TDK

December 2016

Mn-Zn Ferrite

Material Characteristics

Ferrite for Switching Power Supplies
Ferrite for Telecommunication
Large Size Ferrite for High Power

⚠ 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.
When using the products for specific purposes, please first make confirmations in areas such as safety, reliability, and quality.
Please understand that we are not in a position to be held responsible for any damage or the like caused by any use exceeding the range or conditions of this specification sheet or by any use in the specific applications.

(1) Aerospace/Aviation equipment
(2) Transportation equipment (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 this product in general-purpose standard applications, you are kindly requested to take into consideration securing protection circuit/equipment or providing backup circuits, etc to ensure higher safety.

Contents

Mn-Zn Material List of Ferrite for Switching Power Supplies

MATERIAL CHARACTERISTICS

Material	Initial permeability μi	Core loss volume density (Core loss)* Pcv (kW/m³) B=200mT 100kHz sine wave				Saturation magnetic flux density* Bs (mT) H=1194A/m				Remanent flux density* Br (mT) H=1194A/m				Coercive force* Hc (A/m) H=1194A/m				Curie temperature Tc (°C)	Density* db (kg/m³) ×10³	Electrical resistivity* ρv (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 ×10⁻⁶	Saturation magnetic flux density* Bs (mT) H=1194A/m 25°C	Remanent flux density* Br (mT) H=1194A/m 25°C	Coercive force* Hc (A/m) H=1194A/m 25°C	Curie temperature Tc (°C)	Density* db (kg/m³) ×10³	Electrical resistivity* ρv (Ω • m)
HS72	7500±25% (2000min. at 500kHz)	30(100kHz)	410	80	6	>130	4.9	0.2
HS10	10000±25%	30(100kHz)	380	120	5	>120	4.9	0.2
HS12	12000±25% (at 150kHz)	20(100kHz)	430	80	6	>130	4.9	0.5

* Typ.

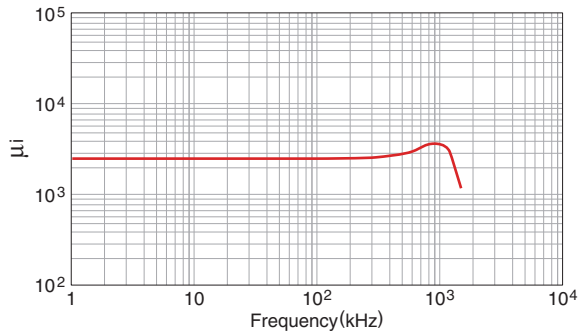
Mn-Zn Ferrite for Switching Power Supplies **Material List of PC47**

MATERIAL CHARACTERISTICS

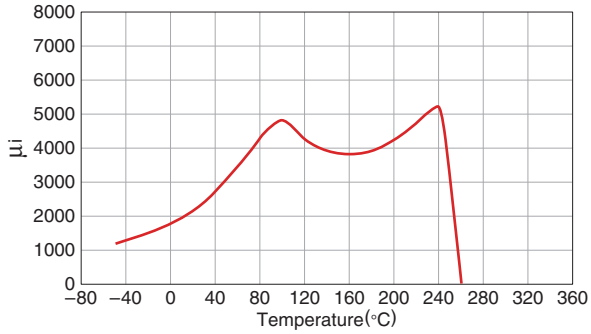
Initial permeability μi	Core loss volume density (Core loss)* Pcv (kW/m³) B=200mT 100kHz sine wave				Saturation magnetic flux density* Bs (mT) H=1194A/m				Remanent flux density* Br (mT) H=1194A/m				Coercive force* Hc (A/m) H=1194A/m				Curie temperature Tc (°C)	Density* db (kg/m³) ×10³	Electrical resistivity* ρv (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.

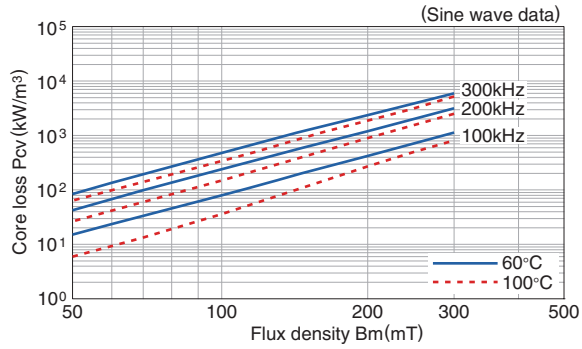
□μi frequency characteristics(Typ.)



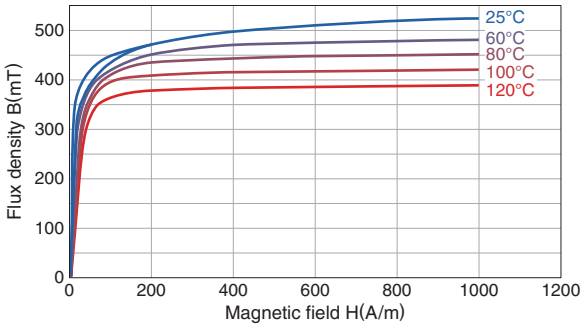
□μi temperature characteristics(Typ.)



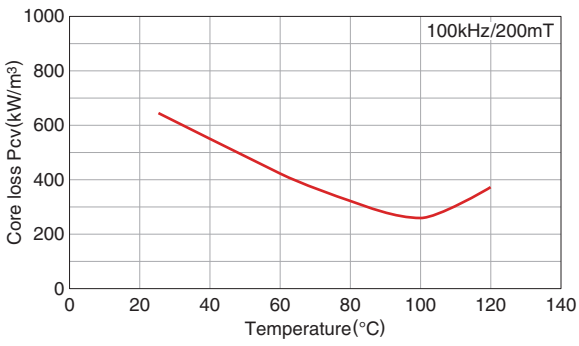
□Core Loss(Typ.)



□B-H temperature characteristics(Typ.)



□Temperature Dependence of Core Loss(Typ.)



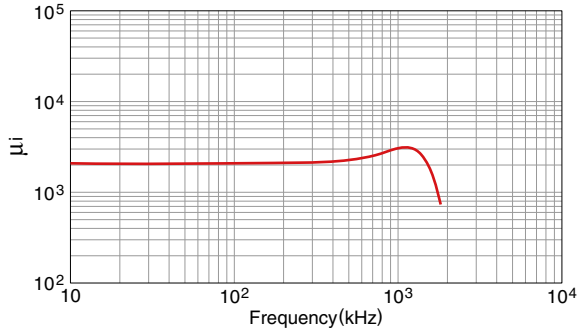
Mn-Zn Ferrite for Switching Power Supplies **Material List of PC90**

MATERIAL CHARACTERISTICS

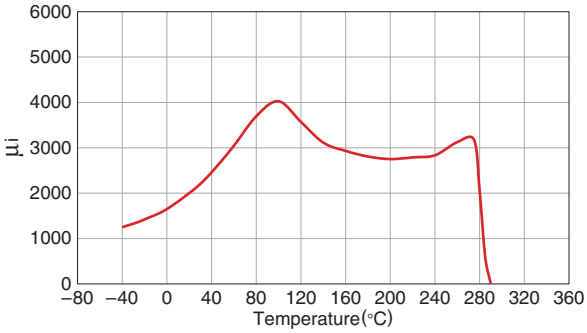
Initial permeability μi	Core loss volume density (Core loss)* Pcv (kW/m³) B=200mT 100kHz sine wave				Saturation magnetic flux density* Bs (mT) H=1194A/m				Remanent flux density* Br (mT) H=1194A/m				Coercive force* Hc (A/m) H=1194A/m				Curie temperature Tc (°C)	Density* db (kg/m³) ×10³	Electrical resistivity* ρv (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.

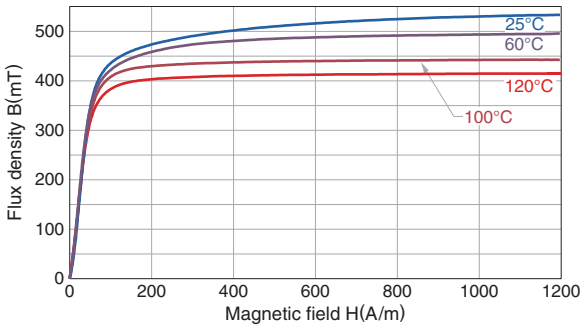
□μi frequency characteristics(Typ.)



