

Mn-Zn Ferrite

Material characteristics

Ferrite for switching power supplies
Ferrite for high-frequency power supplies
Large size ferrite for high power
Ferrite for telecommunication



⚠ REMINDERS FOR USING THESE PRODUCTS

Please be sure to read this manual thoroughly before using the products.

The products listed on this catalog are intended for use in general electronic equipment (AV equipment, telecommunications equipment, home appliances, amusement equipment, computer equipment, personal equipment, office equipment, measurement equipment, industrial robots) under a normal operation and use condition.

The products are not designed or warranted to meet the requirements of the applications listed below, whose performance and/or quality require a more stringent level of safety or reliability, or whose failure, malfunction or trouble could cause serious damage to society, person or property.

Please understand that we are not responsible for any damage or liability caused by use of the products in any of the applications below or for any other use exceeding the range or conditions set forth in this specification sheet.

If you intend to use the products in the applications listed below or if you have special requirements exceeding the range or conditions set forth in the each catalog, please contact us.

- (1) Aerospace/aviation equipment
- (2) Transportation equipment (cars, electric trains, ships, etc.)
- (3) Medical equipment
- (4) Power-generation control equipment
- (5) Atomic energy-related equipment
- (6) Seabed equipment
- (7) Transportation control equipment
- (8) Public information-processing equipment

- (9) Military equipment
- (10) Electric heating apparatus, burning equipment
- (11) Disaster prevention/crime prevention equipment
- (12) Safety equipment
- (13) Other applications that are not considered general-purpose applications

When using these products in general purposes and standard use, it is recommended that protection circuits are used, devices are secured, and backup circuits are kept for increased safety.



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Mn-Zn Material list of ferrite for switching power supplies

MATERIAL CHARACTERISTICS

Material	Initial permeability	dens		olume			ation lensity	magne /*	etic	Rema	anent i	flux		Coer	cive fo	rce*		Curie temperature	Density*	Electrical resistivity*
	μi	Рсv	ĺ			Bs				Br				Нс				Tc	db	ρ ν
		B=20 100kl	3=200mT 100kHz sine wave		(mT) H=11	94A/m			(mT) H=11	94 A /m			(A/m) H=11	94A/m			(°C)	(kg/m ³) ×10 ³	(Ω • m)	
		25°C	60°C	100°C	120°C	25°C	60°C	100°C	120°C	25°C	60°C	100°C	120°C	25°C	60°C	100°C	120°C			
PC47	2500±25%	600	400	250	360	530	480	420	390	180	100	60	60	13	9	6	7	>230	4.9	4
PC90	2200±25%	680	470	320	460	540	500	450	420	170	95	60	65	13	9	6.5	7	>250	4.9	4
PC95	3300±25%	350		290	350	530	480	410	380	85	70	60	55	9.5	7.5	6.5	6	>215	4.9	6

^{*} Typ.

Material	Initial permeability μi	Relative loss factor* tanδ/μi	Saturation magnetic flux density*	Remanent flux density*	Coercive force*	Curie temperature Tc	Density*	Electrical resistivity* ρν
		×10 ⁻⁶	(mT) H=1194A/m 25°C	(mT) H=1194A/m 25°C	(A/m) H=1194A/m 25°C	(°C)	(kg/m ³) ×10 ³	(Ω • m)
HS72	7500±25% (2000min. at 500kHz)	30(100kHz)	430	55	4	>130	4.9	0.2
HS10	10000±25%	30(100kHz)	400	70	3	>120	4.9	0.2

^{*} Typ.

Background yellow: The products which are not recommended to a new design.



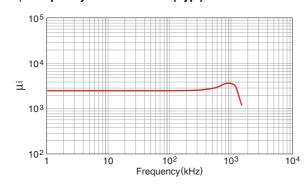
Mn-Zn Ferrite for switching power supplies Material list of PC47

MATERIAL CHARACTERISTICS

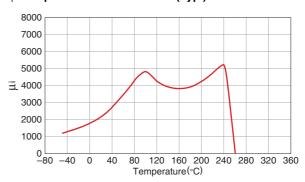
Initial permeability μi	Core I (Core Pcv		lume de	ensity		ation m ensity*	agnetio	;	Rema densi Br	nent flu ty*	IX		Coerc	ive for	ce*		Curie temperature Tc	Density*	Electrical resistivity* ρν
	(kW/m B=200 100kH sine w)mT Iz			(mT) H=119	94A/m			(mT) H=119	94A/m			(A/m) H=119	94A/m			(°C)	(kg/m ³) ×10 ³	(Ω • m)
	25°C	60°C	100°C	120°C	25°C	60°C	100°C	120°C	25°C	60°C	100°C	120°C	25°C	60°C	100°C	120°C			
2500±25%	600	400	250	360	530	480	420	390	180	100	60	60	13	9	6	7	>230	4.9	4

^{*} Typ.

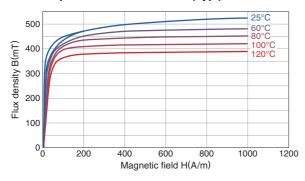
□ μi frequency characteristics (Typ.)



