

## EMI Core

# EMI Material Characteristics

Characteristic	Symbol	Unit	Condition	K-70	K-100	K-150
AC initial permeability	$\mu_{iac}$	-		700	1000	1500
Saturation flux density	Bs	mT	1194A/m	240	290	280
Residual flux density	Br	mT		160	120	140
Coercivity	Hc	A/m		30	15	15
Relative loss factor	$\tan \delta / \mu i$	$\times 10^{-6}$		30	30	25
			f(MHz)	0.1	0.1	0.1
Relative temperature factor	$\alpha \mu r$	$\times 10^{-6} \%$ /°C	20°C~60°C	24	24	8
Curie temperature	Tc	°C		>140	>130	>100
Resistivity	$\rho$	$\Omega \cdot m$	25°C	$10^6$	$10^6$	$10^6$
Density	d	$\times 10^3 \text{ kg/m}^3$		$4.6 \times 10^3$	$4.8 \times 10^3$	$4.7 \times 10^3$

### Notes

1. This values were obtained with troidal core (TR25.2X16.8X8.4)
2. 1mT=10Gauss, 1A/m= $4\pi \times 10^{-3}$  Oe
3. Impedance indicate a typical value of measured ones.

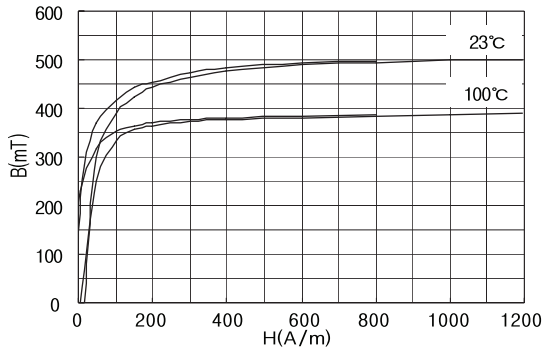
## MATERIAL CHARACTERISTICS (Power material)

Characteristic	Symbol	Unit	Condition	J2A	J2B	J2C	
AC initial permeability	$\mu_{iac}$	-		2400	2600	2300	
Saturation magnetic Flux Density (1194A/m)	Bs	mT	23°C	500	490	510	
			100°C	390	380	400	
Residual flux density	Br	mT	23°C	150	130	95	
Coercivity	Hc	A/m	23°C	14	11	14	
Core loss	Pcv	$\text{kW/m}^3$	25kHz 200mT	23°C	145	120	
				60°C	95	75	
				80°C	75	60	
				100°C	75	60	
			100kHz 200mT	23°C	820	680	650
				60°C	620	500	500
				80°C	550	440	430
				100°C	550	440	400
Curie temperature	Tc	°C		>210	>210	>230	
Resistivity	$\rho$	$\Omega \cdot m$		6	7	3	
Density	d	$\times 10^3 \text{ kg/m}^3$		4.85	4.85	4.85	

