

MATERIAL CHARACTERISTICS

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For Transformer and Choke

Material				PC40	PC44	PC47	PC50	
Initial permeability	μ_i			2300±25%	2400±25%	2500±25%	1400±25%	
Amplitude permeability	μ_a			3000 min.	3000 min.			
Core loss volume density (Core loss)* [B=200mT]	Pcv	kW/m ³	25kHz sine wave	25°C				
				60°C	120			
				100°C	80			
				120°C	70			
			100kHz sine wave	25°C	600	600	600	130**
				60°C	450	400	400	80**
				100°C	410	300	250	80**
				120°C	500	380	360	110**
Saturation magnetic flux density* [H=1194A/m]	Bs	mT	25°C	510	510	530	470	
			60°C	450	450	480	440	
			100°C	390	390	420	380	
			120°C	350	350	390	350	
Remanent flux density*	Br	mT	25°C	95	110	180	140	
			60°C	65	70	100	110	
			100°C	55	60	60	98	
			120°C	50	55	60	100	
Coercive force*	Hc	A/m	25°C	14.3	13	13	36.5	
			60°C	10.3	9	9	31.0	
			100°C	8.8	6.5	6	27.2	
			120°C	8	6	7	26.0	
Curie temperature	Tc	°C		>215	>215	>230	>240	
Density*	db	kg/m ³		4.8×10 ³	4.8×10 ³	4.9×10 ³	4.8×10 ³	
Electrical resistivity*	ρ_v	$\Omega \cdot m$		6.5	6.5	4.0	30	

Material				PC45	PC46	PC33	PC95	
Initial permeability	μ_i			2500±25%	3200±25%	1400±25%	3300±25%	
Amplitude permeability	μ_a							
Core loss volume density (Core loss)* [B=200mT]	Pcv	kW/m ³	100kHz sine wave	25°C	570	350	1100	350
				60°C	250(75°C)	250(45°C)	800	
				100°C	460	660	600	290
				120°C	650	760	680	350
Saturation magnetic flux density* [H=1194A/m]	Bs	mT	25°C	530	520	510	530	
			60°C	480	470	490	480	
			100°C	420	410	440	410	
			120°C	390	380	420	380	
Remanent flux density*	Br	mT	25°C	120	80	220	85	
			60°C	80	80	150	70	
			100°C	80	130	100	60	
			120°C	110	140	100	55	
Coercive force*	Hc	A/m	25°C	12	10	23	9.5	
			60°C	9	9	17	7.5	
			100°C	8	10	14	6.5	
			120°C	9	9	14	6.0	
Curie temperature	Tc	°C		>230	>230	>290	>215	
Density*	db	kg/m ³		4.8×10 ³	4.8×10 ³	4.8×10 ³	4.9×10 ³	
Electrical resistivity*	ρ_v	$\Omega \cdot m$		3.0	3.0	2.5	6.0	

* Average value

** 500kHz, 50mT

For Common Mode Choke

Material				HS52	HS72	HS10
Initial permeability	μ			5500±25%	7500±25% (2000min. at 500kHz)	10000±25%
Relative loss factor*	$\tan\delta/\mu$	$\times 10^{-6}$		10(100kHz)	30(100kHz)	30(100kHz)
Saturation magnetic flux density* [H=1194A/m]	Bs	mT	25°C	410	410	380
Remanent flux density*	Br	mT	25°C	70	80	120
Coercive force*	Hc	A/m	25°C	6	6	5
Curie temperature	Tc	°C		>130	>130	>120
Density*	db	kg/m ³		4.9×10 ³	4.9×10 ³	4.9×10 ³
Electrical resistivity*	ρv	$\Omega \cdot m$		1	0.2	0.2