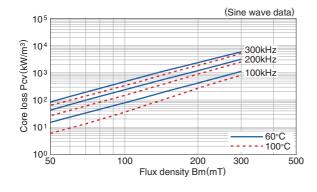
□ µi temperature characteristics (Typ.)

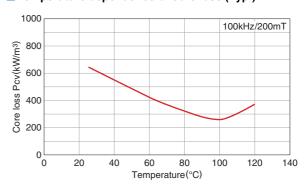


☐ B-H temperature characteristics (Typ.)



☐ Core loss (Typ.)





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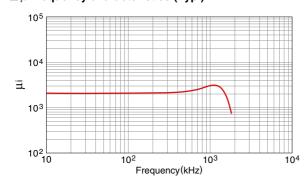
Mn-Zn Ferrite for switching power supplies Material list of PC90

MATERIAL CHARACTERISTICS

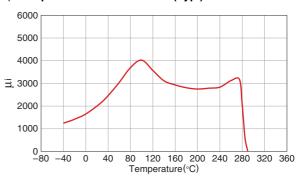
Initial permeability μi	Core I (Core Pcv		lume de	ensity		ation m ensity*	agnetio	;	Rema densi Br	nent flu ty*	IX		Coerc	ive for	ce*		Curie temperature Tc	Density*	Electrical resistivity* ρν
	(kW/m B=200 100kH sine w	mT Iz			(mT) H=119	94A/m			(mT) H=119	94A/m			(A/m) H=119	94A/m			(°C)	(kg/m ³) ×10 ³	(Ω • m)
	25°C	60°C	100°C	120°C	25°C	60°C	100°C	120°C	25°C	60°C	100°C	120°C	25°C	60°C	100°C	120°C			
2200±25%	680	470	320	460	540	500	450	420	170	95	60	65	13	9	6.5	7	>250	4.9	4

^{*} Typ.

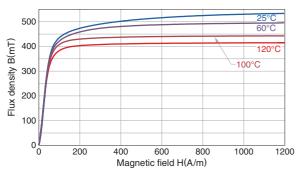
□ μi frequency characteristics (Typ.)



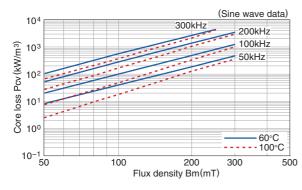
□ µi temperature characteristics (Typ.)

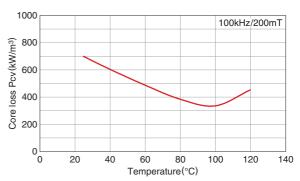


\square B-H temperature characteristics (Typ.)



☐ Core loss (Typ.)





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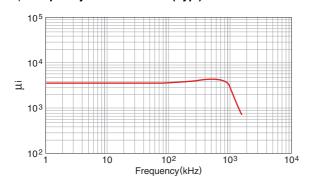
Mn-Zn Ferrite for switching power supplies Material list of PC95

MATERIAL CHARACTERISTICS

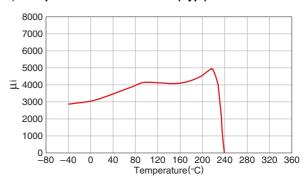
Initial permeability μi		loss vol loss)*	ume de	ensity		ation m ensity*	agnetic	:	Rema densi Br	nent flu ty*	ΙΧ		Coerc	ive for	ce*		Curie temperature Tc	Density*	Electrical resistivity* ρν	
	(kW/m B=200 100kH sine w)mT Iz			(mT) H=119	94A/m			(mT) H=119	94A/m			(A/m) H=119	94A/m			(°C)	(kg/m³) ×10³	(Ω • m)	
	25°C	60°C	100°C	120°C	25°C	60°C	100°C	120°C	25°C	60°C	100°C	120°C	25°C	60°C	100°C	120°C				
3300±25%	350		290	350	530	480	410	380	85	70	60	55	9.5	7.5	6.5	6	>215	4.9	6	

^{*} Typ.

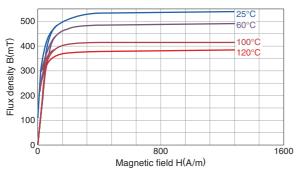
□ μi frequency characteristics (Typ.)



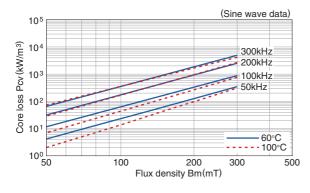
□ µi temperature characteristics (Typ.)

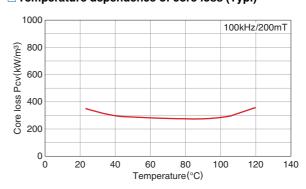


\square B-H temperature characteristics (Typ.)



☐ Core loss (Typ.)