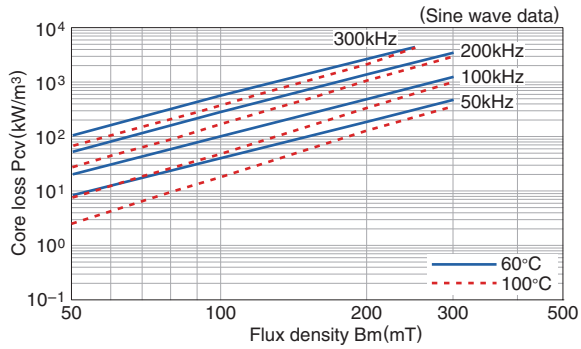
□μi temperature characteristics(Typ.)



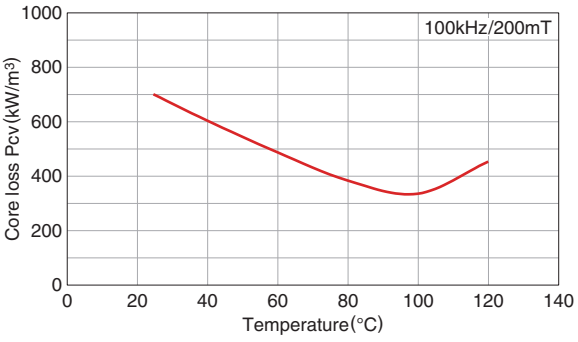
□B-H temperature characteristics(Typ.)



□**Core Loss(Typ.)**



□**Temperature Dependence of Core Loss(Typ.)**



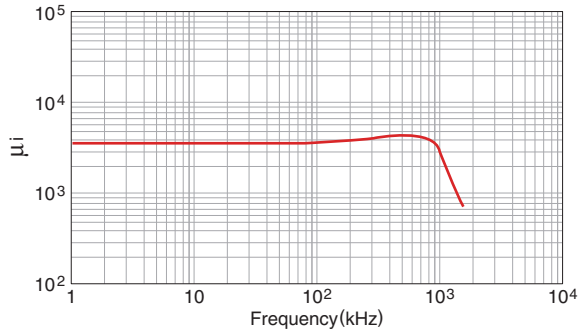
Mn-Zn Ferrite for Switching Power Supplies **Material List of PC95**

MATERIAL CHARACTERISTICS

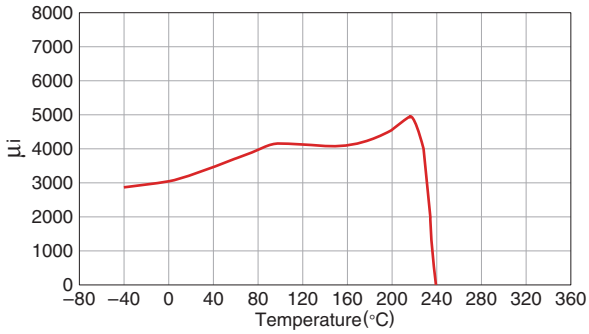
Initial permeability μi	Core loss volume density (Core loss)* Pcv (kW/m³) B=200mT 100kHz sine wave				Saturation magnetic flux density* Bs (mT) H=1194A/m				Remanent flux density* Br (mT) H=1194A/m				Coercive force* Hc (A/m) H=1194A/m				Curie temperature Tc (°C)	Density* db (kg/m³) ×10³	Electrical resistivity* ρv (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.

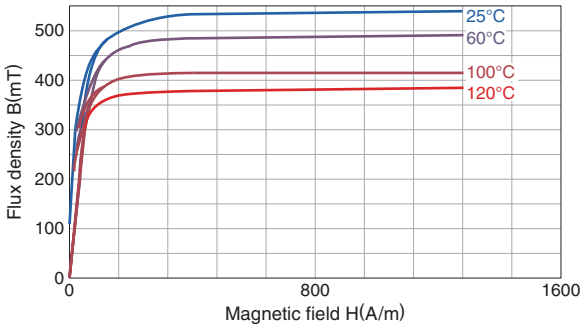
□μi frequency characteristics(Typ.)



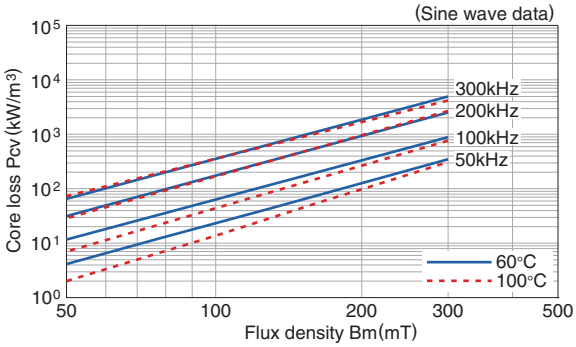
□μi temperature characteristics(Typ.)



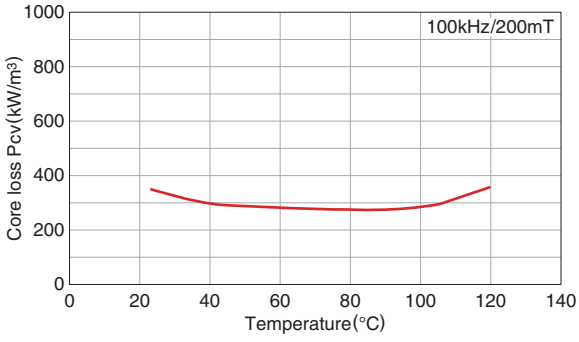
□B-H temperature characteristics(Typ.)



□Core Loss(Typ.)



□Temperature Dependence of Core Loss(Typ.)



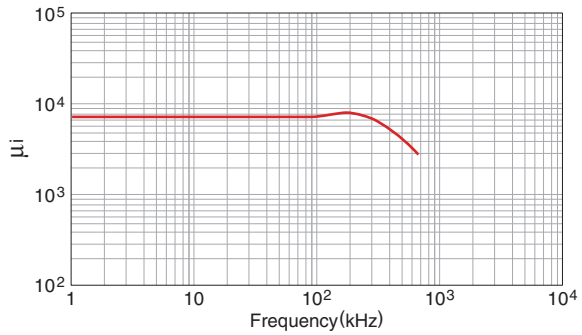
Mn-Zn Ferrite for Switching Power Supplies **Material List of HS72**

MATERIAL CHARACTERISTICS

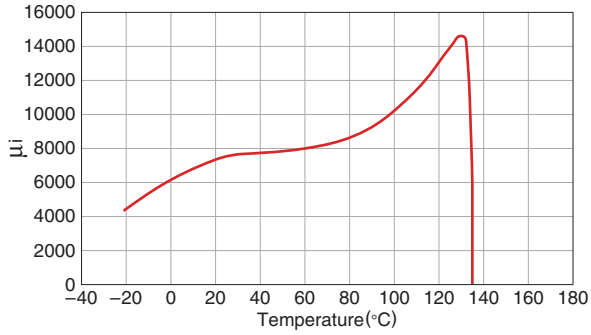
Initial permeability μi	Relative loss factor tanδ/μi ×10⁻⁶	Saturation magnetic flux density* Bs (mT) H=1194A/m 25°C	Remanent flux density* Br (mT) H=1194A/m 25°C	Coercive force* Hc (A/m) H=1194A/m 25°C	Curie temperature Tc (°C)	Density* db (kg/m³) ×10³	Electrical resistivity* ρv (Ω • m)
7500±25% (2000min. at 500kHz)	30(100kHz)	410	80	6	>130	4.9	0.2

* Typ.

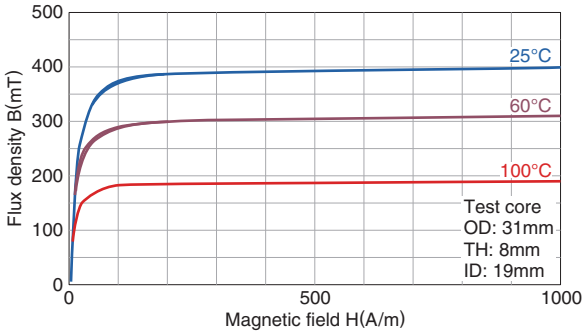
□μi frequency characteristics(Typ.)



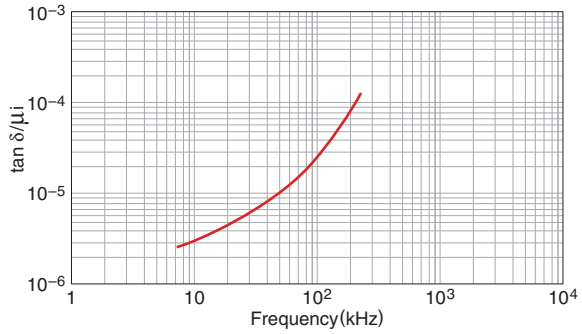
□μi temperature characteristics(Typ.)



