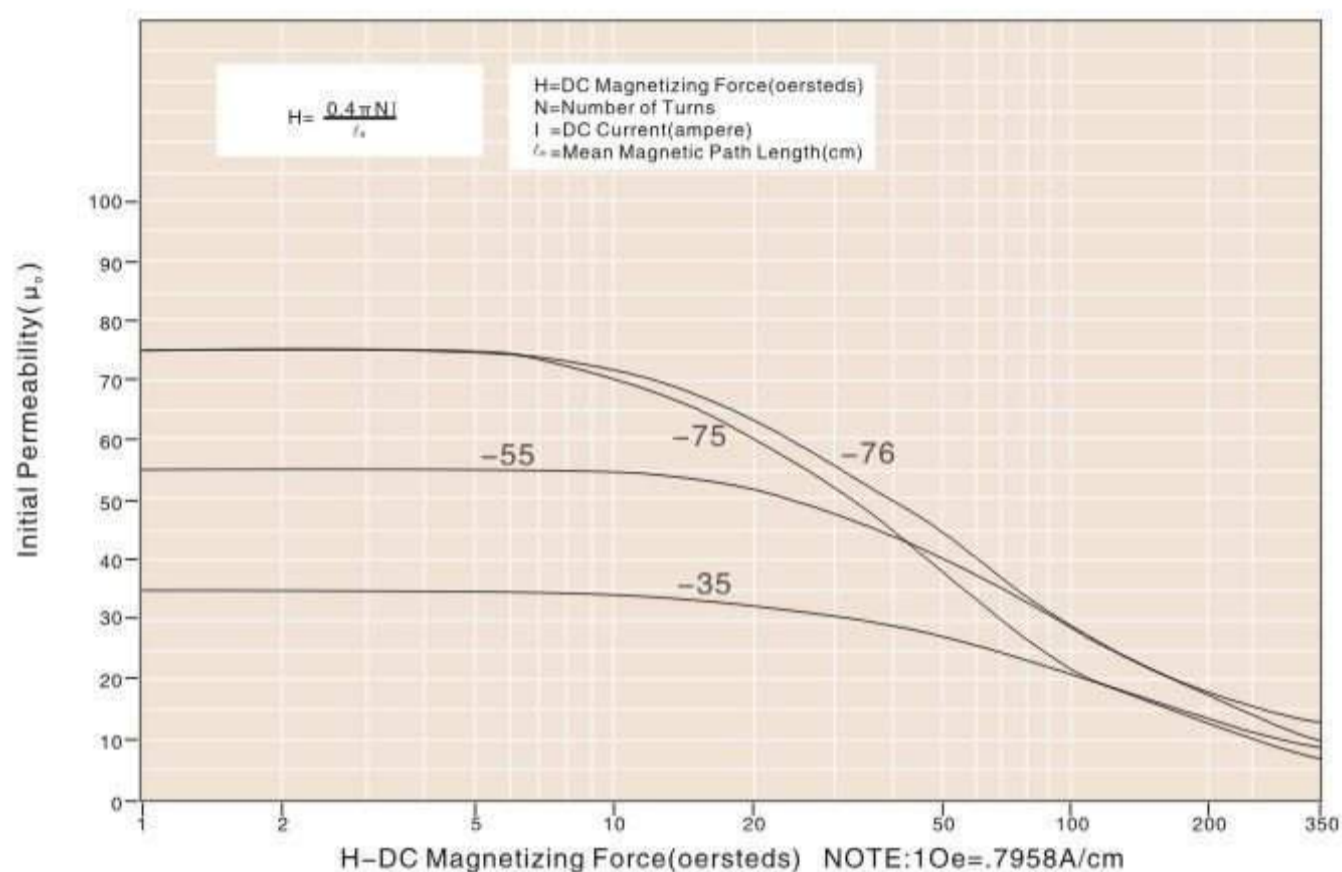


Core Loss vs Time

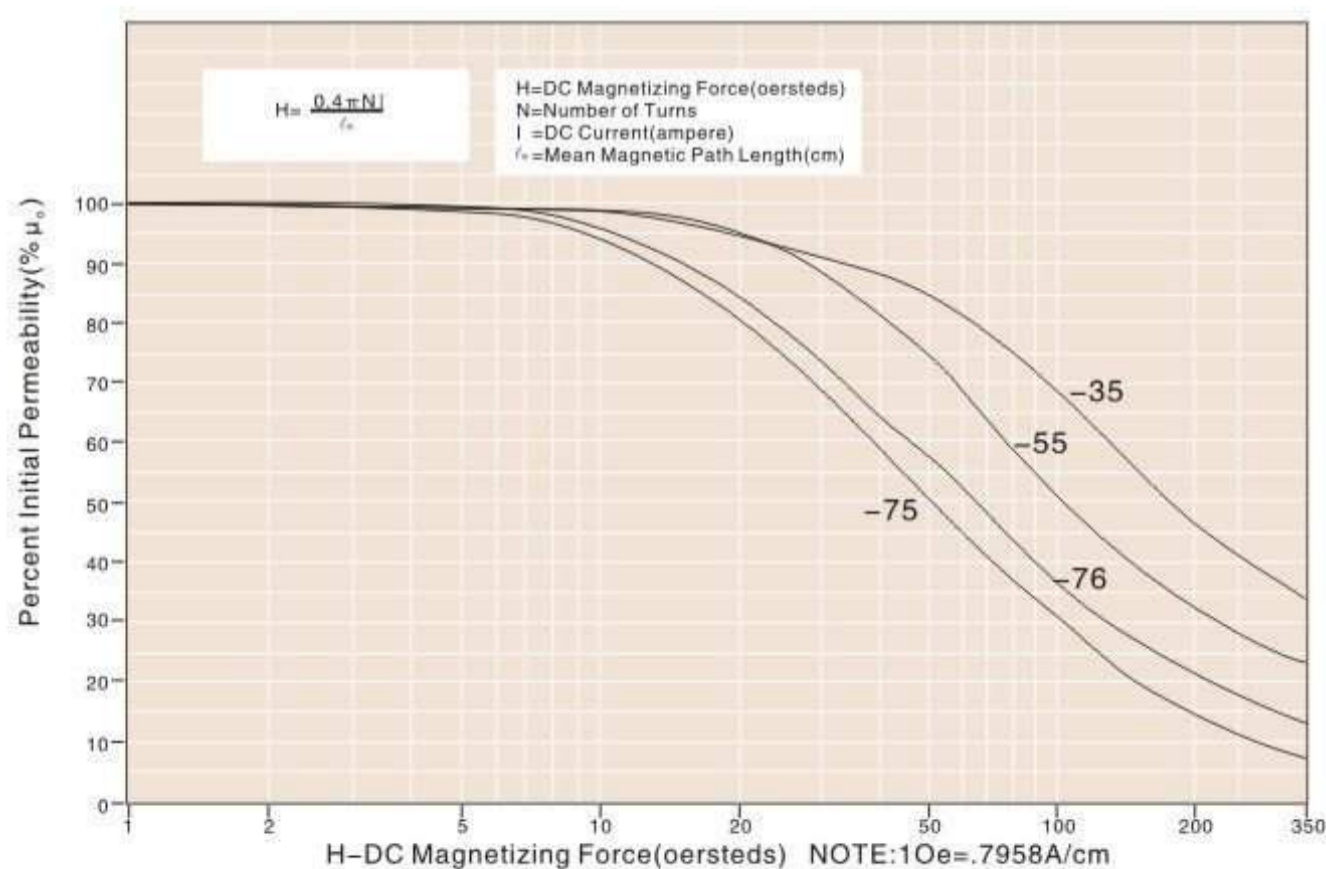


