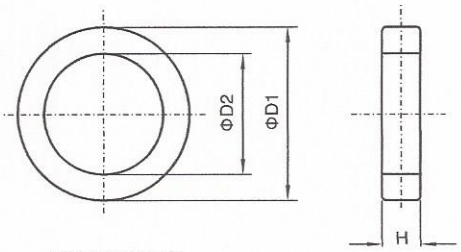
Mn-Zn SERIES MATERIAL CROSS REFERENCE LIST

Hersteller → Material

SHINHOM	MTL	P2	P3	P4	P5	HQ2K	H3K	H5K	H6K	H7K	H10K	H12K	H15K
	μi	2500	2300	2200	1400	2000	3000	5000	6000	7000	10000	12000	15000
TDK		PC30	PC40	PC44	PC50 PC47	H6B H6K	H7C2	H7A	H1B	H1D	H5C2	H5D	H5C3
NICERA		NC-1H NC-1M	NC-2H	2HM5 2M	5M	-	NC-1L	NC-1J	NC-5Y	NC-7	NC-10H	NC-12H	NC-15H
TOKIN		2500B	2500B2 BH2	BH1	B40	2001H	3100B	5000H 4000H	5000H	7000H	10000H	12000H	
HITACHI(NIPPON)		SB-5S	SB-7C	SB-9C	SB-1M	SB-7	SB-5S	GP-7	-	GP-9	GP-11	MT10T	
MMG-NEOSID		F44	F45					F9	F10	FT7/F57	F39		
ISU		PM-1	PM-7	PM-11	PM-5			HM2A	HM3	HM3A	HM5A		HM7A
VOGT		Fi323	Fi324	Fi325			-	Fi340	Fi360		Fi410		
KAWATETSU		MB-2	MB-3	MB-4		-	-	MA-040	MA-055	MA-070	MA-100	MA-120	MA-150
Ferroxcube(PHILPS)		3C80 3C85	3F3 3C94	3C96	3F4/3F3.5	3C10 3H3	3E1 3E28	3E4 3C11	3E25	3E27 3E26	3E5 3E55	3E6	3E7
MAGNETICS		P	R			G	F	J	J	-	W		H
SAMWHA		PL-5	PL-7	PL-9	PL-F1			SM-50		SM-70S	SM-100		SM-150
AVX/TPC		B1	B2/F1	F2	F4			A4	A5	A3	A2		
THOMSON		B50	B51			T13		T6	T4				
EPCOS(SIEMENS)		N41 N27 N26	N67 N87	N97 N53	N49	N48	N41 N61	N30	T35	T37 T44	T38	T42	T46
LCC		F1	F2			S4/S3		A6/T6	A4/T4	A2	A3		
FDK		6H10	6H20	6H40	7H10	-	-	-	2H06	2H07	2H10	2H12	2H15
ACME		P2	P4	P5				A05	A06	A07	A10	A12	A15
TOMITA		2E6	2G8	2H8	2H6	2C3	2F6	2F1 2G4	2G3	2E1 2G1	2E2	2H2	2H1
ISKRA		25G 45G	35G	55G	75G	26G		19G		22G	12G	32G	52G
TDG		TP1	TP4	TP4A	TP5			TL5	TL6	TL7	TL10	TL13	TL15
DMEGC		DMR30	DMR40	DMR44	DMR50		R4K	R5K	R6K	R7K	R10K	R12K	R15K
COSMO		CF101	CF129	CF138				CF195	CF195		CF197		

TOROIDAL CORES



TOROIDAL

H6K **T4×2×1** **C/P**

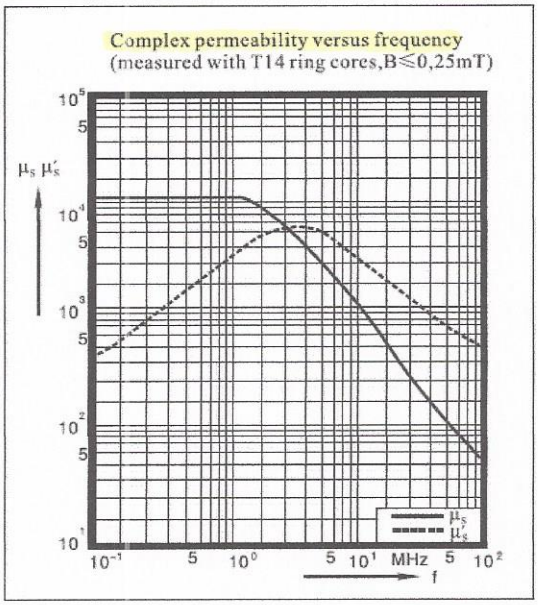
Material | Core Size OD×ID×HT | Coating C=Epoxy P=Parylene