□B-H temperature characteristics(Typ.)



□tanδ/ μi frequency characteristics(Typ.)



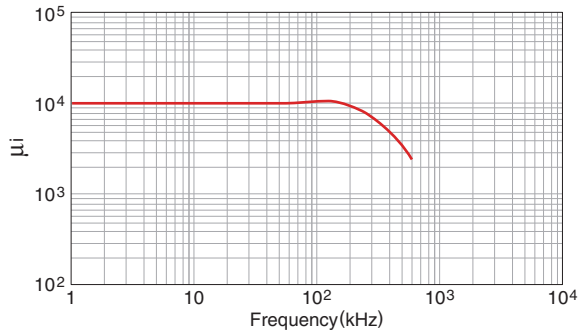
Mn-Zn Ferrite for Switching Power Supplies **Material List of HS10**

MATERIAL CHARACTERISTICS

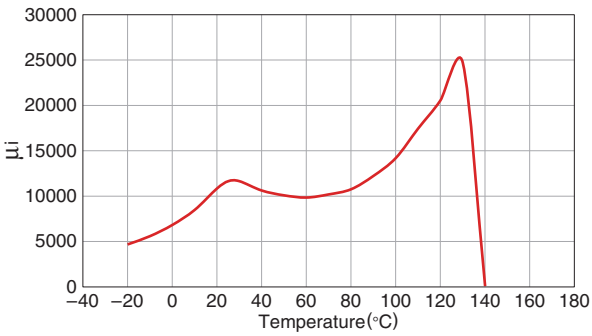
Initial permeability μi	Relative loss factor tanδ/μi ×10⁻⁶	Saturation magnetic flux density* Bs (mT) H=1194A/m 25°C	Remanent flux density* Br (mT) H=1194A/m 25°C	Coercive force* Hc (A/m) H=1194A/m 25°C	Curie temperature Tc (°C)	Density* db (kg/m³) ×10³	Electrical resistivity* ρv (Ω • m)
10000±25%	30(100kHz)	380	120	5	>120	4.9	0.2

* Typ.

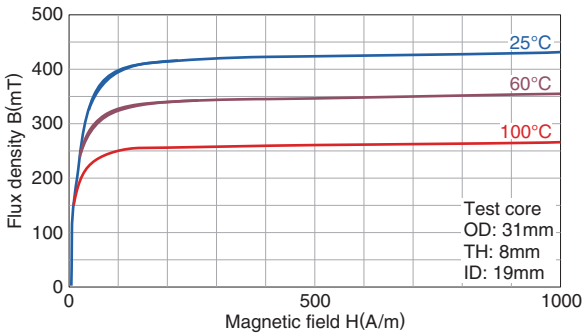
□μi frequency characteristics(Typ.)



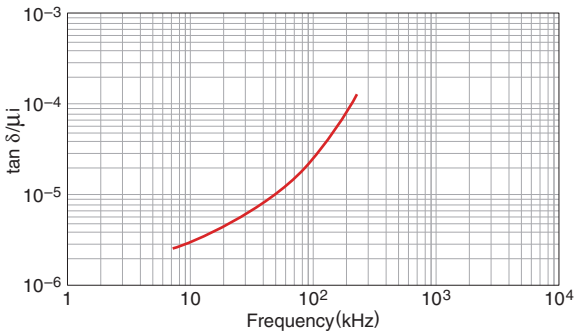
□μi temperature characteristics(Typ.)



□B-H temperature characteristics(Typ.)



□tanδ/ μi frequency characteristics(Typ.)



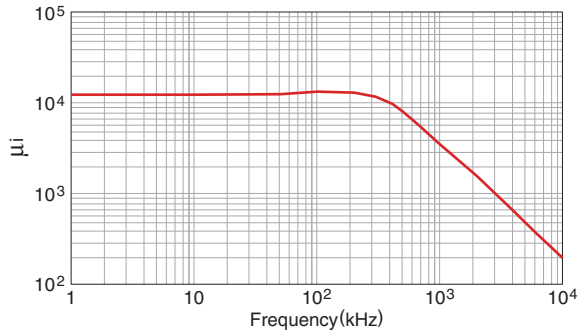
Mn-Zn Ferrite for Switching Power Supplies **Material List of HS12**

MATERIAL CHARACTERISTICS

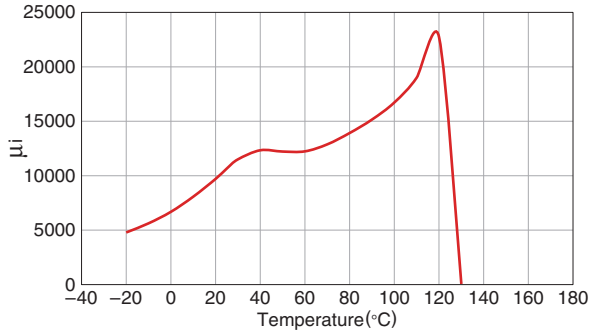
Initial permeability μi	Relative loss factor tanδ/μi ×10⁻⁶	Saturation magnetic flux density* Bs (mT) H=1194A/m 25°C	Remanent flux density* Br (mT) H=1194A/m 25°C	Coercive force* Hc (A/m) H=1194A/m 25°C	Curie temperature Tc (°C)	Density* db (kg/m³) ×10³	Electrical resistivity* ρv (Ω • m)
12000±25% (at 150kHz)	20(100kHz)	430	80	6	>130	4.9	0.5

* Typ.

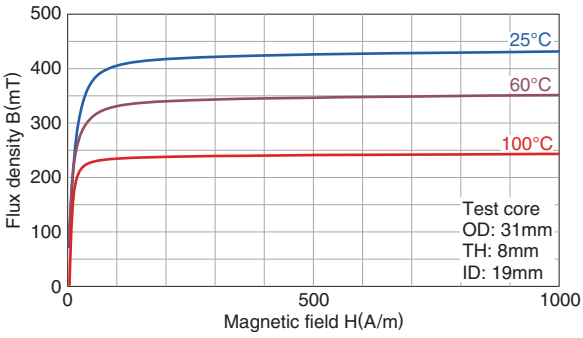
□μi frequency characteristics(Typ.)



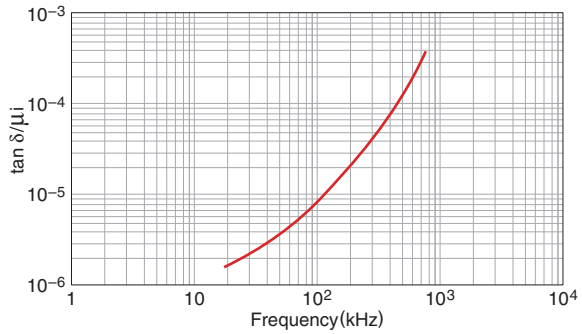
□μi temperature characteristics(Typ.)



□B-H temperature characteristics(Typ.)



□tanδ/ μi frequency characteristics(Typ.)



Mn-Zn Material List of Ferrite Core for Telecommunication

MATERIAL CHARACTERISTICS

Material	Initial permeability μi	Relative loss factor $\tan\delta/\mu i$ $\times 10^{-6}$	Temperature factor of initial permeability $\alpha\mu ir$ $\times 10^{-6}$ –30 to +20°C 0 to 20°C 20 to 70°C	Saturation magnetic flux density* Bs (mT) H=1194A/m 25°C	Remanent flux density* Br (mT) H=1194A/m 25°C	Coercive force* Hc (A/m) H=1194A/m 25°C	Curie temperature Tc (°C)	Hysteresis material constan ηB $\frac{10^{-6}}{mT}$	Disaccommodation factor DF $\times 10^{-6}$	Density* db (kg/m^3) $\times 10^3$	Electrical resistivity* ρv ($\Omega \cdot m$)
H5A	$3300^{+40\%}_{-0\%}$	<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
DNW45	4200±25%	<3.5	— — —	450	50	6.5	>150	<0.8	<3	4.85	0.65

* Typ.