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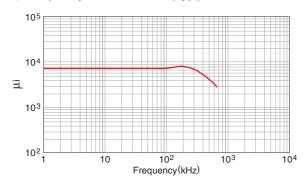
Mn-Zn Ferrite for switching power supplies Material list of HS72

MATERIAL CHARACTERISTICS

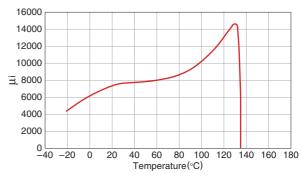
Initial permeability μi	Relative loss factor*	Saturation magnetic flux density* Bs	Remanent flux density*	Coercive force*	Curie temperature	Density*	Electrical resistivity*
	×10 ⁻⁶	(mT) H=1194A/m 25°C	(mT) H=1194A/m 25°C	(A/m) H=1194A/m 25°C	(°C)	(kg/m³) ×10³	(Ω • m)
7500±25% (2000min. at 500kHz)	30(100kHz)	430	55	4	>130	4.9	0.2

^{*} Typ.

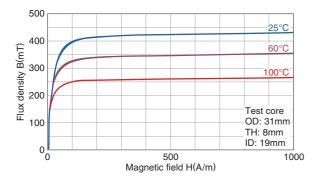
□ μi frequency characteristics (Typ.)

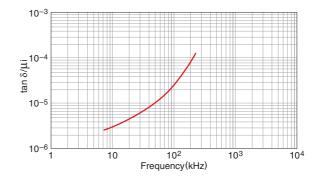


□ µi temperature characteristics (Typ.)



☐ B-H temperature characteristics (Typ.)









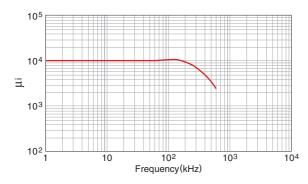
Mn-Zn Ferrite for switching power supplies Material list of HS10

MATERIAL CHARACTERISTICS

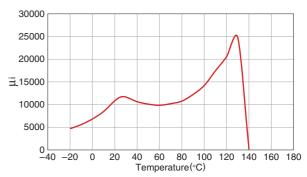
Initial permeability	Relative loss factor*	Saturation magnetic flux density*	Remanent flux density*	Coercive force*	Curie temperature	Density*	Electrical resistivity*
μί	tanδ/μi	Bs	Br	Hc	Tc	db	ρ ν
	×10 ⁻⁶	(mT) H=1194A/m 25°C	(mT) H=1194A/m 25°C	(A/m) H=1194A/m 25°C	(°C)	(kg/m ³) ×10 ³	(Ω • m)
10000±25%	30(100kHz)	400	70	3	>120	4.9	0.2

^{*} Typ.

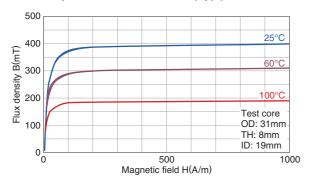
□ μi frequency characteristics (Typ.)

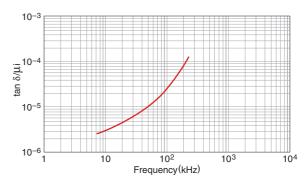


□ µi temperature characteristics (Typ.)



☐ B-H temperature characteristics (Typ.)







Mn-Zn Material list of ferrite for high-frequency power supplies

MATERIAL CHARACTERISTICS

Material	Initial permeability	(Core	oss vo loss)*	lume d	ensity			Saturation magnetic density*		Remane density*		Coerciv force*	re	Curie temperature	Density*	Electrical resistivity*
	μi	Pcv						Bs		Br		Нс		Тс	db	
		(kW/m sine w	,					(mT) H=1194A	√m	(mT) H=1194 <i>A</i>	√ m	(A/m) H=1194	A/m	(°C)	(kg/m ³) ×10 ³	(Ω • m)
		500kH B=50r		1MHz B=50n	nT	2MHz B=30n										
		25°C	100°C	25°C	100°C	25°C	100°C	25°C	100°C	25°C	100°C	25°C	100°C			
PC50	1400±25%	130	80					470	380	140	98	37	27	>240	4.8	30
PC200	800±25%			145	180	160	200	485	410	141	144	51	48	>280	4.9	22

^{*} Typ.



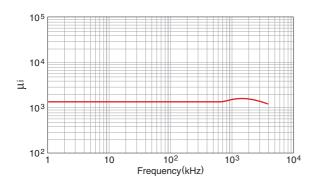
Mn-Zn Ferrite for high-frequency power supplies Material list of PC50

MATERIAL CHARACTERISTICS

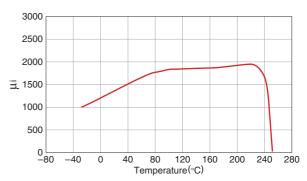
Initial permeability µi	Core loss vol (Core loss)* Pcv	ume density	Saturation flux density		Remanent f density* Br	lux	Coercive fo	rce*	Curie temperature Tc	Density*	Electrical resistivity*
	(kW/m³) sine wave	`. '			(mT) H=1194A/m		(A/m) H=1194A/m		(°C)	(kg/m ³) ×10 ³	(Ω • m)
	500kHz B=50mT	500kHz									
	25°C	100°C	25°C	100°C	25°C	100°C	25°C	100°C			
1400±25%	130	80	470	380	140	98	37	27	>240	4.8	30

^{*} Typ.