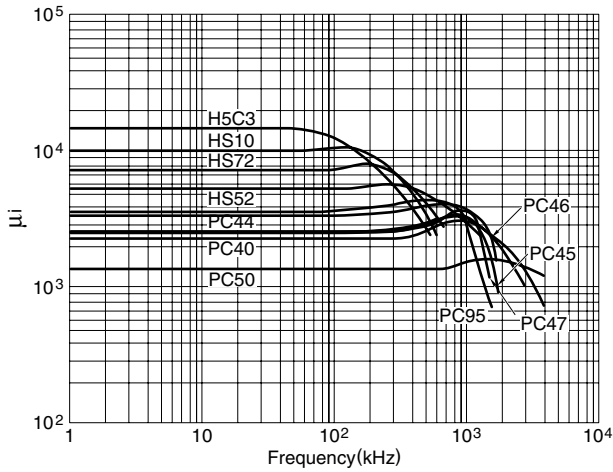
For Telecommunication

Material				H5A	H5B2	H5C2	H5C3	H5C4
Initial permeability	μ			3300 ^{+40%} _{-0%}	7500±25%	10000±30%	15000±30%	12000±30% ≥ 9000(-20°C)
Relative loss factor	$\tan\delta/\mu$	$\times 10^{-6}$		<2.5(10kHz) <10(100kHz)	<6.5(10kHz)	<7.0(10kHz)	<7.0(10kHz)	<8(10kHz)
Temperature factor of initial permeability	$\alpha\mu$	$\times 10^{-6}$	-30 to +20°C 0 to 20°C 20 to 70°C	-0.5 to 2.0 -0.5 to 2.0	0 to 1.8 0 to 1.8	-0.5 to 1.5 -0.5 to 1.5	-0.5 to 1.5 -0.5 to 1.5	
Saturation magnetic flux density* [H=1194A/m]	Bs	mT	25°C	410	420	400	360	380
Remanent flux density*	Br	mT	25°C	100	40	90	105	100
Coercive force*	Hc	A/m	25°C	8.0	5.6	7.2	4.4	4.4
Curie temperature	Tc	°C		>130	>130	>120	>105	>110
Hysteresis material constant	η_B	$\frac{10^{-6}}{mT}$		<0.8	<1.0	<1.4	<0.5	<2.8
Disaccommodation factor	D _F	$\times 10^{-6}$		<3	<3	<2	<2	<3
Density*	db	kg/m ³		4.8×10 ³	4.9×10 ³	4.9×10 ³	4.95×10 ³	4.95×10 ³
Electrical resistivity*	ρv	$\Omega \cdot m$		1	0.1	0.15	0.15	0.15

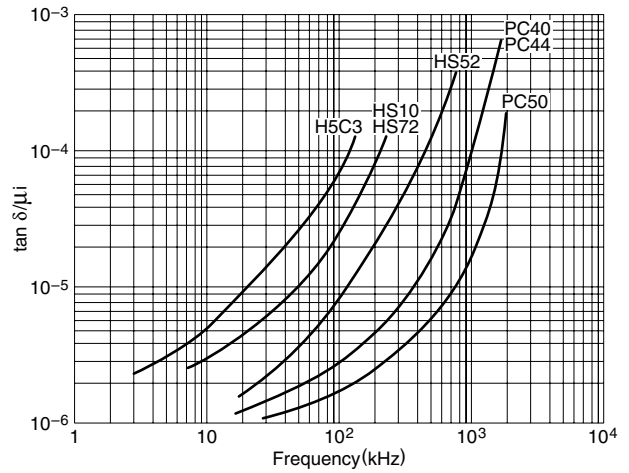
Material				H5C5	HP5	DNW45	DN40	DN70
Initial permeability	μ			30000±30%	5000±20%	4200±25%	4000±25%	7500±25%
Relative loss factor	$\tan\delta/\mu$	$\times 10^{-6}$	25°C, 10kHz	<15	<3.5	<3.5	<2.5	<2.0
Temperature factor of initial permeability	$\alpha\mu$	$\times 10^{-6}$	-30 to +20°C 0 to 20°C 20 to 70°C	-0.5 ~ 1.5 -0.5 ~ 1.5	±12.5% ±12.5%		-0.5 to 2.0 -0.5 to 2.0	-0.5 to 1.5 -0.5 to 1.5
Saturation magnetic flux density* [H=1194A/m]	Bs	mT	25°C	380	400	450	405	390
Remanent flux density*	Br	mT	25°C	120	65	50	95	45
Coercive force*	Hc	A/m	25°C	4.2	7.2	6.5	8.0	3.5
Curie temperature	Tc	°C		>110	>140	>150	>130	>105
Hysteresis material constant	η_B	$\frac{10^{-6}}{mT}$		<1.5	<0.4	<0.8	<0.8	<0.2
Disaccommodation factor	D _F	$\times 10^{-6}$		<2	<3	<3	<3	<2.5
Density*	db	kg/m ³		4.95×10 ³	4.8×10 ³	4.85×10 ³	4.8×10 ³	5.0×10 ³
Electrical resistivity*	ρv	$\Omega \cdot m$		0.15	0.15	0.65	1.0	0.3

* Average value

μ_i vs. Frequency Characteristics

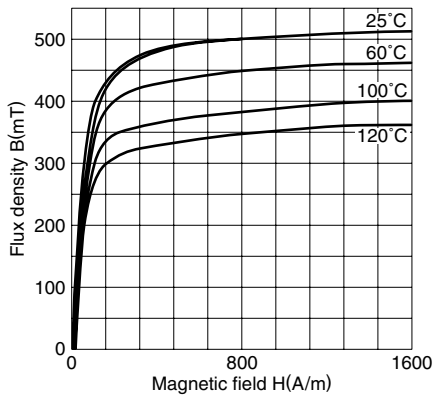


$\tan \delta/\mu_i$ vs. Frequency Characteristics

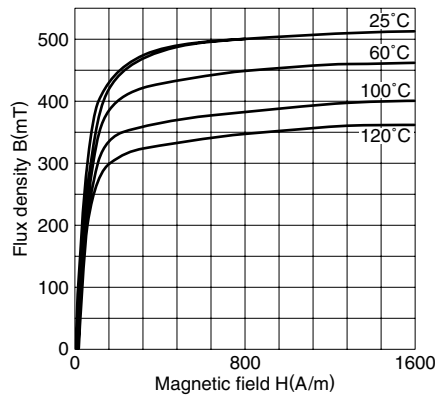


Magnetization Curves (Typical)