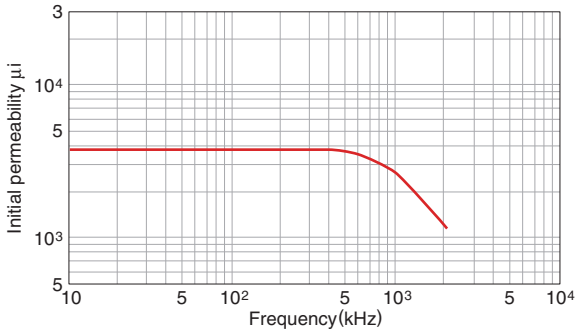
Mn-Zn Ferrite for Telecommunication **Material List of H5A**

MATERIAL CHARACTERISTICS

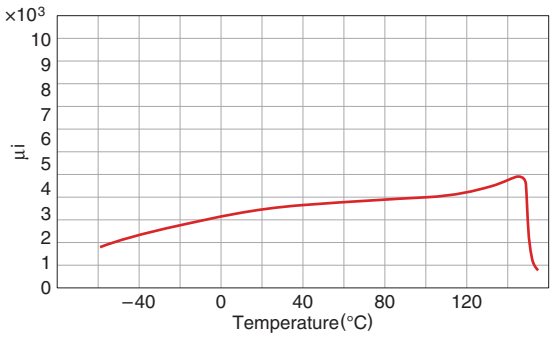
Initial permeability μi	Relative loss factor tanδ/μi ×10⁻⁶	Temperature factor of initial permeability αμir ×10⁻⁶ −30 to +20°C 0 to 20°C 20 to 70°C	Saturation magnetic flux density* Bs (mT) H=1194A/m 25°C	Remanent flux density* Br (mT) H=1194A/m 25°C	Coercive force* Hc (A/m) H=1194A/m 25°C	Curie temperature Tc (°C)	Hysteresis material constan ηB $\frac{10^{-6}}{mT}$	Disaccommodation factor DF ×10⁻⁶	Density* db (kg/m³) ×10³	Electrical resistivity* ρv (Ω • m)
$3300^{+40\%}_{-0\%}$	<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.

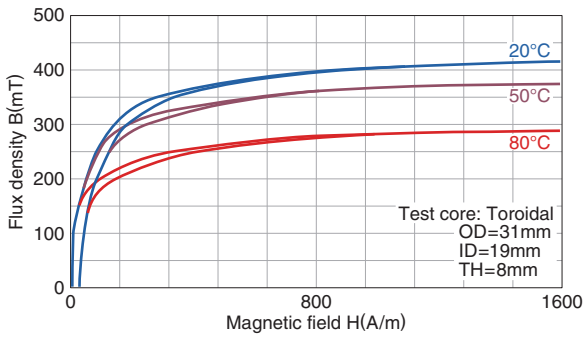
□μi frequency characteristics(Typ.)



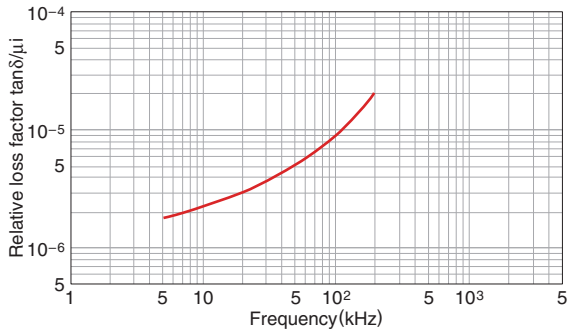
□μi temperature characteristics(Typ.)



□B-H temperature characteristics(Typ.)



□tanδ/ μi frequency characteristics(Typ.)



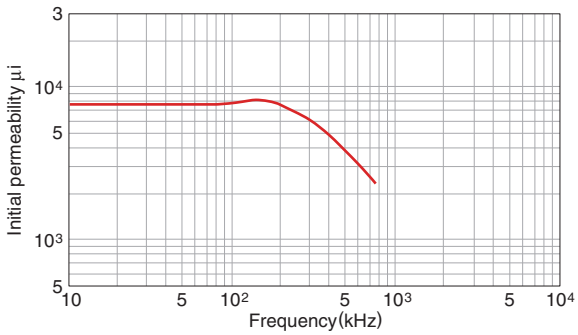
Mn-Zn Ferrite for Telecommunication **Material List of H5B2**

MATERIAL CHARACTERISTICS

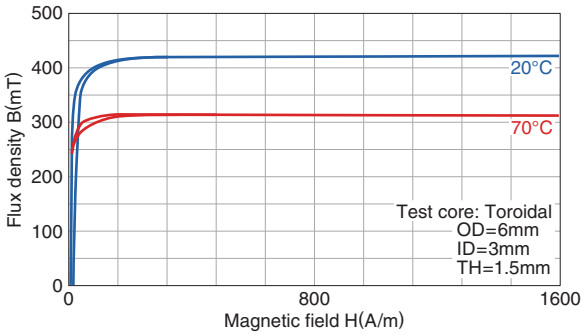
Initial permeability μi	Relative loss factor tanδ/μi ×10⁻⁶	Temperature factor of initial permeability αμir ×10⁻⁶ −30 to +20°C 0 to 20°C 20 to 70°C	Saturation magnetic flux density* Bs (mT) H=1194A/m 25°C	Remanent flux density* Br (mT) H=1194A/m 25°C	Coercive force* Hc (A/m) H=1194A/m 25°C	Curie temperature Tc (°C)	Hysteresis material constan ηB $\frac{10^{-6}}{mT}$	Disaccommodation factor DF ×10⁻⁶	Density* db (kg/m³) ×10³	Electrical resistivity* ρv (Ω • 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.

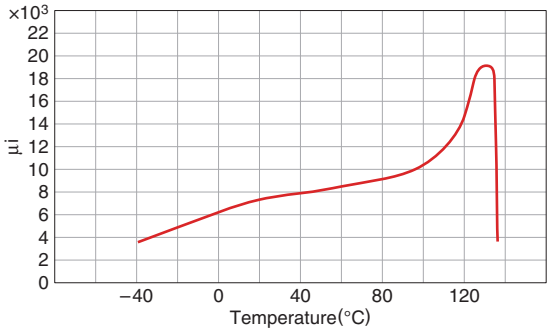
□μi frequency characteristics(Typ.)



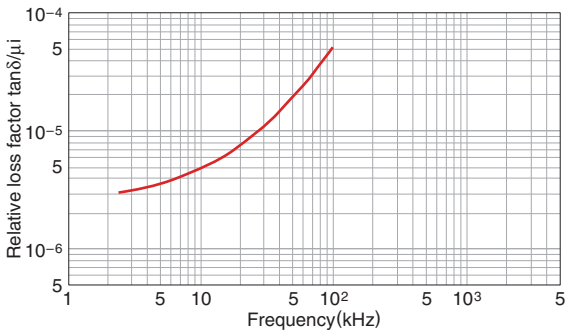
□B-H temperature characteristics(Typ.)



□μi temperature characteristics(Typ.)



□tanδ/ μi frequency characteristics(Typ.)



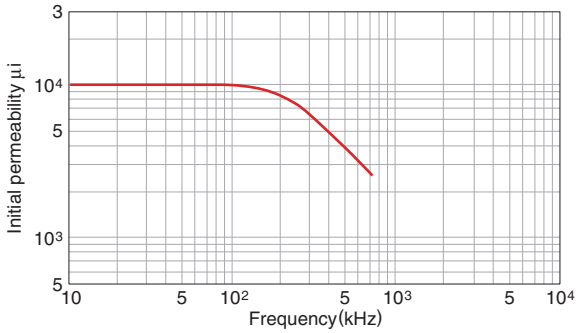
Mn-Zn Ferrite for Telecommunication **Material List of H5C2**

MATERIAL CHARACTERISTICS

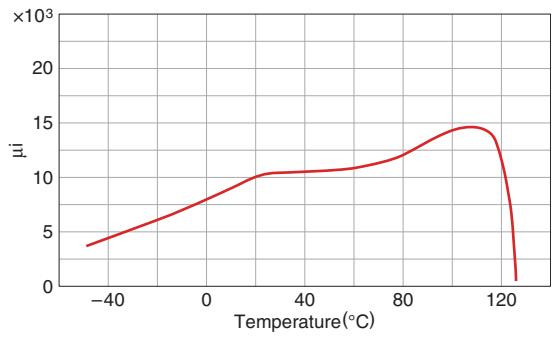
Initial permeability μi	Relative loss factor tanδ/μi ×10⁻⁶	Temperature factor of initial permeability αμir ×10⁻⁶ −30 to +20°C 0 to 20°C 20 to 70°C	Saturation magnetic flux density* Bs (mT) H=1194A/m 25°C	Remanent flux density* Br (mT) H=1194A/m 25°C	Coercive force* Hc (A/m) H=1194A/m 25°C	Curie temperature Tc (°C)	Hysteresis material constan ηB 10⁻⁶/mT	Disaccommodation factor DF ×10⁻⁶	Density* db (kg/m³) ×10³	Electrical resistivity* ρv (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.