HTC200[®] Iron Powder Cores

Initial Permeability(μ_0) vs DC Magnetizing Force

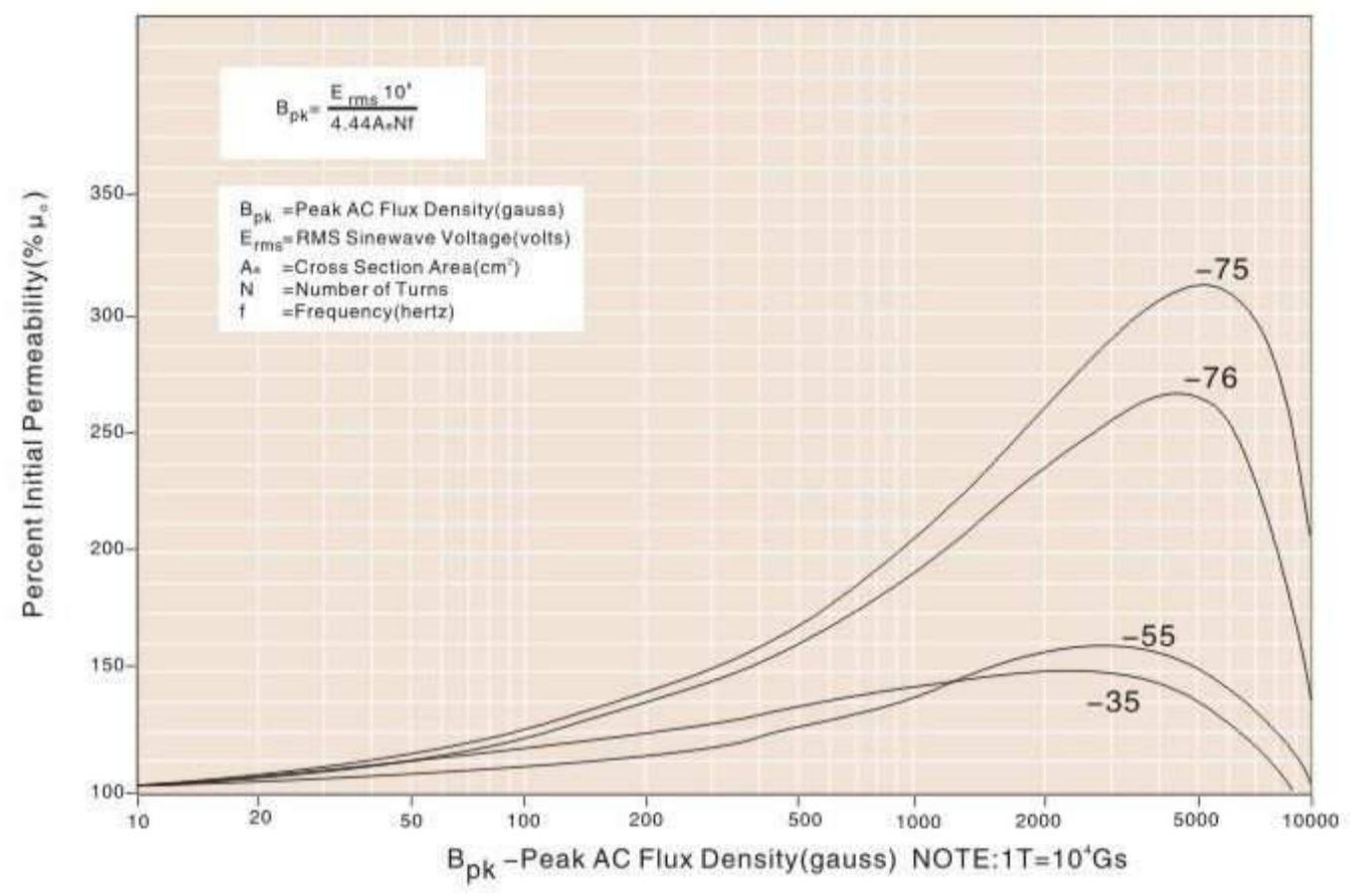


Percent Initial Permeability(% μ_0) vs DC Magnetizing Force