(MATERIALS):H10K, H8K, H6K, H5K, P1, P2, P3
Dimensions & Effective parameter

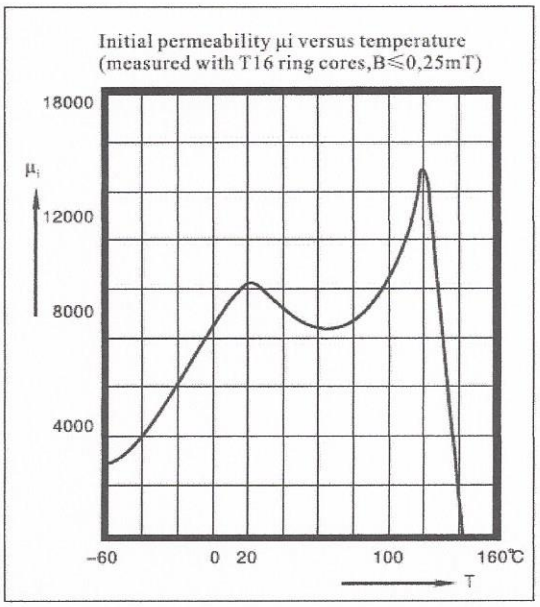
CORES TYPE	Dimensions(mm)			Effective parameter			AL value				
	ØD1	ØD2	H	Ae(mm²)	Le(mm)	Ve(mm³)	P3	H6K	H8K	H10K	Weight (g)
T2.54×1.27×1.27	2.54±0.2	1.27±0.15	1.27±0.25	0.075	5.531	4.268	440±20%	880±20%	1320±20%	1761±20%	0.03
T3.05×1.27×1.27	3.05±0.25	1.27±0.15	1.27±0.15	1.037	5.99	6.211	570±20%	1112±20%	1668±20%	2224±20%	0.04
T3.05×1.78×1.52	3.05±0.25	1.78±0.20	1.52±0.15	0.945	7.226	6.826	420±20%	821±20%	1232±20%	1643±20%	0.05
T3.05×1.78×1.27	3.05±0.25	1.78±0.20	1.27±0.15	1.035	7.226	5.688	320±20%	685±20%	1027±20%	1369±20%	0.04
T3.5×1.78×1.78	3.50±0.25	1.78±0.20	1.78±0.20	1.433	7.62	10.919	570±20%	1168±20%	1752±20%	2336±20%	0.05
T3.94×2.24×1.27	3.94±0.3	2.24±0.2	1.27±0.15	1.052	9.196	9.677	360±20%	719±20%	1078±20%	1438±20%	0.05
T3.94×2.24×2.54	3.94±0.3	2.24±0.2	2.54±0.2	2.105	9.196	19.353	720±20%	1438±20%	2157±20%	2876±20%	0.10
T3.94×1.78×1.78	3.94±0.3	1.78±0.2	1.78±0.2	1.822	8.09	14.75	680±20%	1413±20%	2120±20%	2827±20%	0.05
T4×2×1	4.0±0.3	2.0±0.2	1.0±0.1	1.0	9.06	9.06	330±20%	690±20%	970±20%	1400±20%	0.06
T4×2×2	4.0±0.3	2.0±0.2	2.0±0.1	1.3	9.06	11.8	430±20%	900±20%	1260±20%	1800±20%	0.09
T5×3×2	5.0±0.3	3.0±0.3	2.0±0.2	2.0	12.3	24.6	470±20%	1000±20%	1400±20%	2000±20%	0.14
T6×3×2	6.0±0.3	3.0±0.3	2.0±0.2	3.0	14.1	42.4	660±20%	1400±20%	1950±20%	2800±20%	0.21
T6×3×3	6.0±0.3	3.0±0.3	3.0±0.3	6.0	14.1	84.6	1000±20%	2800±20%	3900±20%	5600±20%	0.32
T8×4×3	8.0±0.3	4.0±0.3	3.0±0.2	4.5	20.4	91.9	1030±20%	2070±20%	2910±20%	4150±20%	0.56
T9×5×3	9.0±0.3	5.0±0.3	3.0±0.2	6.1	22.0	134	850±20%	1800±20%	2500±20%	3500±20%	0.60
T10×6×3	10.0±0.3	6.0±0.3	3.0±0.2	6.1	25.1	153	740±20%	1550±20%	2150±20%	3050±20%	0.90
T10×6×5	10.0±0.31	6.0±0.3	5.0±0.3	10.2	25.1	256	1200±20%	2600±20%	3600±20%	5100±20%	1.27
T12×6×4	12.0±0.4	6.0±0.3	4.0±0.2	12.0	27.2	326	1300±20%	2800±20%	3900±20%	5600±20%	1.51
T12.7×7.8×5	12.7±0.4	7.8±0.3	5.0±0.3	14.7	31.6	464	1200±20%	2400±20%	3400±20%	4900±20%	1.75
T12.7×7.14×4.77	12.7±0.4	7.14±0.3	4.77±0.3	12.9	29.5	381	1300±20%	2750±20%	3850±20%	5500±20%	1.90
T12.7×7.14×6.35	12.7±0.4	7.14±0.3	6.35±0.3	17.2	29.5	507	1800±20%	3700±20%	5100±20%	7300±20%	2.70
T12.7×7.92×6.35	12.7±0.4	7.92±0.3	6.35±0.3	14.9	31.2	465	1440±20%	3000±20%	4200±20%	6000±20%	2.16
T14×8×7	14.0±0.4	8.0±0.3	7.0±0.3	20.5	32.8	671	1900±20%	3900±20%	5500±20%	7800±20%	3.75
T14×9×5	14.0±0.4	9.0±0.3	5.0±0.3	12.5	36	452	1060±20%	2200±20%	3100±20%	4400±20%	2.27
T16×8×5	16.0±0.4	8.0±0.3	5.0±0.3	20.0	36.2	724	1660±20%	3500±20%	4850±20%	6900±20%	3.55
T16×9.5×5	16.0±0.4	9.5±0.3	5.0±0.3	16.3	40	653	1250±20%	2600±20%	3650±20%	5200±20%	3.12
T16×12×8	16.0±0.3	12.0±0.3	8.0±0.3	15.9	43.4	689	1100±20%	2300±20%	3200±20%	4600±20%	3.35
T16×9.5×8	16.0±0.4	9.5±0.3	8.0±0.3	26.0	39.2	1019	2000±20%	4200±20%	5850±20%	8350±20%	3.95
T16×8×8	16.0±0.4	8.0±0.3	8.0±0.3	32.0	36.2	1158	2700±20%	5500±20%	7750±20%	11100±20%	4.85