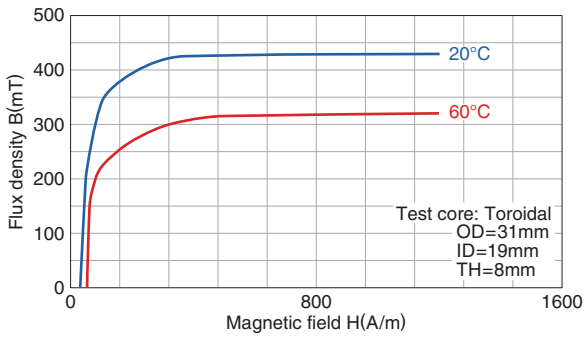
□μi frequency characteristics(Typ.)



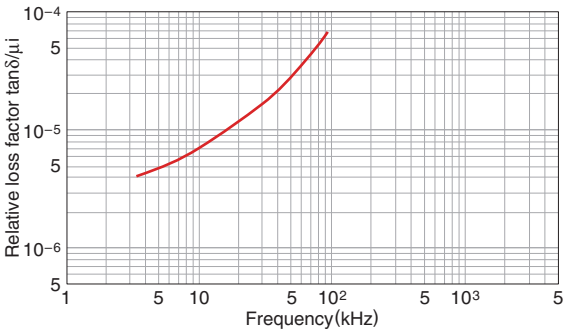
□μi temperature characteristics(Typ.)



□B-H temperature characteristics(Typ.)



□tanδ/ μi frequency characteristics(Typ.)



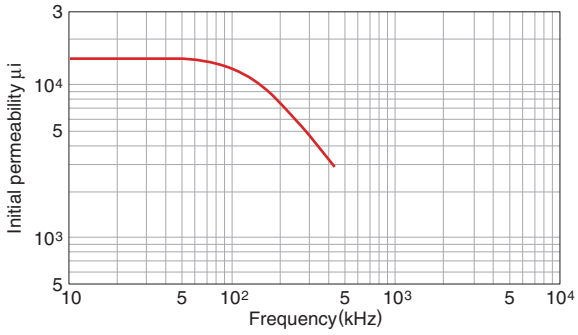
Mn-Zn Ferrite for Telecommunication **Material List of H5C3**

MATERIAL CHARACTERISTICS

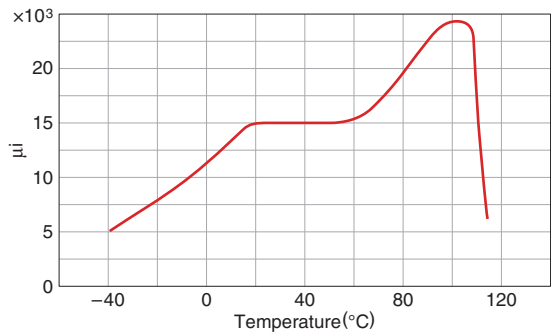
Initial permeability μi	Relative loss factor tanδ/μi ×10⁻⁶	Temperature factor of initial permeability αμir ×10⁻⁶ −30 to +20°C 0 to 20°C 20 to 70°C	Saturation magnetic flux density* Bs (mT) H=1194A/m 25°C	Remanent flux density* Br (mT) H=1194A/m 25°C	Coercive force* Hc (A/m) H=1194A/m 25°C	Curie temperature Tc (°C)	Hysteresis material constan ηB $\frac{10^{-6}}{mT}$	Disaccommodation factor DF ×10⁻⁶	Density* db (kg/m³) ×10³	Electrical resistivity* ρv (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.

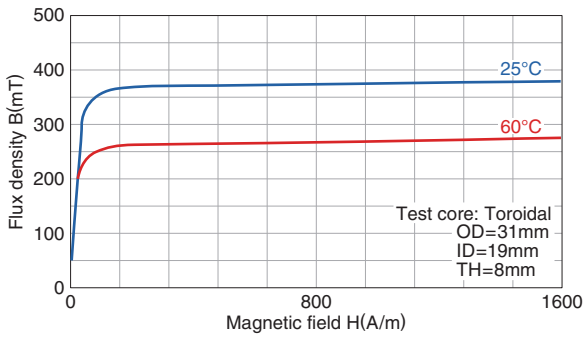
□μi frequency characteristics(Typ.)



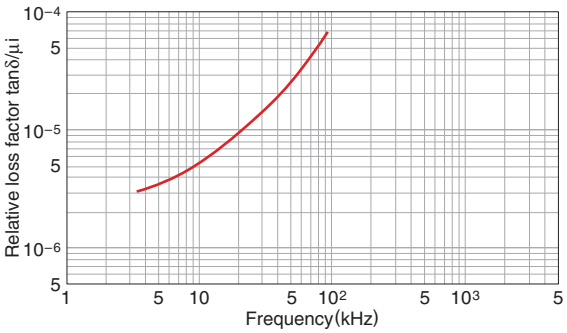
□μi temperature characteristics(Typ.)



□B-H temperature characteristics(Typ.)



□tanδ/ μi frequency characteristics(Typ.)



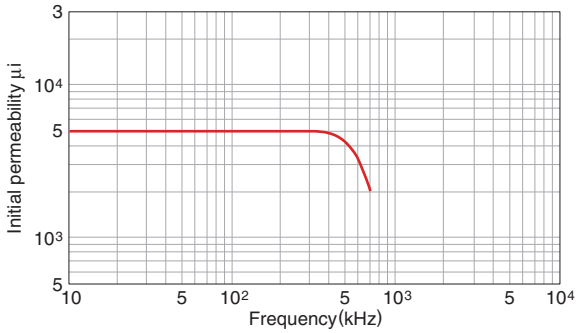
Mn-Zn Ferrite for Telecommunication **Material List of HP5**

MATERIAL CHARACTERISTICS

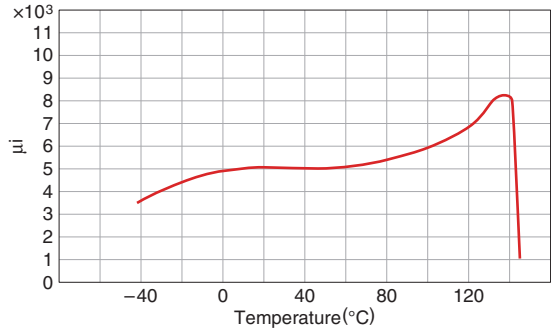
Initial permeability μi	Relative loss factor tanδ/μi ×10⁻⁶	Temperature factor of initial permeability αμir ×10⁻⁶ −30 to +20°C 0 to 20°C 20 to 70°C	Saturation magnetic flux density* Bs (mT) H=1194A/m 25°C	Remanent flux density* Br (mT) H=1194A/m 25°C	Coercive force* Hc (A/m) H=1194A/m 25°C	Curie temperature Tc (°C)	Hysteresis material constan ηB $\frac{10^{-6}}{mT}$	Disaccommodation factor DF ×10⁻⁶	Density* db (kg/m³) ×10³	Electrical resistivity* ρv (Ω • m)
5000±20%	<3.5	— ±12.5% ±12.5%	400	65	7.2	>140	<0.4	<3	4.8	0.15

* Typ.

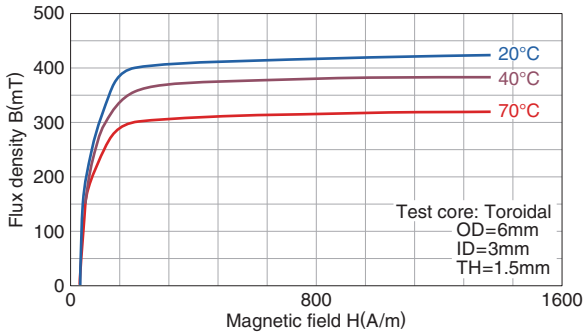
□μi frequency characteristics(Typ.)



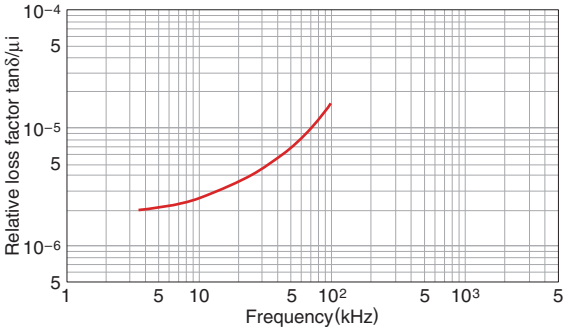
□μi temperature characteristics(Typ.)



□B-H temperature characteristics(Typ.)



□tanδ/ μi frequency characteristics(Typ.)



