

Ferrite Cores

Ferrite Material Characteristics

Material Characteristics Table

MATERIAL CHARACTERISTICS

Material	μ_i	H5A	H5B2	H5C2	H5C3	H5C4	HP5
Initial permeability		3300+40, -0%	7500±25%	10000±30%	15000±30%	12000±25% (25°C)	5000±20%
						≥ 9000 (-20°C)	
Relative loss factor	$\tan\delta/\mu_i$	$\times 10^{-6}$	<2.5(10kHz) <10(100kHz)	<6.5(10kHz)	<7(10kHz)	<7(10kHz)	<8(10kHz)
Temperature factor of initial permeability	$\alpha\mu_i r$	$\times 10^{-6}$					
	-30 to +20°C		-0.5 to 2	-0 to 1.8	-0.5 to 1.5	-0.5 to 1.5	-4 to 1.5
	0 to +20°C						±12.5%
	+20 to +70°C		-0.5 to 2	-0 to 1.8	-0.5 to 1.5	-0.5 to 1.5	-0.5 to 3
							±12.5%
Curie temperature	T _c	°C	>130	>130	>120	>105	>110
Saturation magnetic flux density*	B _s	mT	410	420	400	360	380
H=1194A/m							400
Remanent flux density*	B _r	mT	100	40	90	100	100
Coercive force*	H _c	A/m	8	5.6	7.2	4.4	4.4
Hysteresis loss factor [1.5 to 3mT]	ηB	$\frac{10^{-6}}{mT}$	<0.8	<1	<1.4	<0.5	<1
Disaccommodation factor [1 to 10min]	D _f	$\times 10^{-6}$	<3	<3	<2	<2	<3
Electrical resistivity*	ρ_v	Ω·m	1	0.1	0.15	0.15	0.15
Density*	d _b	kg/m ³	4.8×10 ³	4.9×10 ³	4.9×10 ³	4.9×10 ³	4.8×10 ³

* Average value

• The values were obtained with toroidal cores at room temperature unless otherwise shown.

FOR TRANSFORMER AND CHOKE

Material			PC40	PC44	PC50
Initial permeability	μ_i		2300±25%	2400±25%	1400±25%
Amplitude permeability	μ_a		3000min.	3000min.	
Core loss [B=200mT]	P _{cv}	kW/m ³	25kHz sine wave	25°C 60°C 100°C 120°C	120 80 70 85
			100kHz sine wave	25°C 60°C 100°C 120°C	600 450 410 500
					600 400 300 380
Saturation magnetic flux density* ¹ [H=1194A/m]	B _s	mT		25°C 60°C 100°C 120°C	510 450 390 350
					510 450 390 350
Remanent flux density* ¹	B _r	mT		25°C 60°C 100°C 120°C	95 65 55 50
					110 70 60 55
Coercive force* ¹	H _c	A/m		25°C 60°C 100°C 120°C	14.3 10.3 8.8 8
					13 9 6.5 6
Curie temperature* ¹	T _c	°C			>215
Electrical resistivity* ¹	ρ_v	Ω·m			6.5
Density* ¹	d _b	kg/m ³			4.8×10 ³
					4.8×10 ³
					4.8×10 ³

*¹ Average value

*² 500kHz, 50mT

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FOR EMC PREVENTION COMMON-MODE CHOKE

Material		HS52	HS72	HS10
Initial permeability	μ_i	$5500 \pm 25\%$	$7500 \pm 25\%$ (2000min. at 500kHz)	$10000 \pm 25\%$
Relative loss factor	$\tan\delta/\mu_i \times 10^{-6}$	10 (100kHz)	30 (100kHz)	30 (100kHz)
Saturation magnetic flux density* [H=1194A/m]	B_s	mT	410	410
Remanent flux density*	B_r	mT	70	80
Coercive force*	H_c	A/m	6	6
Curie temperature*	T_c	°C	>130	>130
Electrical resistivity*	ρ_v	$\Omega \cdot m$	1	0.2
Density*	d_b	kg/m^3	4.9×10^3	4.9×10^3

* Average value

• The values were obtained with toroidal cores at room temperature unless otherwise shown.