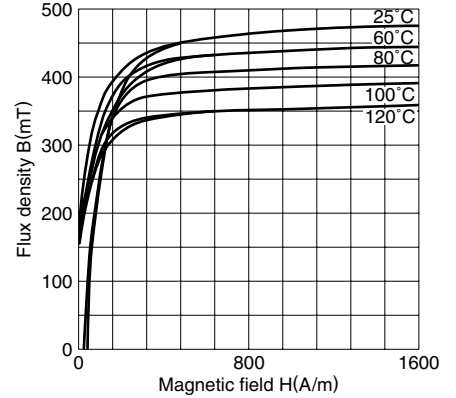
Material: PC40



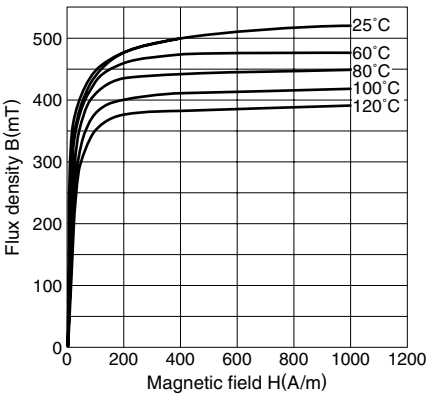
Material: PC44



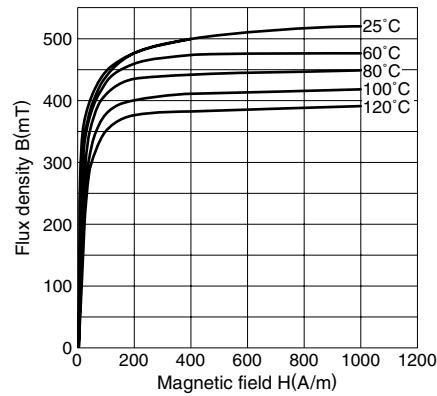
Material: PC50



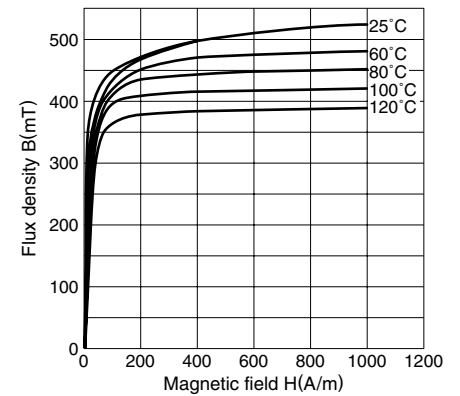
Material: PC45



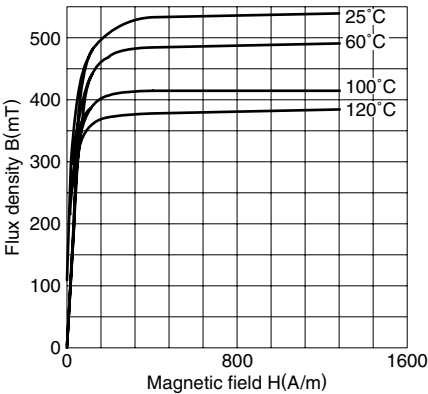
Material: PC46



Material: PC47



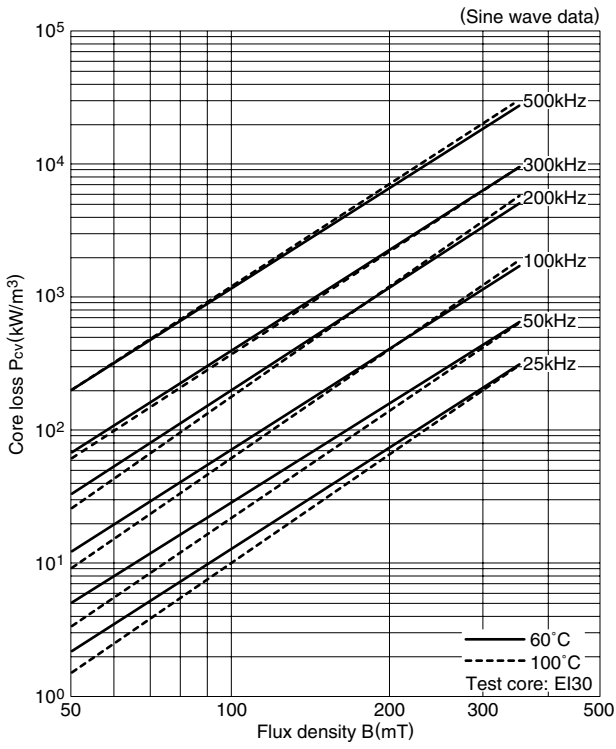
Material: PC95



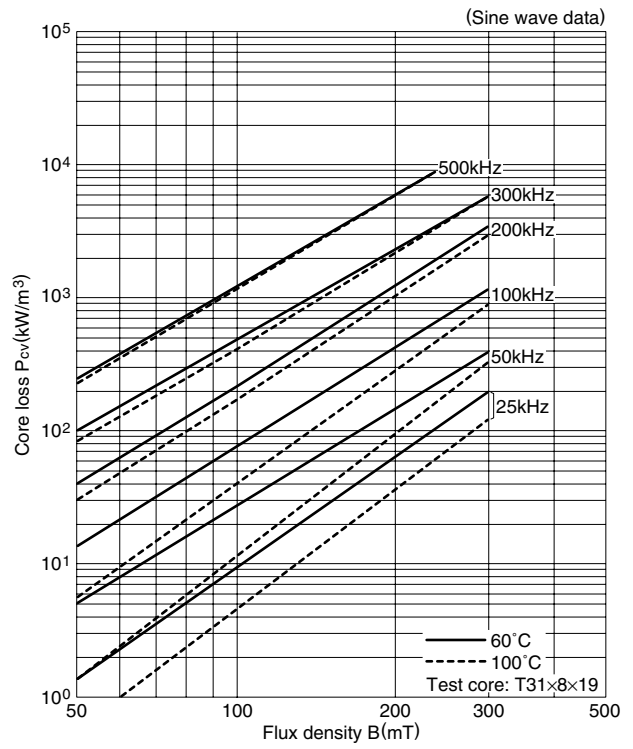
• All specifications are subject to change without notice.