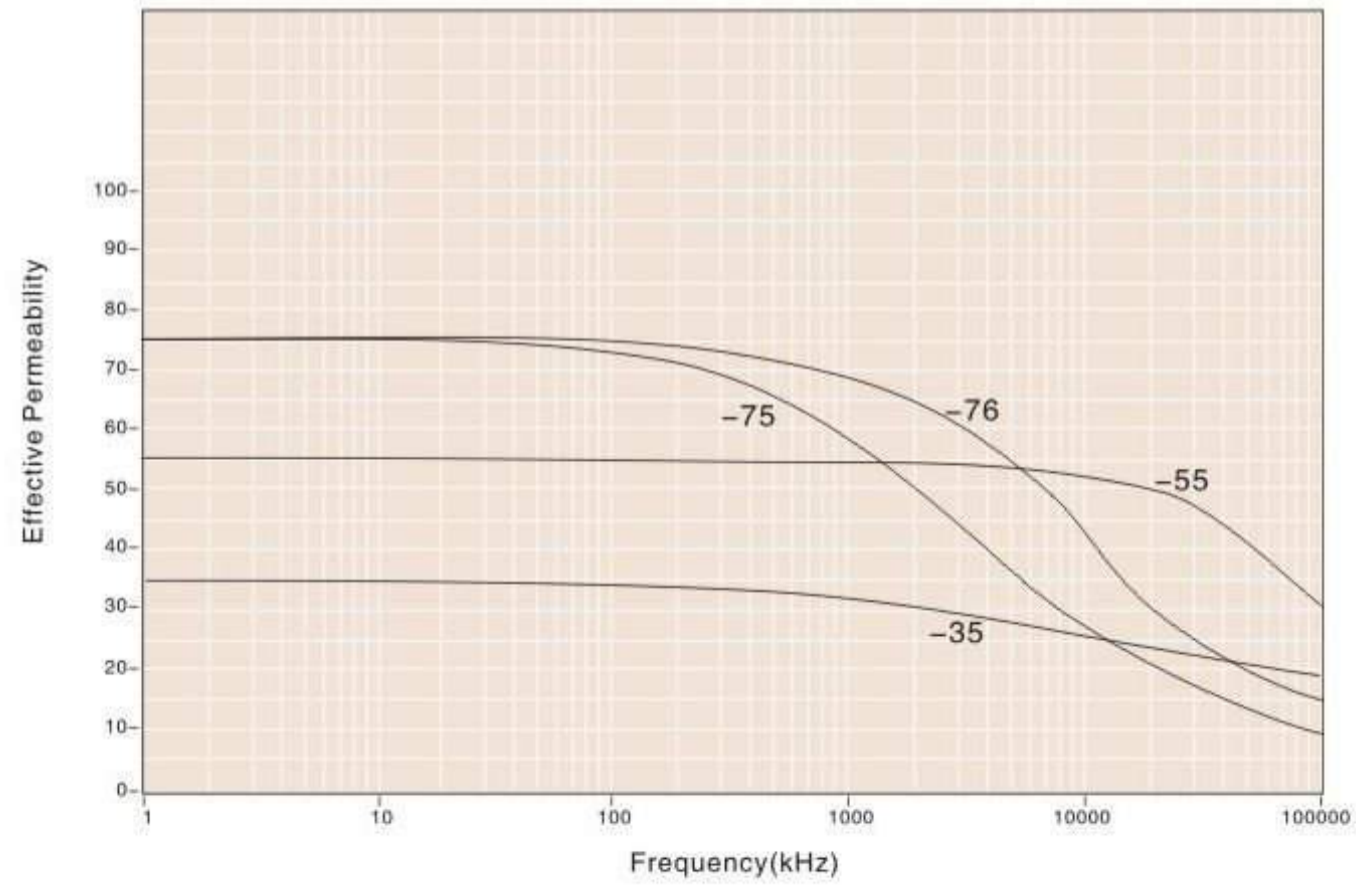


HTC200[®] Iron Powder Cores