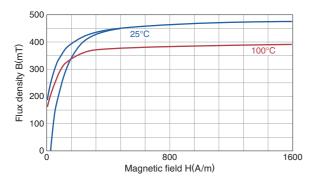
□ μi frequency characteristics (Typ.)



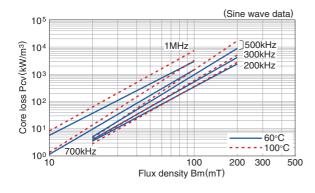
$\square \mu$ i temperature characteristics (Typ.)

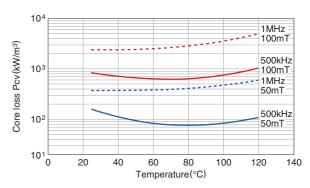


☐ B-H temperature characteristics (Typ.)



☐ Core loss (Typ.)





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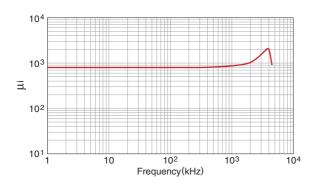
Mn-Zn Ferrite for high-frequency power supplies Material list of PC200

MATERIAL CHARACTERISTICS

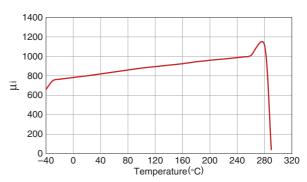
Initial permeability µi		Core loss volume density Core loss)* Pov			Saturation flux densir	magnetic ty*	Remanen flux dens Br		Coercive Hc	force*	Curie temperature Tc	Density*	Electrical resistivity*
	(kW/m³) sine wave				(mT) H=1194A/r	n	(mT) H=1194A	m'	(A/m) H=1194A	/m	(°C)	(kg/m ³) ×10 ³	(Ω • m)
	1MHz B=50mT		2MHz B=30mT										
	25°C	100°C	25°C	100°C	25°C	100°C	25°C	100°C	25°C	100°C			
800±25%	145	180	160	200	485	410	141	144	51	48	>280	4.9	22

^{*} Typ.

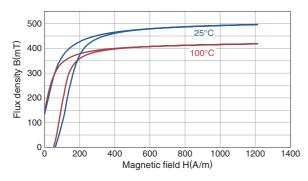
□ μi frequency characteristics (Typ.)



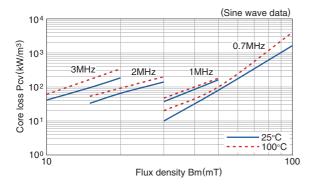
□ µi temperature characteristics (Typ.)

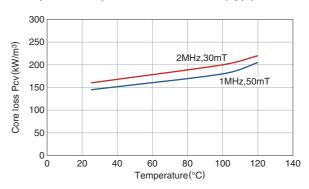


☐ B-H temperature characteristics (Typ.)



☐ Core loss (Typ.)





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Mn-Zn Ferrite for high-frequency power supplies Material list of PC200

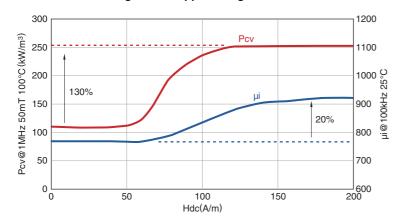
■ PRECAUTIONS FOR USE OF PC200 MATERIALS

The characteristics of the PC200 material change as follows depending on the application of a DC magnetic field such as a magnet or the magnitude of the applied magnetic field (Hdc) at the time of use.

The characteristics of the PC200 material are changed as follows in the reliability test.

PC200 material recommends use by a little low magnetic field of a special quality change.

☐ Characteristic change due to applied magnetic field *



Characteristic change due to applied magnetic field	Change rate (Typ.)
Pcv at 1MHz, 50mT, 100°C	+130%
μi at 100kHz, 25°C	+20%

☐ Reliability test results *

Characteristics change by thermal shock test	Change rate (Typ.)
Pcv at 1MHz, 50mT, 100°C	-18%
μi at 100kHz, 25°C	-7%

Test conditions: –40 \sim 125°C. 1000 cycles. Exposure time = 30 minutes

Characteristic changes due to high temperature storage tests	Change rate (Typ.)
Pcv at 1MHz, 50mT, 100°C	-32%
μi at 100kHz, 25°C	-14%

Test conditions: 125±2°C. Retention time = 2000 hours

Characteristic changes due to low temperature storage tests	Change rate (Typ.)
Pcv at 1MHz, 50mT, 100°C	±5% max.
μi at 100kHz, 25°C	±5% max.

Test conditions: -40±3°C. Retention time = 2000 hours

Characteristics change by humidity endurance tests	Change rate (Typ.)
Pcv at 1MHz, 50mT, 100°C	±5% max.
μi at 100kHz, 25°C	±5% max.