Core Loss (Typical)

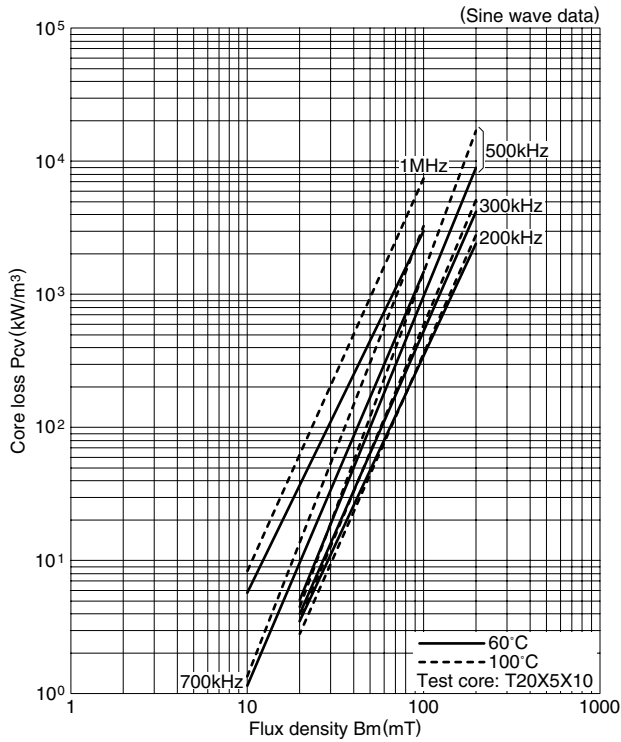
Material: PC40



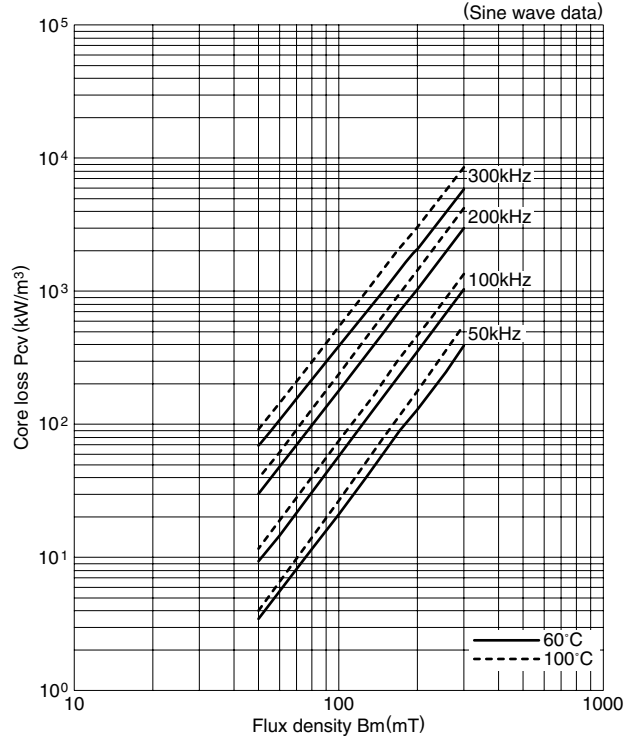
Material: PC44



Material: PC50



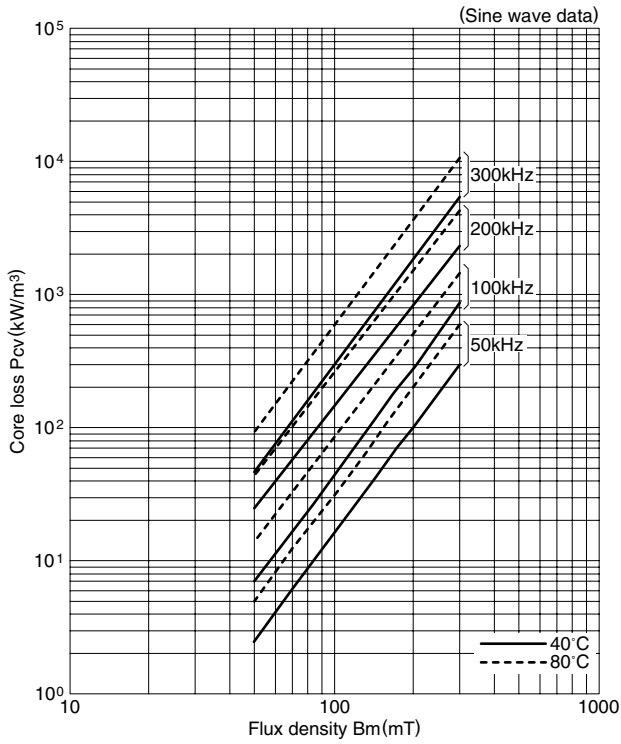
Material: PC45



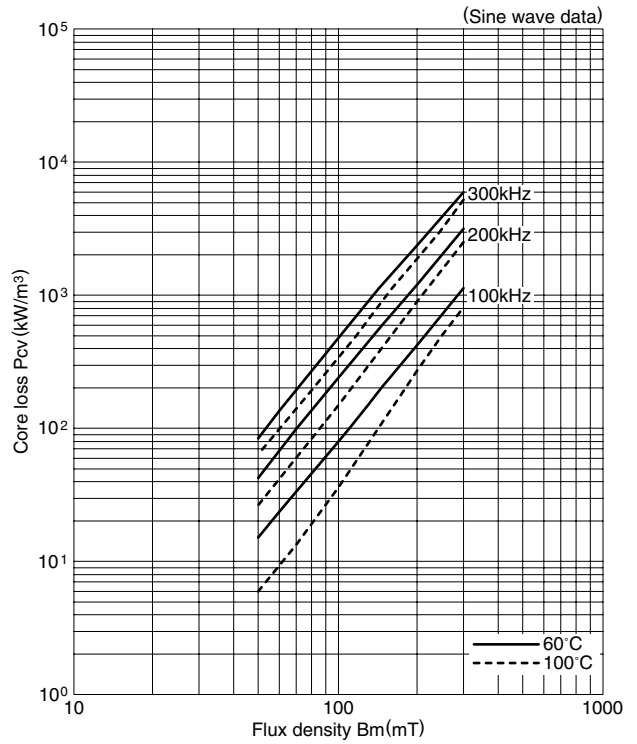
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Core Loss (Typical)

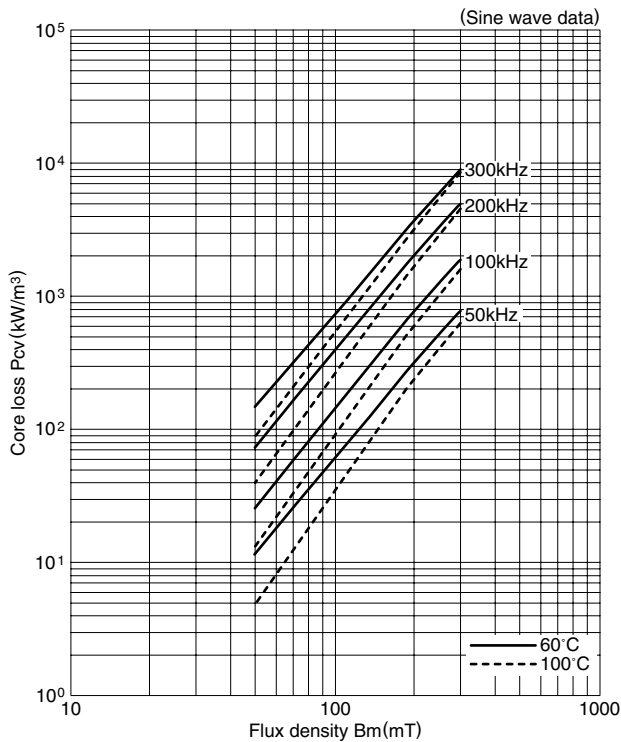