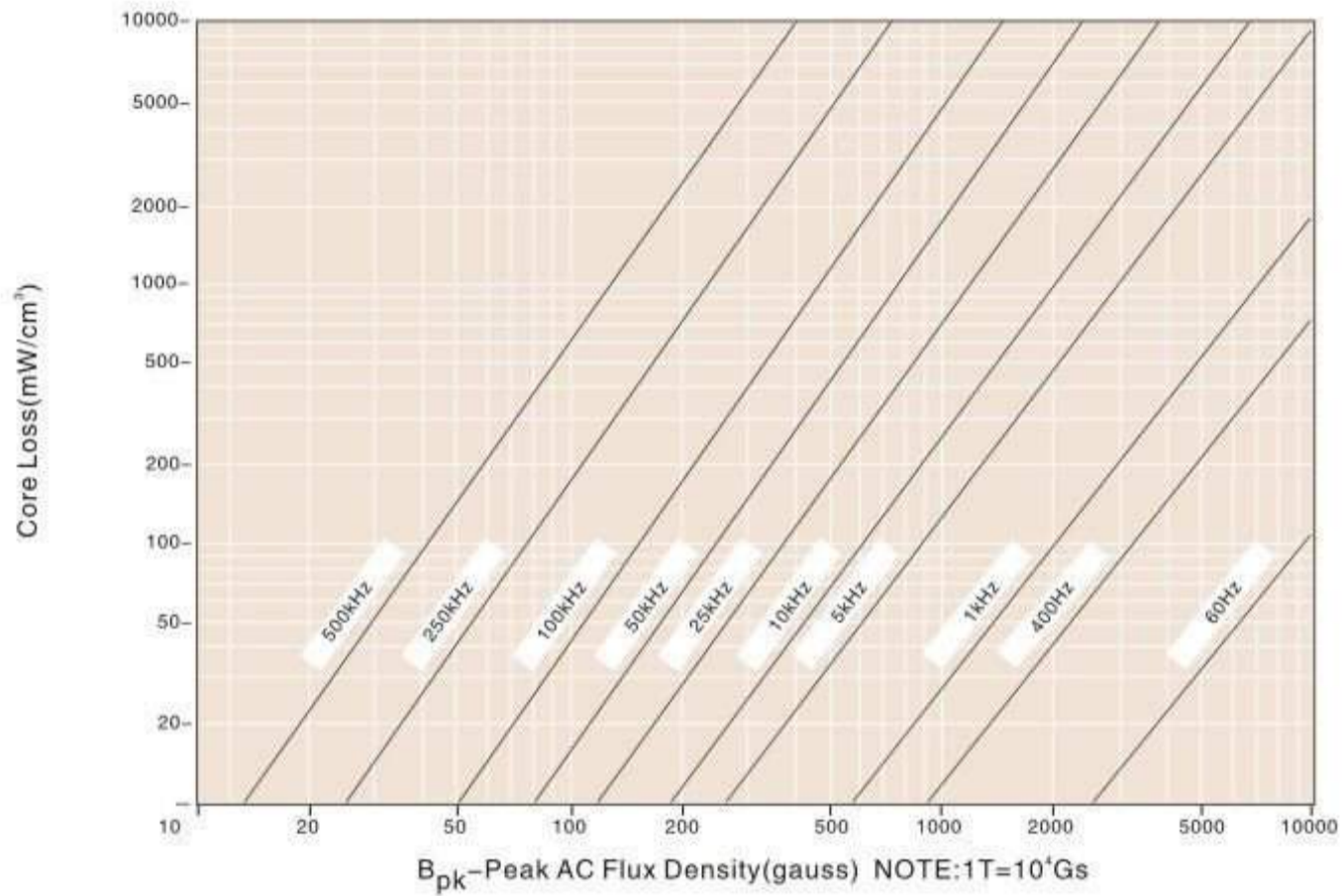
Percent Initial Permeability(% μ_o) vs Peak AC Flux Density