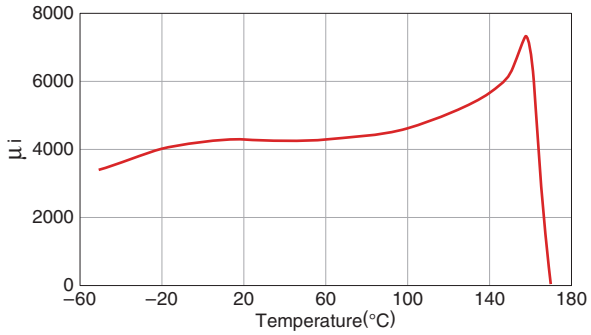
Mn-Zn Ferrite for Telecommunication **Material List of DNW45**

MATERIAL CHARACTERISTICS

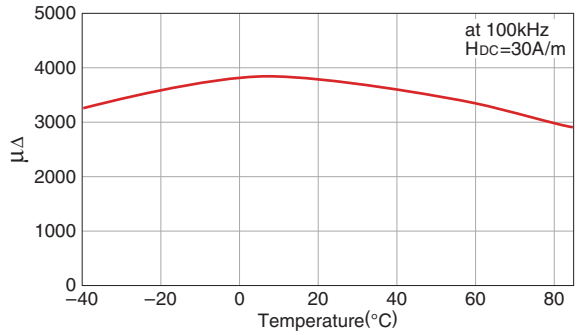
Initial permeability μi	Relative loss factor tanδ/μi ×10⁻⁶	Temperature factor of initial permeability αμir ×10⁻⁶ −30 to +20°C 0 to 20°C 20 to 70°C	Saturation magnetic flux density* Bs (mT) H=1194A/m 25°C	Remanent flux density* Br (mT) H=1194A/m 25°C	Coercive force* Hc (A/m) H=1194A/m 25°C	Curie temperature Tc (°C)	Hysteresis material constan ηB $\frac{10^{-6}}{mT}$	Disaccommodation factor DF ×10⁻⁶	Density* db (kg/m³) ×10³	Electrical resistivity* ρv (Ω • m)
4200±25%	<3.5	— — —	450	50	6.5	>150	<0.8	<3	4.85	0.65

* Typ.

□μi temperature characteristics(Typ.)



□μΔ temperature characteristics(Typ.)



Mn-Zn Material List of Large Size Ferrite for High Power

MATERIAL CHARACTERISTICS

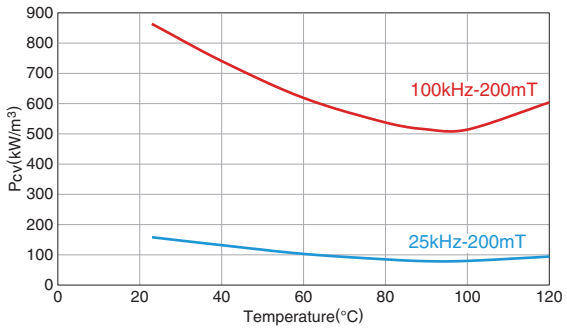
Material	Initial permeability μi 23°C	Curie temperature Tc (°C)	Saturation magnetic flux density Bs (mT) H=1194A/m 23°C	Saturation magnetic flux density Bs (mT) H=1194A/m 100°C	Remanent flux density Br (mT) H=1194A/m 23°C	Coercive force Hc (A/m) H=1194A/m 23°C	Core loss Pcv (kW/m³) B=200mT 25kHz 90°C	Core loss Pcv (kW/m³) B=200mT 25kHz 100°C	Core loss Pcv (kW/m³) B=200mT 100kHz 100°C	Electrical resistivity ρ (Ω • m)	Approximate density dapp (kg/m³) ×10³	Thermal expansion coefficient α (1/K) ×10⁻⁶	Thermal conductivity κ (W/mK)	Specific heat Cp (J/kg • K)	Bending strength δb3 (N/m²) ×10⁷	Young's modulus E (N/m²) ×10¹¹	Magnetostriction λs ×10⁻⁶
PE22	1800	>200	510	410	140	16	79	80	520	3.0	4.8	12	5	600	9	1.2	–0.6
PC40	2300	>200	500	380	125	15	64	70	420	6.5	4.8	12	5	600	9	1.2	–0.6
PE90	2200	>250	530	430	170	13	60	68	400	6.0	4.9	12	5	600	9	1.2	–0.6

Mn-Zn Large Size Ferrite for High Power **Material List of PE22**

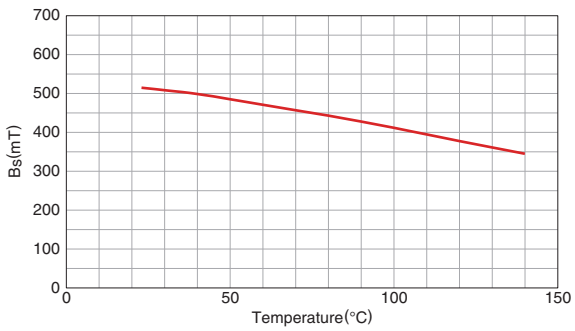
MATERIAL CHARACTERISTICS

Initial permeability μi 23°C	Curie temperature Tc (°C)	Saturation magnetic flux density Bs (mT) H=1194A/m 23°C	Saturation magnetic flux density Bs (mT) H=1194A/m 100°C	Remanent flux density Br (mT) H=1194A/m 23°C	Coercive force Hc (A/m) H=1194A/m 23°C	Core loss Pcv (kW/m³) B=200mT 25kHz 90°C	Core loss Pcv (kW/m³) B=200mT 25kHz 100°C	Core loss Pcv (kW/m³) B=200mT 100kHz 100°C	Electrical resistivity ρ (Ω • m)	Approximate density dapp (kg/m³) ×10³	Thermal expansion coefficient α (1/K) ×10⁻⁶	Thermal conductivity κ (W/mK)	Specific heat Cp (J/kg • K)	Bending strength δb3 (N/m²) ×10⁷	Young's modulus E (N/m²) ×10¹¹	Magnetostriction λs ×10⁻⁶
1800	>200	510	410	140	16	79	80	520	3.0	4.8	12	5	600	9	1.2	−0.6

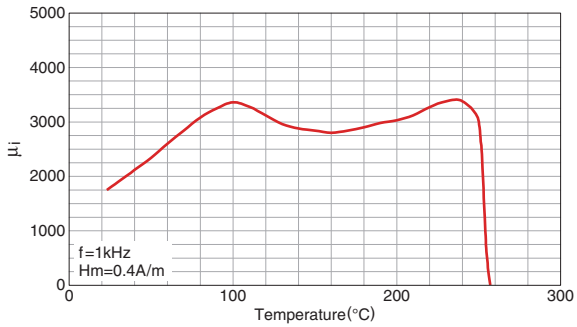
Core loss vs. temperature characteristics(Typ.)



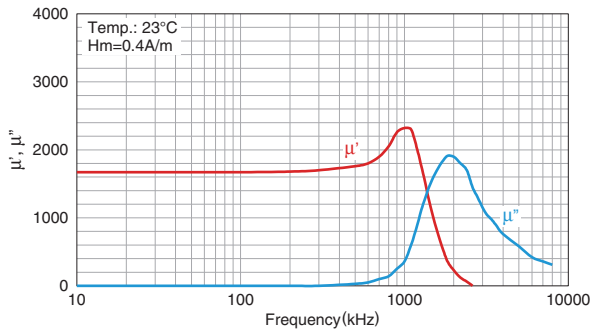
Saturation magnetic flux density vs. temperature characteristics(Typ.)



Initial magnetic permeability vs. temperature characteristics(Typ.)

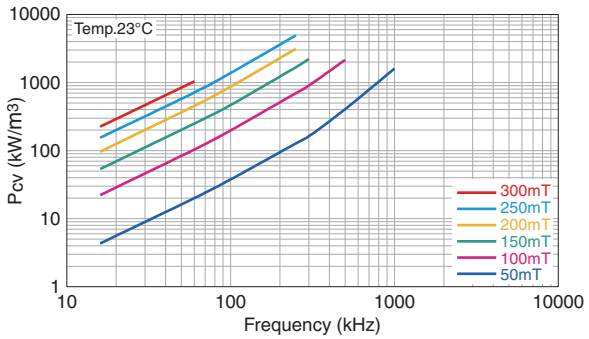


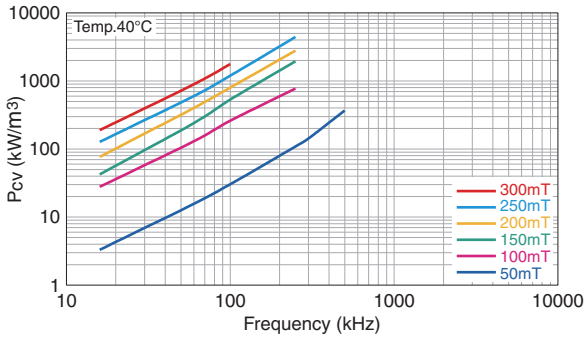
Magnetic permeability vs. frequency characteristics(Typ.)