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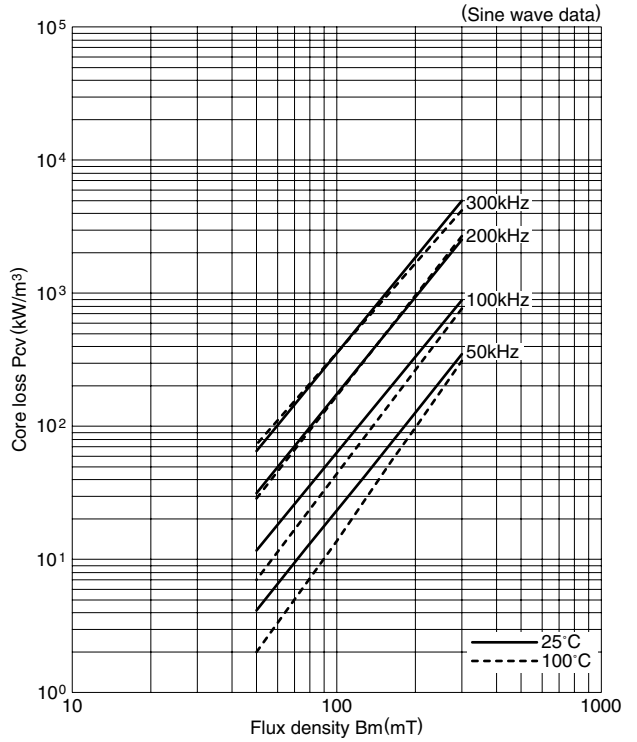
Material: PC47



Material: PC33



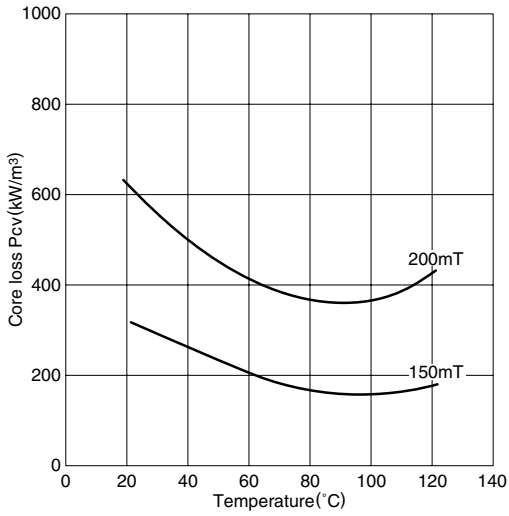
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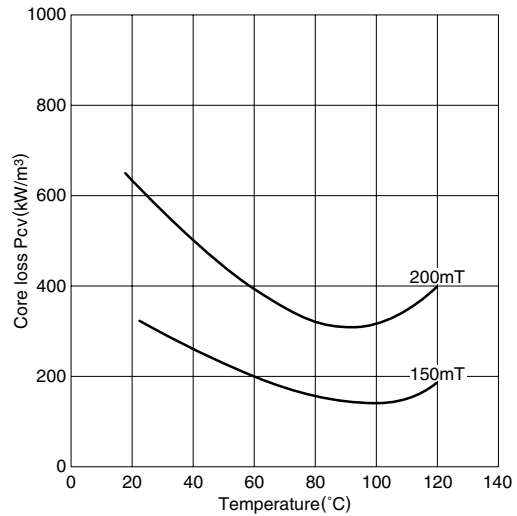
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Temperature Dependence of Core Loss (Typical)