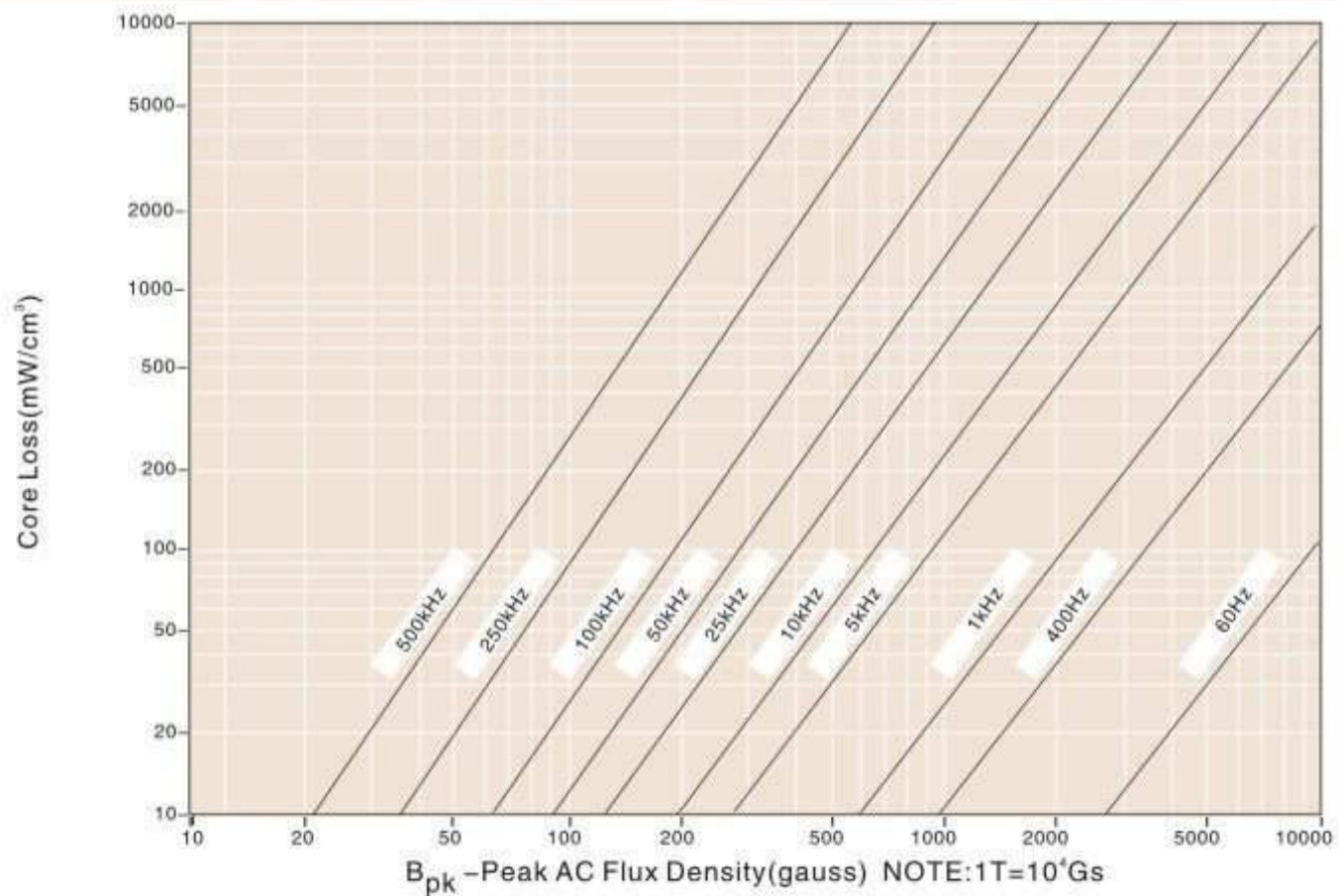
Effective Permeability vs Frequency



-75Material $\mu_e = 75$ Core Loss vs Peak AC Flux Density

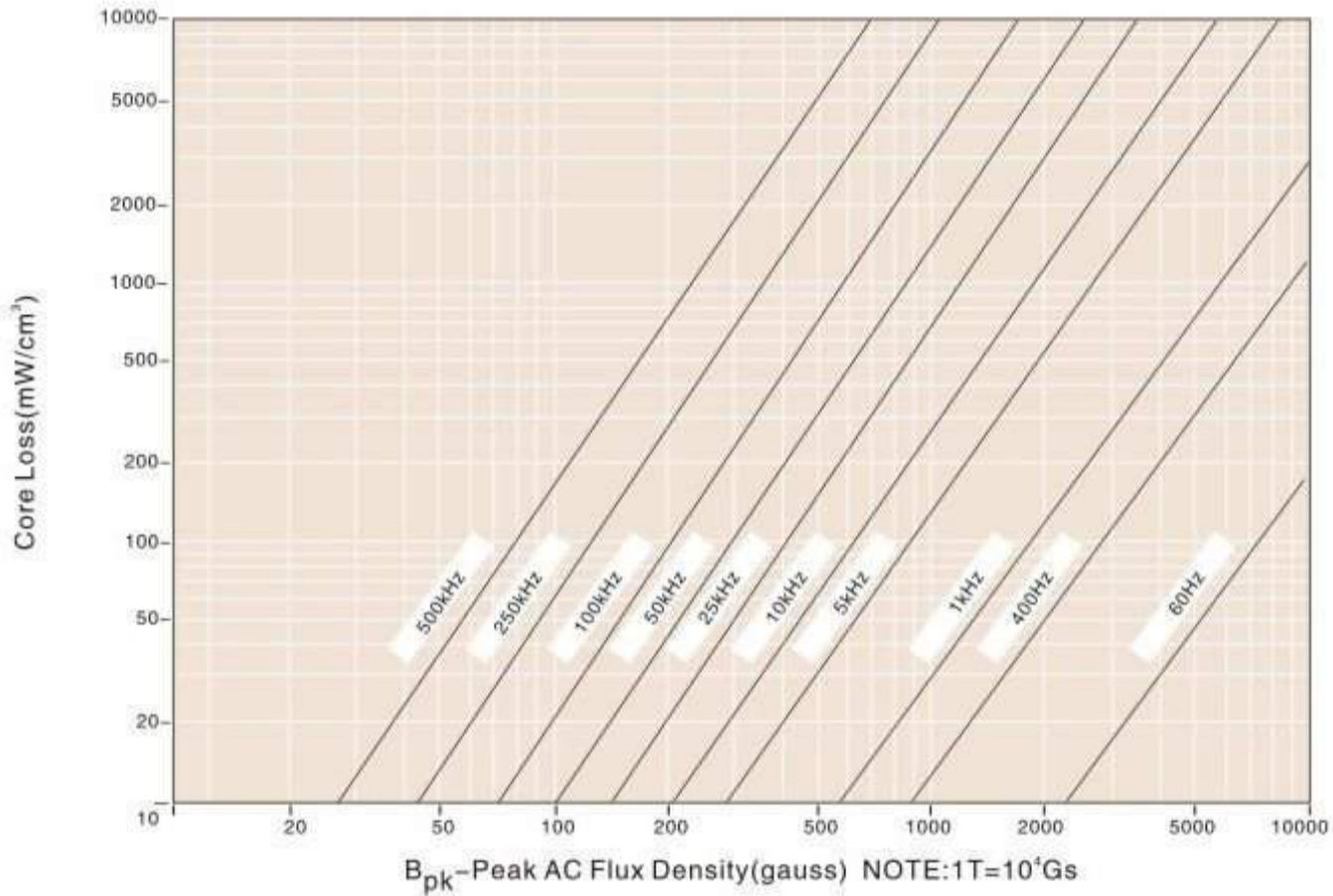