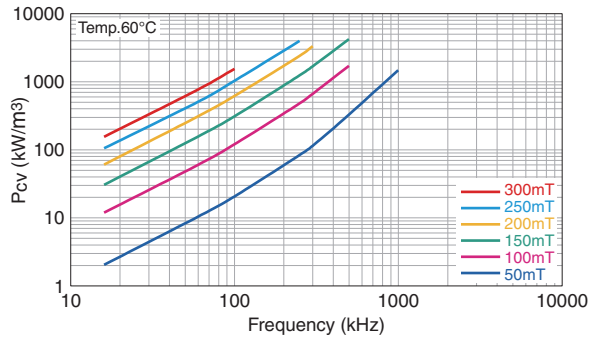


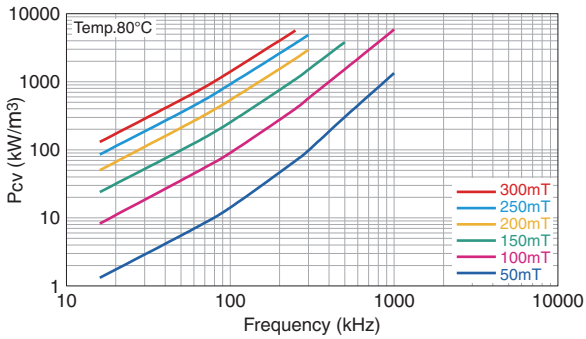
Mn-Zn Large Size Ferrite for High Power **Material List of PE22**

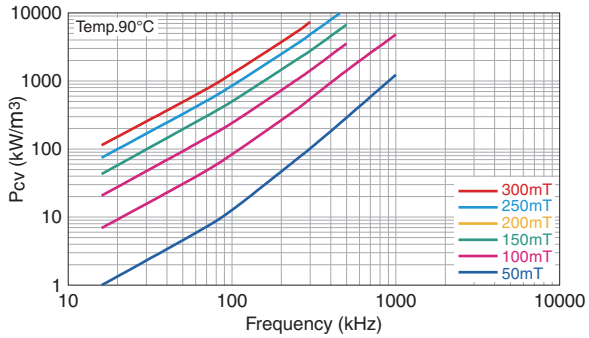
☐Core loss vs. temperature characteristics

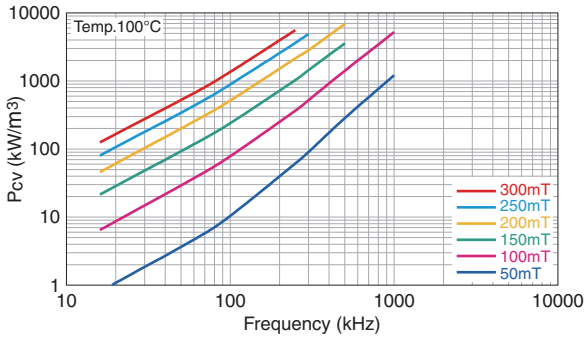


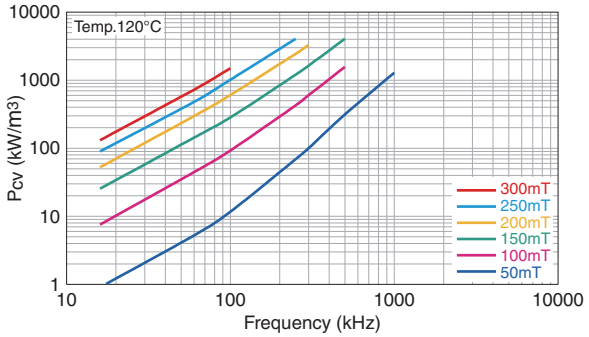










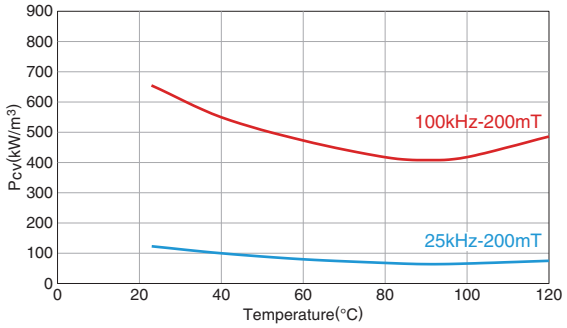


Mn-Zn Large Size Ferrite for High Power **Material List of PC40**

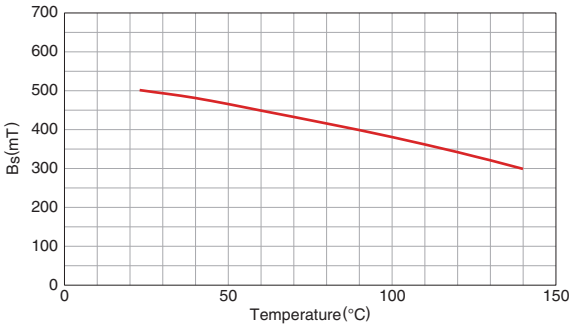
MATERIAL CHARACTERISTICS

Initial permeability μi 23°C	Curie temperature Tc (°C)	Saturation magnetic flux density Bs (mT) H=1194A/m 23°C	Saturation magnetic flux density Bs (mT) H=1194A/m 100°C	Remanent flux density Br (mT) H=1194A/m 23°C	Coercive force Hc (A/m) H=1194A/m 23°C	Core loss Pcv (kW/m³) B=200mT 25kHz 90°C	Core loss Pcv (kW/m³) B=200mT 25kHz 100°C	Core loss Pcv (kW/m³) B=200mT 100kHz 100°C	Electrical resistivity ρ (Ω • m)	Approximate density dapp (kg/m³) ×10³	Thermal expansion coefficient α (1/K) ×10⁻⁶	Thermal conductivity κ (W/mK)	Specific heat Cp (J/kg • K)	Bending strength δb3 (N/m²) ×10⁷	Young's modulus E (N/m²) ×10¹¹	Magnetostriction λs ×10⁻⁶
2300	>200	500	380	125	15	64	70	420	6.5	4.8	12	5	600	9	1.2	−0.6

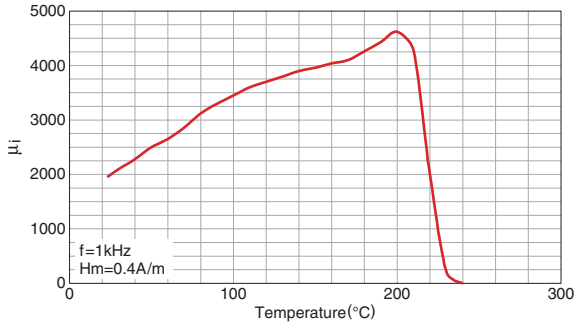
Core loss vs. temperature characteristics(Typ.)



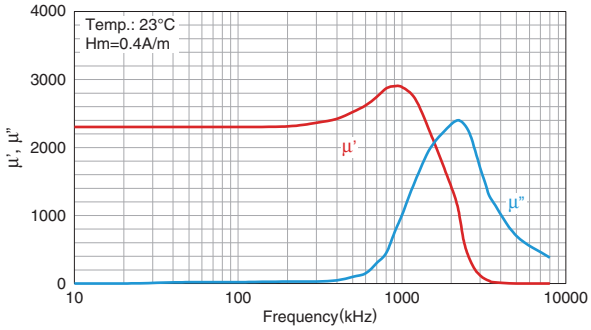
Saturation magnetic flux density vs. temperature characteristics(Typ.)



Initial magnetic permeability vs. temperature characteristics(Typ.)