Test conditions: 60±2°C, 90-95%R.H.(II) Retention time = 2000 hours

^{*}Evaluated by toroidal shape Pcv: Core loss µi: Initial permeability



Mn-Zn Material list of large size ferrite for high power

MATERIAL CHARACTERISTICS

Material	permeability* μ i	temperature Tc (°C)	Saturat magnet density Bs (mT) H=1194	ic flux *	flux density* Br	Coercive force* Hc (A/m)	orce* Hc			resistivity*		expansion coefficient*	conductivity* κ (W/mK)	Specific heat* Cp (J/kg • K)	(N/m²)	modulus* E (N/m²)	Magneto striction* λs ×10 ⁻⁶
				II			25kHz	II	100kHz								
	23°C		23°C	100°C	23°C	23°C	90°C	100°C	100°C								
PE22	1800	>200	510	410	140	16	79	80	520	3.0	4.8	12	5	800	9	1.2	-0.6
PC40	2300	>200	500	380	125	15	64	70	420	6.5	4.8	12	5	800	9	1.2	-0.6

^{*} Typ.



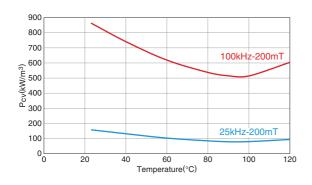
Mn-Zn Large size ferrite for high power Material list of PE22

MATERIAL CHARACTERISTICS

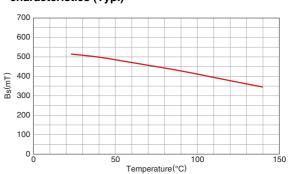
Initial permeability*	temperature	Saturat magne density	tic flux		Coercive force*	Core lo	oss*		Electrical resistivity*			conductivity*	Specific heat*	Bending strength*	Young's modulus*	Magneto striction*
μ i	(°C)	Bs (mT) H=119	4 A /m	Br (mT)	Hc (A/m)	Pcv (kW/mi B=200i	,		ρ (Ω • m)	dapp (kg/m³) ×10³	α (1/K) ×10 ⁻⁶		Cp (J/kg • K)	δ b3 (N/m²) ×10 ⁷	E (N/m²) ×10 ¹¹	λ s ×10 ⁻⁶
						25kHz	n	100kHz								
23°C		23°C	100°C	23°C	23°C	90°C	100°C	100°C								
1800	>200	510	410	140	16	79	80	520	3.0	4.8	12	5	800	9	1.2	-0.6

^{*} Typ.

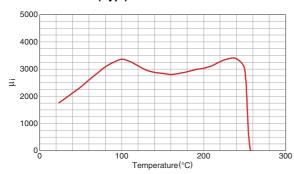
☐ Core loss vs. temperature characteristics (Typ.)



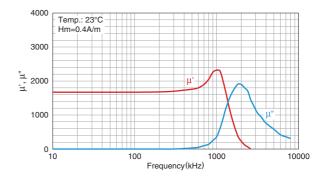
☐ Saturation magnetic flux density vs. temperature characteristics (Typ.)



☐ Initial magnetic permeability vs. temperature characteristics (Typ.)



☐ Magnetic permeability vs. frequency characteristics (Typ.)

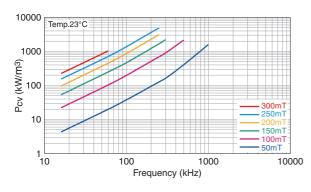


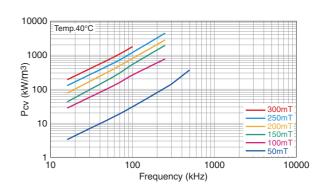
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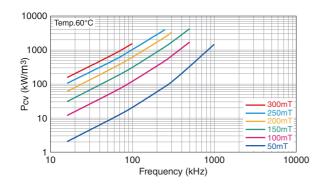


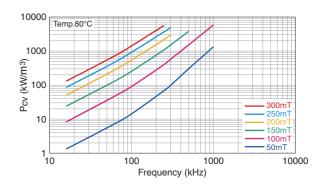
Mn-Zn Large size ferrite for high power Material list of PE22

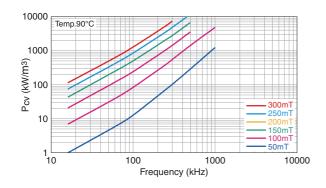
☐ Core loss vs. frequency characteristics

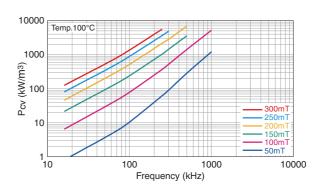


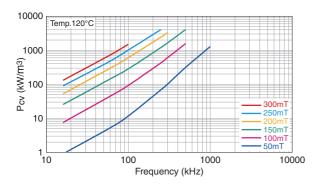














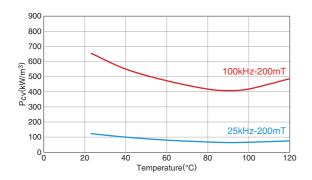
Mn-Zn Large size ferrite for high power Material list of PC40