Material: PC40 (Frequency: 100kHz)

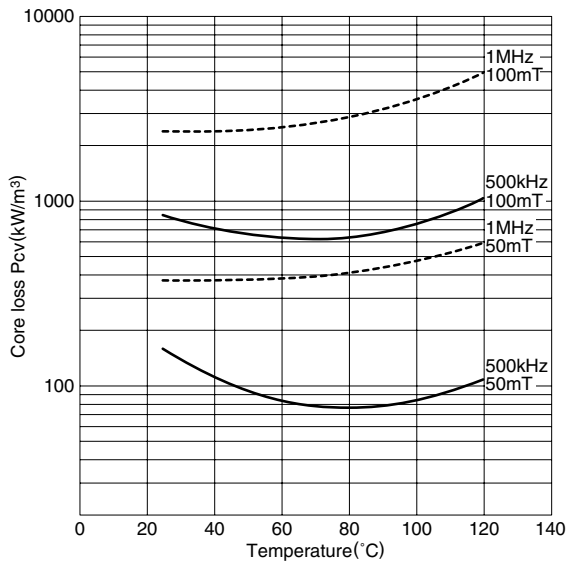


Material: PC44 (Frequency: 100kHz)

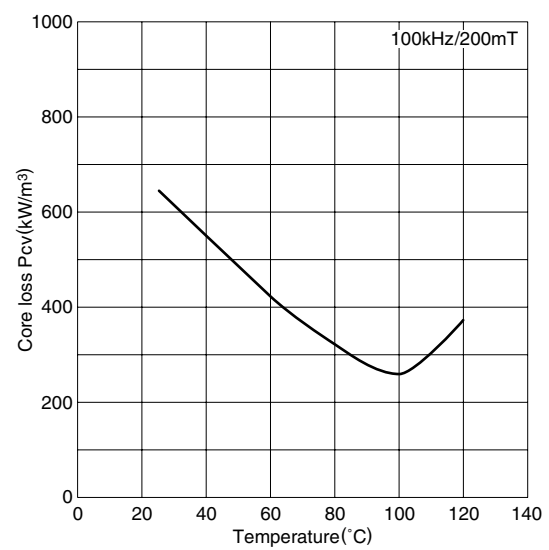


Test core: Toroidal
OD=31mm
TH=8mm
ID=19mm

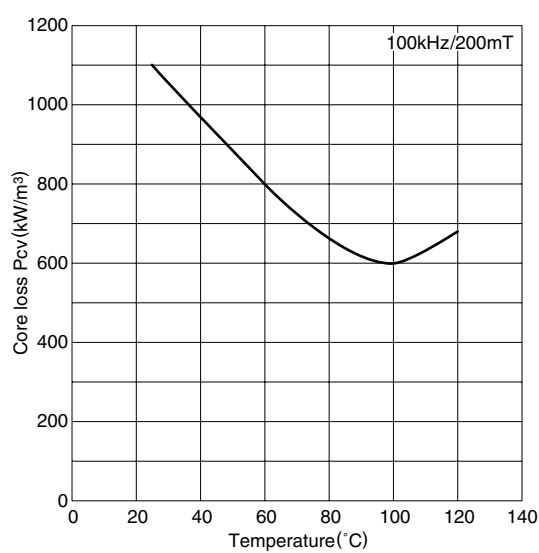
Material: PC50



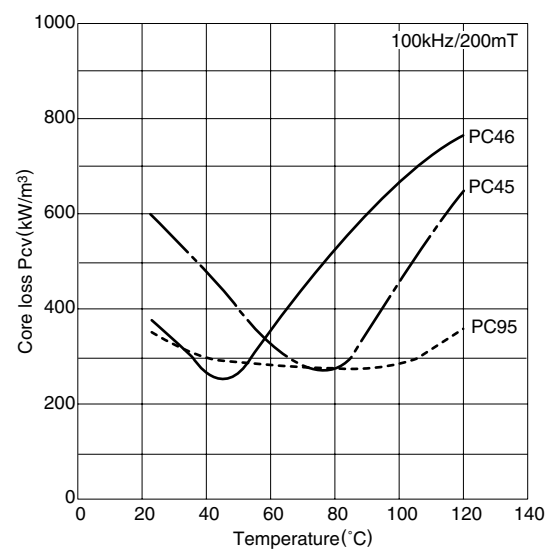
Material: PC47



Material: PC33



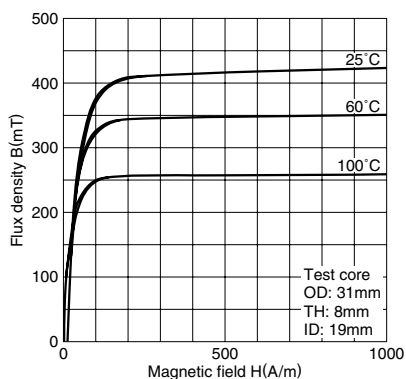
Material: PC95, PC45, PC46



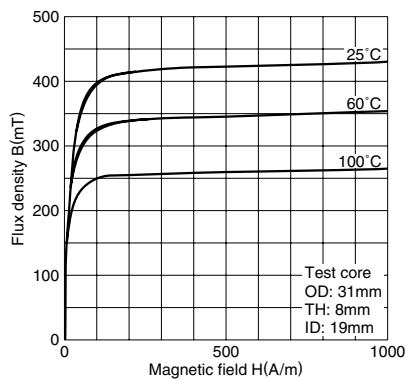
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Magnetization Curves (Typical)