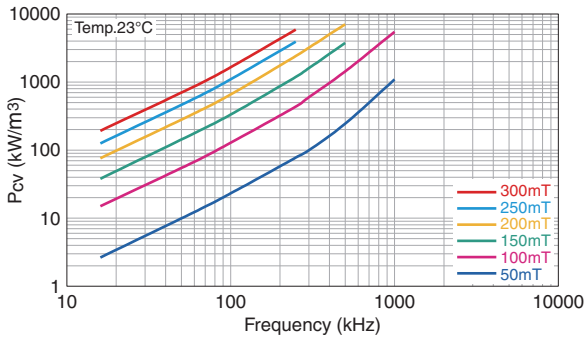


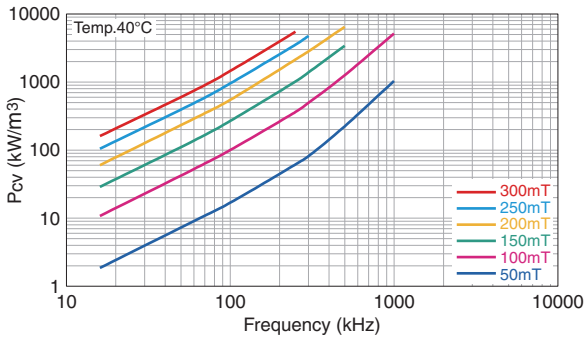
Magnetic permeability vs. frequency characteristics(Typ.)

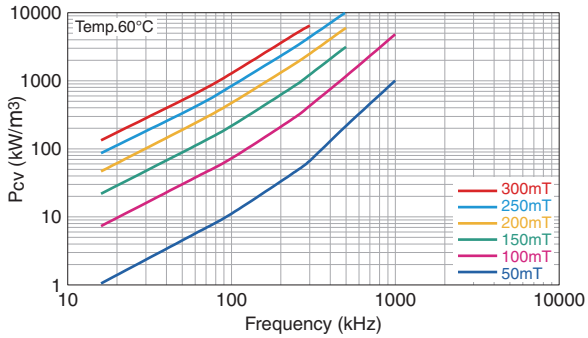


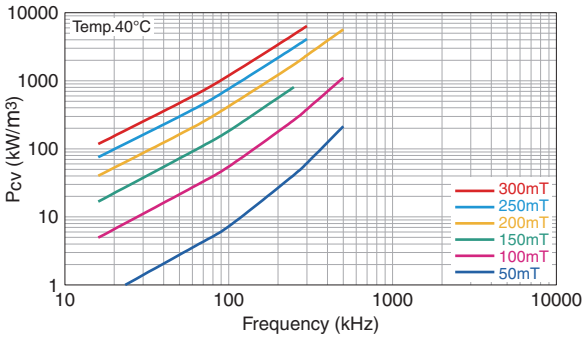
Mn-Zn Large Size Ferrite for High Power **Material List of PC40**

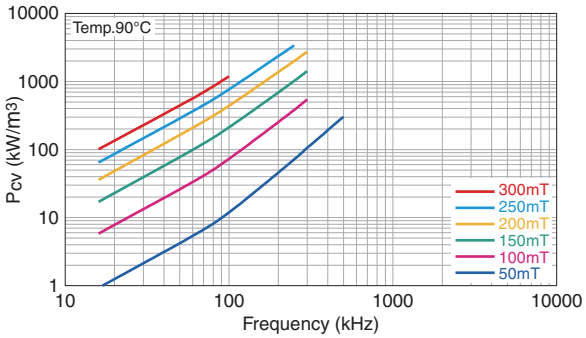
□Core loss vs. temperature characteristics

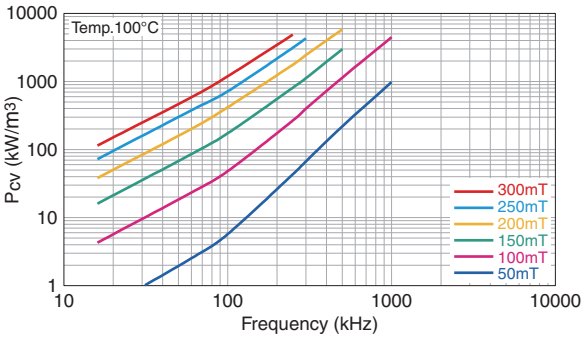


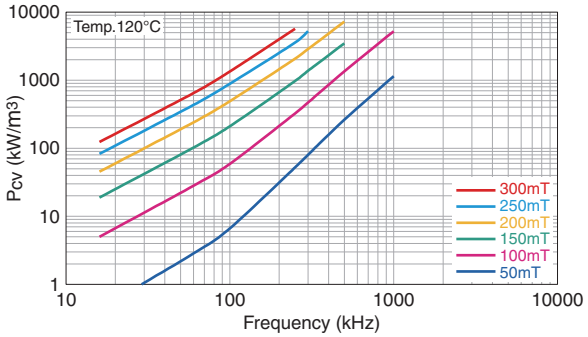










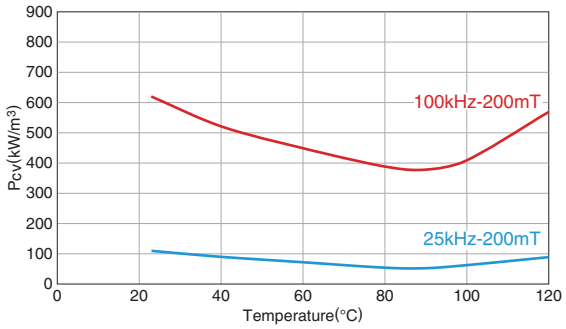


Mn-Zn Large Size Ferrite for High Power **Material List of PE90**

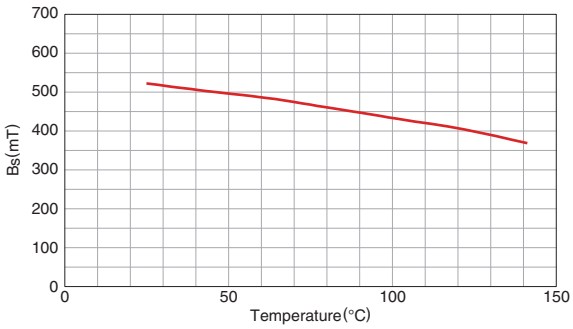
MATERIAL CHARACTERISTICS

Initial permeability μi 23°C	Curie temperature Tc (°C)	Saturation magnetic flux density Bs (mT) H=1194A/m 23°C	Saturation magnetic flux density Bs (mT) H=1194A/m 100°C	Remanent flux density Br (mT) H=1194A/m 23°C	Coercive force Hc (A/m) H=1194A/m 23°C	Core loss Pcv (kW/m³) B=200mT 25kHz 90°C	Core loss Pcv (kW/m³) B=200mT 25kHz 100°C	Core loss Pcv (kW/m³) B=200mT 100kHz 100°C	Electrical resistivity ρ (Ω • m)	Approximate density dapp (kg/m³) ×10³	Thermal expansion coefficient α (1/K) ×10⁻⁶	Thermal conductivity κ (W/mK)	Specific heat Cp (J/kg • K)	Bending strength δb3 (N/m²) ×10⁷	Young's modulus E (N/m²) ×10¹¹	Magnetostriction λs ×10⁻⁶
2200	>250	530	430	170	13	60	68	400	6.0	4.9	12	5	600	9	1.2	–0.6

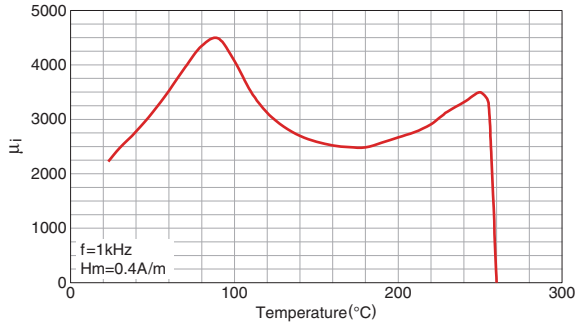
Core loss vs. temperature characteristics(Typ.)



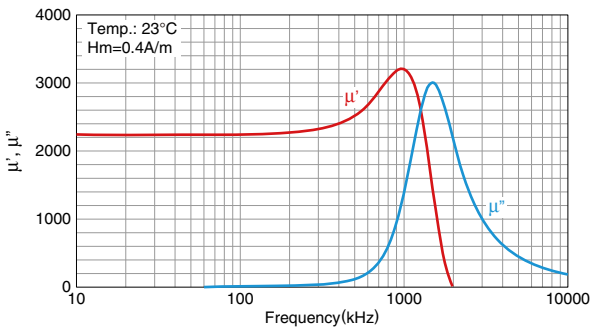
Saturation magnetic flux density vs. temperature characteristics(Typ.)



Initial magnetic permeability vs. temperature characteristics(Typ.)



Magnetic permeability vs. frequency characteristics(Typ.)



Mn-Zn Large Size Ferrite for High Power **Material List of PE90**

□Core loss vs. temperature characteristics