MATERIAL CHARACTERISTICS

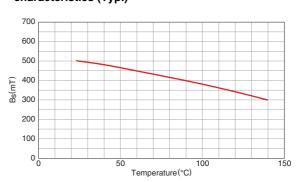
Initial permeability*	temperature	Saturat magne density	tic flux		Coercive force*	Core lo	oss*		Electrical resistivity*	Approximate density*		conductivity*	Specific heat*	Bending strength*	Young's modulus*	Magneto striction*
μ i	(°C)	Bs (mT) H=119	4A/m	Br (mT)	Hc (A/m)	Pcv (kW/mi B=200i			ρ (Ω • m)	dapp (kg/m³) ×10³	α (1/K) ×10 ⁻⁶		Cp (J/kg • K)	δ b3 (N/m²) ×10 ⁷	E (N/m²) ×10 ¹¹	λ s ×10 ⁻⁶
23°C		23°C	100°C	23°C	23°C	25kHz 90°C		100kHz 100°C								
2300	>200	500	380	125	15	64	70	420	6.5	4.8	12	5	800	9	1.2	-0.6

^{*} Typ.

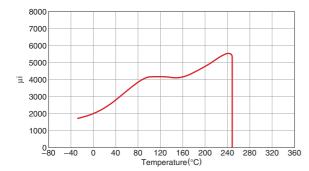
☐ Core loss vs. temperature characteristics (Typ.)



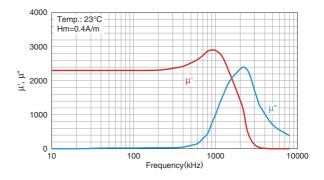
☐ Saturation magnetic flux density vs. temperature characteristics (Typ.)



☐ Initial magnetic permeability vs. temperature characteristics (Typ.)



☐ Magnetic permeability vs. frequency characteristics (Typ.)

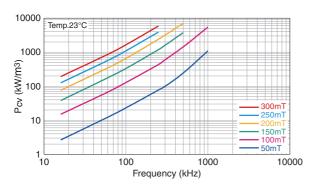


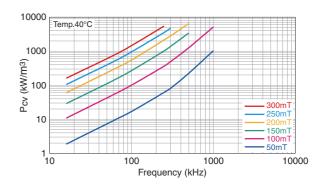
Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use. Please note that the contents may change without any prior notice due to reasons such as upgrading.

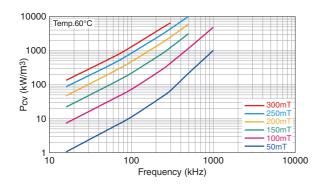


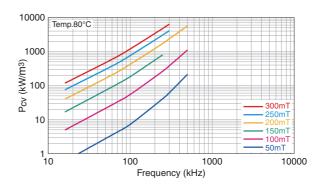
Mn-Zn Large size ferrite for high power Material list of PC40

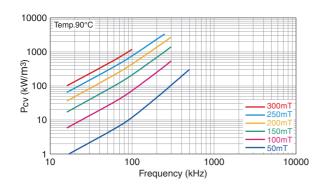
☐ Core loss vs. frequency characteristics

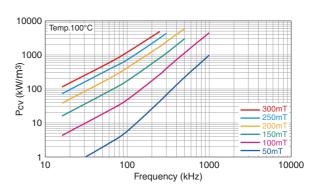


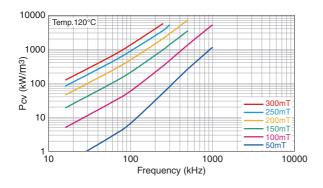












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Mn-Zn Material list of ferrite core for telecommunication

MATERIAL CHARACTERISTICS

Material	Initial permeability μi	Relative loss factor tan\delta/µi ×10-6	Temperature factor of initial permeability $\alpha\mu$ ir $\times 10^{-6}$ -30 to $+20^{\circ}$ C 0 to 20° C 20 to 70° C	Saturation magnetic flux density* Bs (mT) H=1194A/m 25°C	Residual flux density* Br (mT) 25°C	Coercive force* Hc (A/m) 25°C	Curie temperature Tc (°C)	Hysteresis material constant ηB $\frac{10^{-6}}{mT}$	Disaccomm odation factor DF ×10 ⁻⁶	Density* db (kg/m³) ×10³	Electrical resistivity* $\rho \mathbf{v} \\ (\Omega \bullet \mathbf{m})$
Н5А	3300 +40%	<2.5(10kHz) <10(100kHz)	-0.5 to 2.0 -0.5 to 2.0	410	100	8.0	>130	<0.8	<3	4.8	1
H5B2	7500±25%	<6.5(10kHz)	0 to 1.8 — 0 to 1.8	420	40	5.6	>130	<1.0	<3	4.9	0.1
H5C2	10000±30%	<7.0(10kHz)	-0.5 to 1.5 -0.5 to 1.5	400	90	7.2	>120	<1.4	<2	4.9	0.15
H5C3	15000±30%	<7.0(10kHz)	-0.5 to 1.5 -0.5 to 1.5	360	105	4.4	>105	<0.5	<2	4.95	0.15
HP5	5000±20%	<3.5	±12.5% ±12.5%	400	65	7.2	>140	<0.4	<3	4.8	0.15

^{*} Typ.