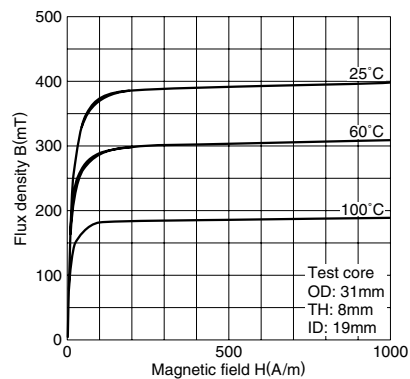
HS52



HS72

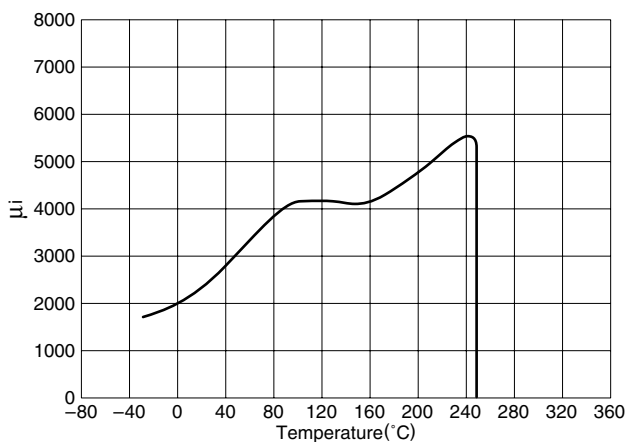


HS10

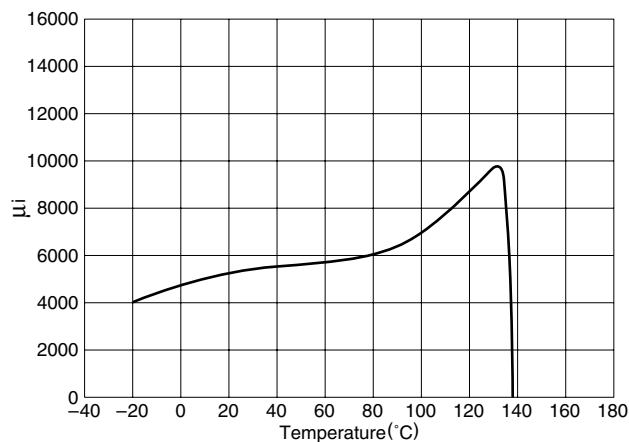


μ_i vs. Temperature Characteristics (Typical)

