Ferrite Cores

Ferrite Material Characteristics

Material Characteristics Table

MATERIAL CHARACTERISTICS

Material			H5A	H5B2	H5C2	H5C3	H5C4	HP5
Initial permeability	μi		3300+40, –0%	7500±25%	10000±30%	15000±30%	12000±25%(25°C) ≧ 9000(–20°C)	5000±20%
Relative loss factor	tanδ/μi	×10^{-6}	<2.5(10kHz) <10(100kHz)	<6.5(10kHz)	<7(10kHz)	<7(10kHz)	<8(10kHz)	<3.5(10kHz)
Temperature factor of initial permeability	αμir	×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	>140
Saturation magnetic flux density* H=1194A/m	B_s	mT	410	420	400	360	380	400
Remanent flux density*	B_r	mT	100	40	90	100	100	65
Coercive force*	H_c	A/m	8	5.6	7.2	4.4	4.4	7.2
Hysteresis loss factor [1.5 to 3mT]	ηB	$\frac{10^{-6}}{mT}$	<0.8	<1	<1.4	<0.5	<1	<0.4
Disaccommodation factor [1 to 10min]	D_F	×10^{-6}	<3	<3	<2	<2	<3	<3
Electrical resistivity*	ρv	Ω-m	1	0.1	0.15	0.15	0.15	0.15
Density*	d_b	kg/m^3	4.8×10^3	4.9×10^3	4.9×10^3	4.95×10^3	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	μi				2300±25%	2400±25%	1400±25%
Amplitude permeability	μa				3000min.	3000min.	
Core loss [B=200mT]	P_{cv}	kW/m^3	25kHz sine wave	25°C	120		
				60°C	80		
				100°C	70		
				120°C	85		
			100kHz sine wave	25°C	600	600	130*2
				60°C	450	400	80*2
				100°C	410	300	80*2
				120°C	500	380	
Saturation magnetic flux density*1 [H=1194A/m]	B_s	mT		25°C	510	510	470
				60°C	450	450	440
				100°C	390	390	380
				120°C	350	350	
Remanent flux density*1	B_r	mT		25°C	95	110	140
				60°C	65	70	110
				100°C	55	60	98
				120°C	50	55	
Coercive force*1	H_c	A/m		25°C	14.3	13	36.5
				60°C	10.3	9	31
				100°C	8.8	6.5	27.2
				120°C	8	6	
Curie temperature*1	T_c	°C			>215	>215	>240
Electrical resistivity*1	ρv	Ω-m			6.5	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

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

Ferrite Cores

Ferrite Material Characteristics

Material Characteristics Table

FOR EMC PREVENTION COMMON-MODE CHOKE

Material			HS52	HS72	HS10
Initial permeability	μi		5500±25%	7500±25% (2000min. at 500kHz)	10000±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	380
Remanent flux density*	B_r	mT	70	80	120
Coercive force*	H_c	A/m	6	6	5
Curie temperature*	T_c	°C	>130	>130	>120
Electrical resistivity*	ρ_v	Ω-m	1	0.2	0.2
Density*	d_b	kg/m^3	4.9×10^3	4.9×10^3	4.9×10^3

* Average value

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