CHARACTERISTICS CURVE H10K

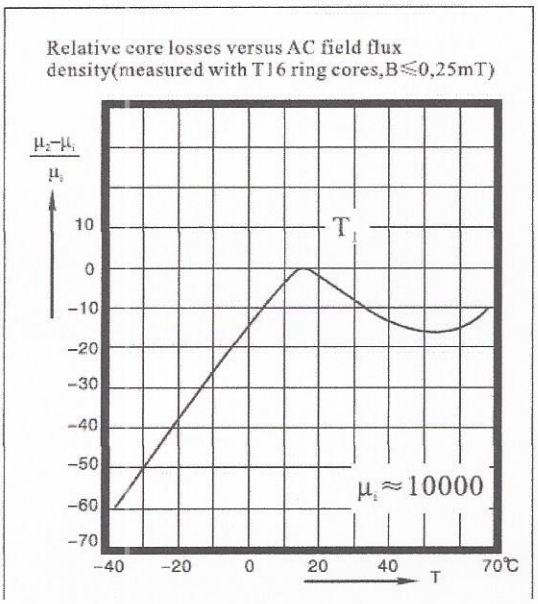
Complex permeability versus frequency
(measured with T14 ring cores,B≤0,25mT)



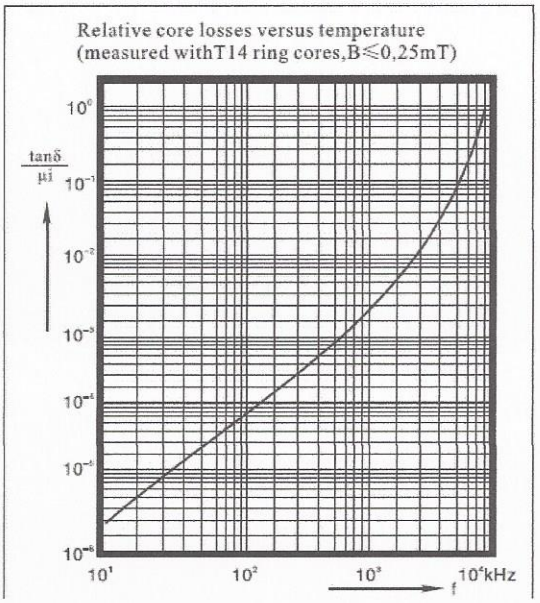
Initial permeability μi versus temperature
(measured with T16 ring cores,B≤0,25mT)



Relative core losses versus AC field flux
density(measured with T16 ring cores,B≤0,25mT)