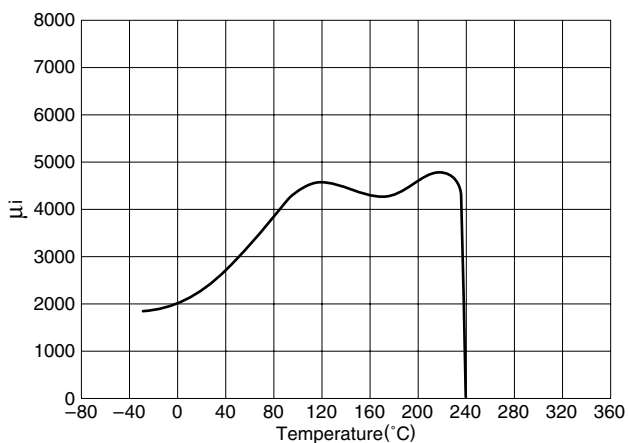
PC40



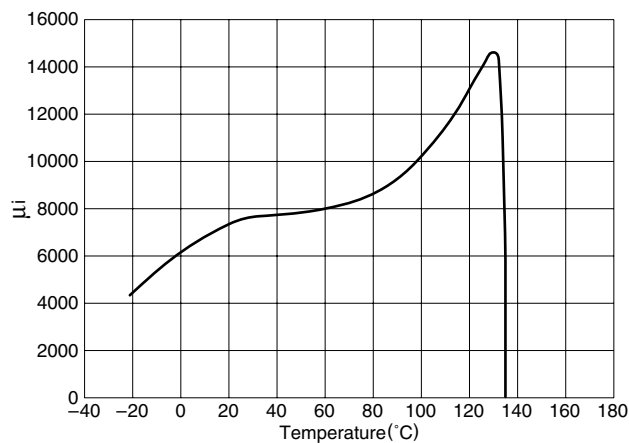
HS52



PC44



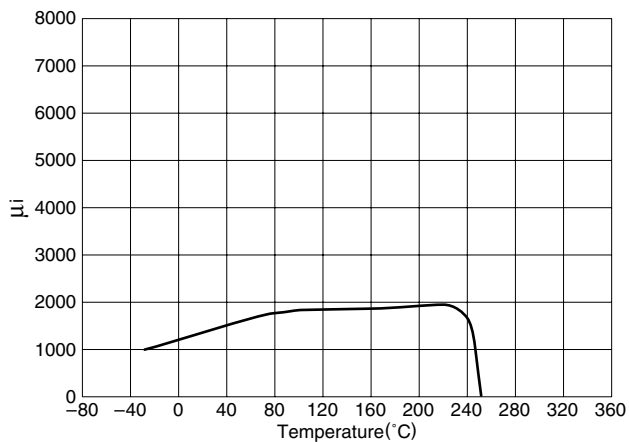
HS72



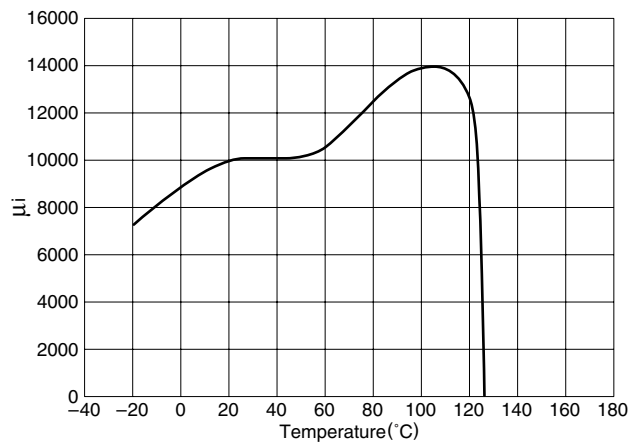
• All specifications are subject to change without notice.

μ_i vs. Temperature Characteristics (Typical)

PC50

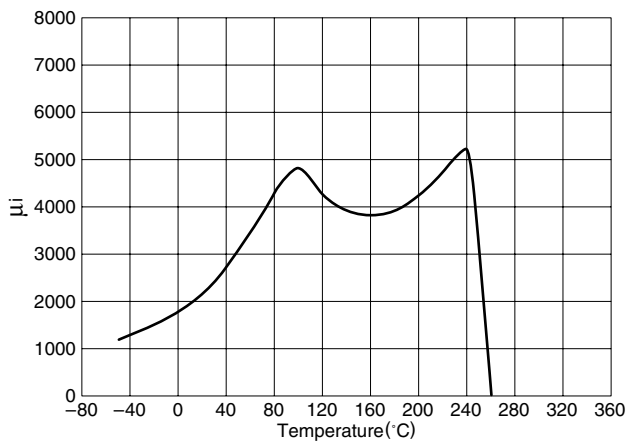


HS10

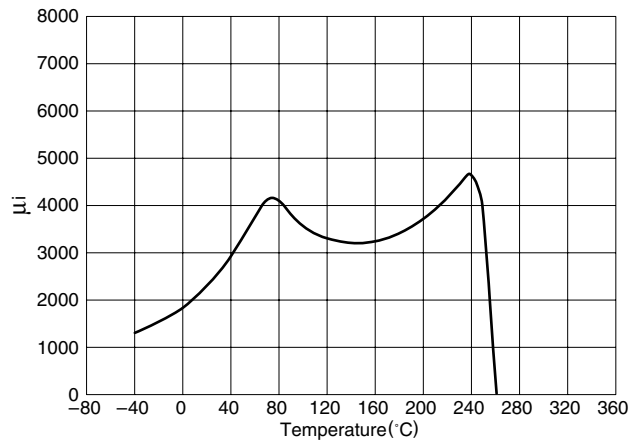


Test core: OD=31mm
TH=8mm
ID=19mm

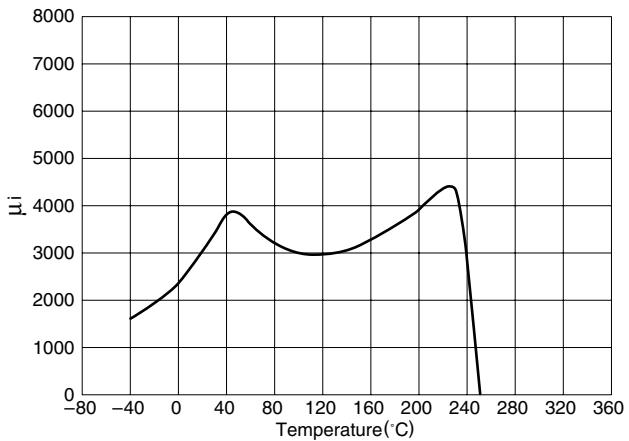
PC47



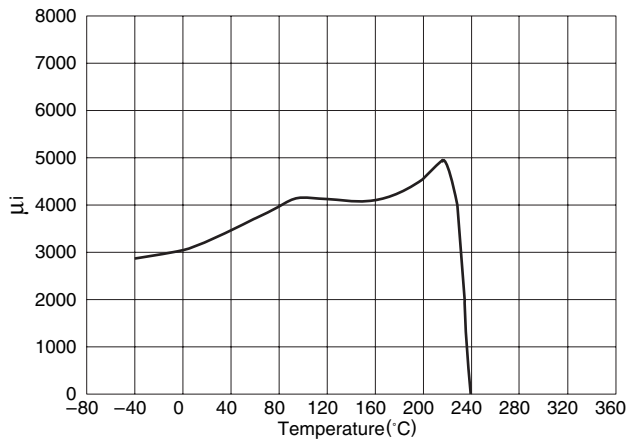
PC45



PC46



PC95



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