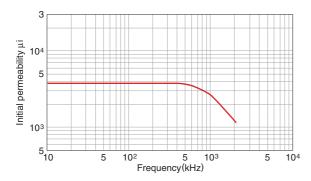
Mn-Zn Ferrite for telecommunication Material list of H5A

MATERIAL CHARACTERISTICS

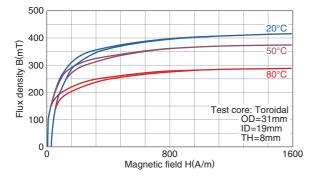
Initial permeability	Relative loss factor	Temperature factor of initial permeability	Saturation magnetic flux density*	Residual flux density*	Coercive force*	Curie temperature	Hysteresis material constant	Disaccommo dation factor	Density*	Electrical resistivity*
μί	tan δ/μ i ×10 ⁻⁶	αμ ir ×10 ⁻⁶ -30 to +20°C 0 to 20°C 20 to 70°C	Bs (mT) H=1194A/m 25°C	Br (mT) 25°C	Hc (A/m) 25°C	Tc (°C)	η Β <u>10-6</u> mT	DF ×10 ⁻⁶	$\begin{array}{l} \text{db} \\ \text{(kg/m}^3\text{)} \\ \times 10^3 \end{array}$	ρ v $(\Omega \bullet m)$
3300 +40%	<2.5(10kHz) <10(100kHz)	-0.5 to 2.0 -0.5 to 2.0	410	100	8.0	>130	<0.8	<3	4.8	1

^{*} Typ.

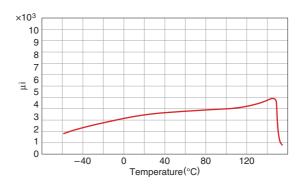
□ μi frequency characteristics (Typ.)

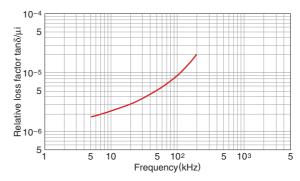


■ B-H temperature characteristics (Typ.)



□ µi temperature characteristics (Typ.)









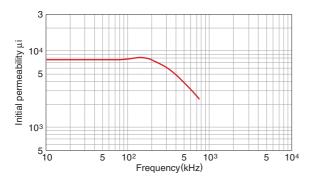
Mn-Zn Ferrite for telecommunication Material list of H5B2

MATERIAL CHARACTERISTICS

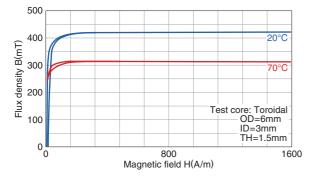
Initial permeability	Relative loss factor	Temperature factor of initial permeability	Saturation magnetic flux density*	Residual flux density*	Coercive force*	Curie temperature	Hysteresis material constant	Disaccommo dation factor	Density*	Electrical resistivity*
μί	tan δ/μ i ×10 ⁻⁶	αμ ir ×10 ⁻⁶ -30 to +20°C 0 to 20°C 20 to 70°C	Bs (mT) H=1194A/m 25°C	Br (mT) 25°C	Hc (A/m) 25°C	Tc (°C)	η Β 10-6 mT	DF ×10 ⁻⁶	$\begin{array}{l} \text{db} \\ \text{(kg/m}^3\text{)} \\ \times 10^3 \end{array}$	ρ v $(\Omega \bullet m)$
7500±25%	<6.5(10kHz)	0 to 1.8 — 0 to 1.8	420	40	5.6	>130	<1.0	<3	4.9	0.1

^{*} Typ.

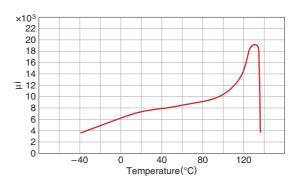
□ μi frequency characteristics (Typ.)

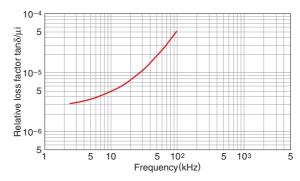


■ B-H temperature characteristics (Typ.)



□ µi temperature characteristics (Typ.)