Relative core losses versus temperature
(measured withT14 ring cores,B≤0,25mT)



MATERIAL CHARACTERISTICS

High μi Material

Material	Temperature	Symbol	Unit	H8K	H10K	H12K	H15K
Initial permeability	25℃	μi		8000±25%	10000±25%	12000±30%	15000±30%
Amplitude permeability at 25kHz sine wave,200mT	25℃	μa					
Curie temperature		Tc	℃	130	120	110	110
Relative Core loss 25KHz200mT	25℃	PV	kw/m^3				
	60℃						
	100℃						
Relative Core loss 100KHz200mT	25℃	PV	kw/m^3				
	60℃						
	100℃						
Saturation flux density at 1000A/m	25℃	Bms	mT	420	420	380	380
	60℃						
	100℃						
Remanence	25℃	Brms	mT	110	90	100	100
	60℃						
	100℃						
Coercivity	25℃	Hc	A/m	12	10	7	12
	60℃						
	100℃						
Resistvity		ρ	Ω · m	0.5	0.2	0.1	0.1
Density		δ	g/cm^3	4.9	4.9	4.9	4.9
Note 1				UF,EI,EE, PQ,EER, RM,EP, T,POT	UF,EI,EE, PQ,EER, RM,EP, T,POT	UF,EP,RM, T,POT	ET,FT,RM EP,T,POT

Symbols and Definitions

μ_i A.C. Initial Permeability

μ_i is defined as the limited value of a ferrite core at the origin of the curve of initial magnetization:

$$\mu_i = \frac{1}{\mu_0} \lim_{H \to 0} \frac{B}{H}$$

μ_0 : Permeability of vacuum
B: A.C.magnetic flux density
H: A.C.magnetic field strength

μ_a Amplitude Permeability
similar with μi ,but magnetized by a large amplitude sine field.

Tan δ / μ_i Relative Loss Factor
loss at low induction level.

PV Power loss
loss at high flux density level.

Bms Effective Saturation Magnetic Flux Density (mT)

Brms Residual Magnetic Flux Density (mT)

Hc Coercive Force (Oersteds) (A/m)

α **F** Temperature Factor of Permeability

$$\alpha F = \frac{\mu_2 - \mu_1}{\mu_1^{\,2}(T_2 - T_1)} \times 10^6 (T_2 > T_1)$$

μ_1: Permeability of T_1
μ_2: Permeability of T_2

η **B** Hysteresis Material Constant

$$\eta B = \frac{\Delta R h}{\omega L \mu_e \Delta B}$$

Δ Rh: hyseresis loss resistance
ω: angular frequency
L : inductace of coil with the core
μ_e: effectve permeability
Δ B: amplitude magnetc flux of density

DF Disaccommodation Factor

$$D_F = \frac{\mu_{i1} - \mu_{i2}}{\mu_{i1}^{\,2}} \times \frac{1}{Log(t_1 / t_2)}$$

μ_{i1}: permeability measured at time t_1 after demagnetization
μ_{i2}: permeability measured at time t_2 after demagnetization

Tc Curie Temperature
temperature at which a ferrite loses is ferromagnetism

ρ Specific Resistivity(Ω m)

d Apparent density,
The Apparent density is defined as a weigh per unit volume

$$d = \frac{W}{V} (g / cm^3)$$

where W: weight of the magnetic core(g)
V : volume of the magnetic core(cm3)

A_L(nH) Inductance Factor
Inductance of a coil on a specified core divided by the square of the number of turns.(Unless otherwise specified the inductance test conditions for the inductance factor are at flux density<10 gauss).

Inductance

$$L = N^2 A_L (\mathrm{n}H)$$

Effective Core Parameters

$$C_1 = \Sigma L / A (cm^{-1})$$

The summation of the magnetic path lengths of each section of a magnetic circuit divided by the corresponding magnetic area of the same section.

$$C_2 = \Sigma L / A^2 (cm^{-3})$$

The summation of the magnetic path lengths of each section of a magnetic circuit divided by the square of the corresponding magnetic area of the same section.

Le=C_1^2/C_2(cm) Effective magnetic path length
Ae=C_1/C_2(cm^2) Effective cross-sectional area
Ve=C_1^3/C_2^2(cm^3) Effective core volume
C_1 (mm^{-1}) Core constant
Aw (mm^2) Winding area of core
Ac (mm^2) cross-sectional centre leg area
W (g) Approx.weigh of core

SHINHOM ELECTRONICS ENTERPRISE CO.,LTD. No.100YanTa Northern Road Zip:710054 Tel:+86-29-87851838 Fax:+86-29-87851840