-76Material $\mu_e = 75$ Core Loss vs Peak AC Flux Density

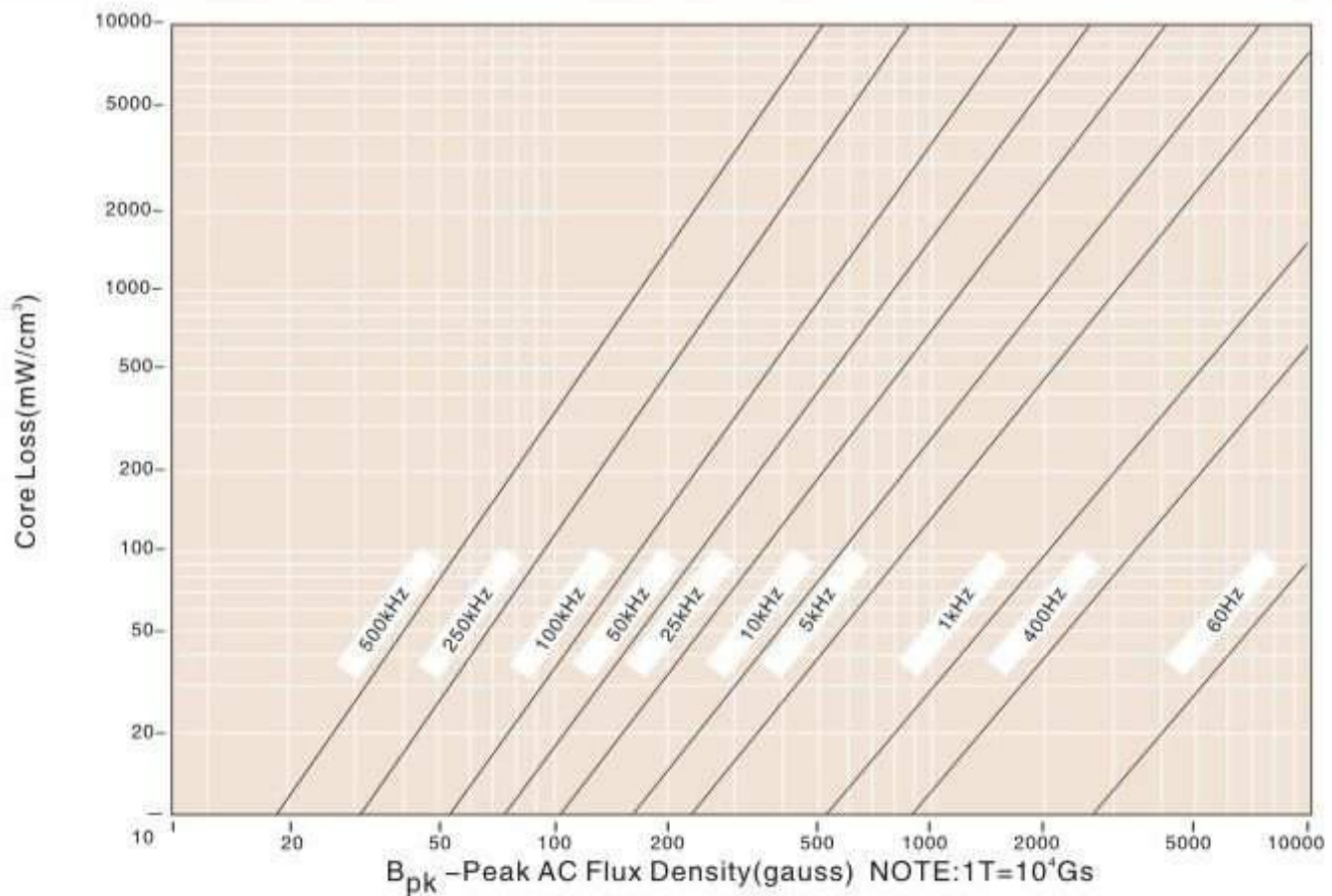


HTC200[®] Iron Powder Cores

-55Material $\mu_r = 55$ Core Loss vs Peak AC Flux Density



-35Material $\mu_r = 35$ Core Loss vs Peak AC Flux Density





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