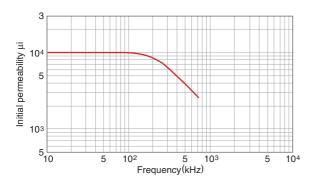
Mn-Zn Ferrite for telecommunication Material list of H5C2

MATERIAL CHARACTERISTICS

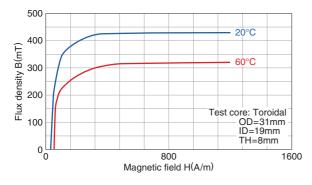
Initial permeability	Relative loss factor	Temperature factor of initial permeability	Saturation magnetic flux density*	Residual flux density*	Coercive force*	Curie temperature	Hysteresis material constant	Disaccommo dation factor	Density*	Electrical resistivity*
μί	tan δ/μ i ×10 ⁻⁶	αμ ir ×10 ⁻⁶ -30 to +20°C 0 to 20°C 20 to 70°C	Bs (mT) H=1194A/m 25°C	Br (mT) 25°C	Hc (A/m) 25°C	Tc (°C)	η Β 10-6 	DF ×10 ⁻⁶	$\begin{array}{l} \text{db} \\ \text{(kg/m}^3\text{)} \\ \times 10^3 \end{array}$	ρ ν (Ω•m)
10000±30%	<7.0(10kHz)	-0.5 to 1.5 -0.5 to 1.5	400	90	7.2	>120	<1.4	<2	4.9	0.15

^{*} Typ.

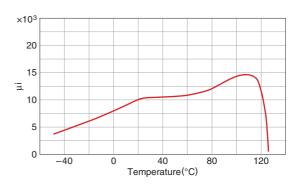
□ μi frequency characteristics (Typ.)

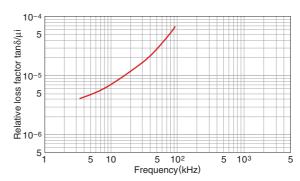


■ B-H temperature characteristics (Typ.)



□ µi temperature characteristics (Typ.)









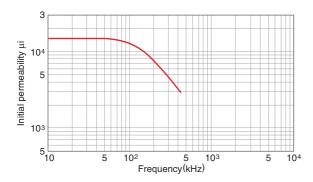
Mn-Zn Ferrite for telecommunication Material list of H5C3

MATERIAL CHARACTERISTICS

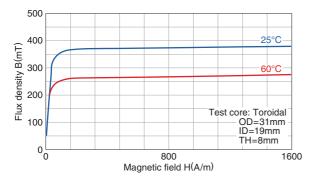
Initial permeability	Relative loss factor	Temperature factor of initial permeability	Saturation magnetic flux density*	Residual flux density*	Coercive force*	Curie temperature	Hysteresis material constant	Disaccommo dation factor	Density*	Electrical resistivity*
μί	tan δ/μ i ×10 ⁻⁶	αμ ir ×10 ⁻⁶	Bs (mT) H=1194A/m 25°C	Br (mT) 25°C	Hc (A/m) 25°C	Tc (°C)	η Β <u>10-6</u> mT	DF ×10 ⁻⁶	db (kg/m³) ×10³	ρ ν (Ω•m)
15000±30%	<7.0(10kHz)	-0.5 to 1.5 -0.5 to 1.5	360	105	4.4	>105	<0.5	<2	4.95	0.15

^{*} Typ.

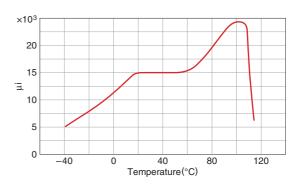
□ μi frequency characteristics (Typ.)

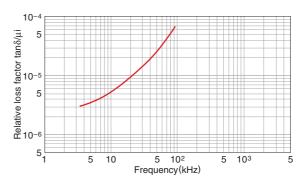


■ B-H temperature characteristics (Typ.)



□ µi temperature characteristics (Typ.)









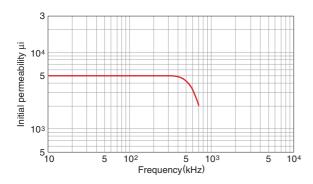
Mn-Zn Ferrite for telecommunication Material list of HP5

MATERIAL CHARACTERISTICS

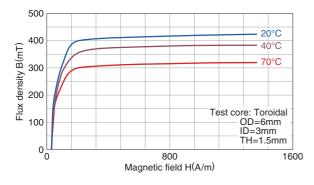
Initial permeability	Relative loss factor	Temperature factor of initial permeability	Saturation magnetic flux density*	Residual flux density*	Coercive force*	Curie temperature	Hysteresis material constant	Disaccommo dation factor	Density*	Electrical resistivity*
μί	tan δ/μ i ×10 ⁻⁶	αμ ir ×10 ⁻⁶ -30 to +20°C 0 to 20°C 20 to 70°C	Bs (mT) H=1194A/m 25°C	Br (mT) 25°C	Hc (A/m) 25°C	Tc (°C)	η Β 10-6 mT	DF ×10 ⁻⁶	db (kg/m³) ×10³	ρ v $(\Omega \bullet m)$
5000±20%	<3.5	 ±12.5% ±12.5%	400	65	7.2	>140	<0.4	<3	4.8	0.15

^{*} Тур.

□ μi frequency characteristics (Typ.)



■ B-H temperature characteristics (Typ.)



□ µi temperature characteristics (Typ.)