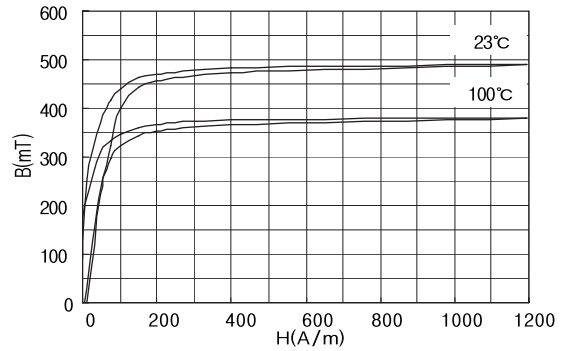
### Notes

1. This values were obtained with troidal core (TR25.2x16.8x8.4)
2. 1mT=10Gauss, 1A/m= $4\pi \times 10^{-3}$  Oe

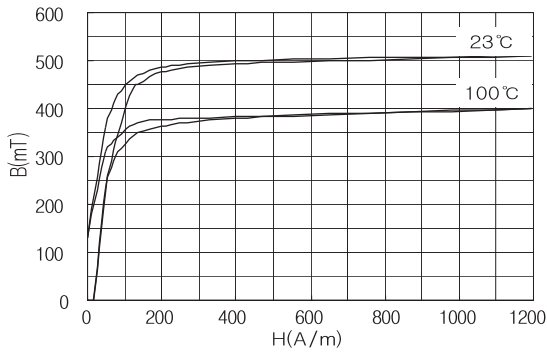
**B-H curve(J2A)**



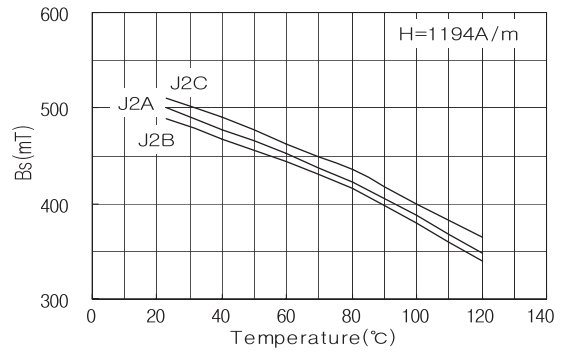
**B-H curve(J2B)**



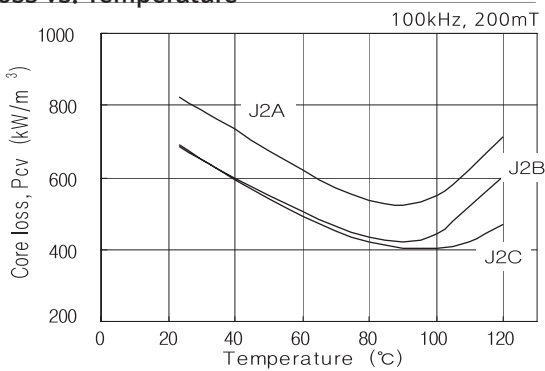
**B-H curve(J2C)**



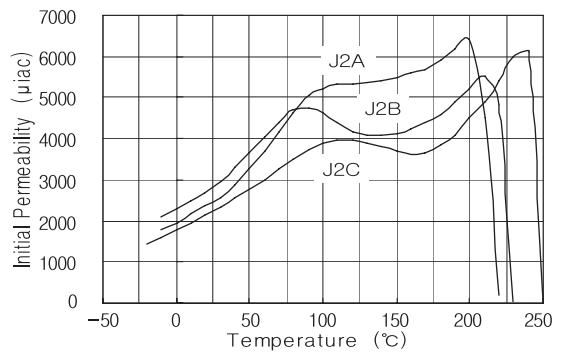
**Flux density vs. Temperature**



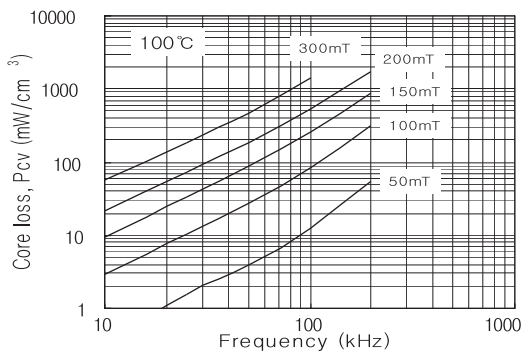
**Core loss vs. Temperature**



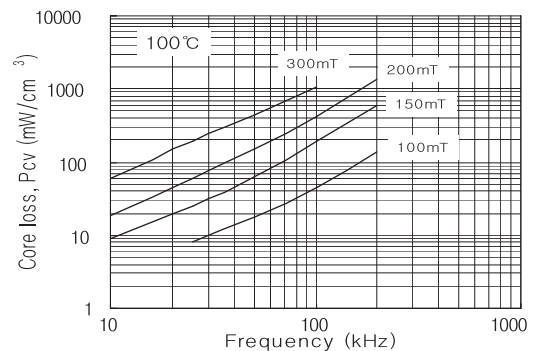
**μiac vs. Temperature**



**Pcv vs. Freq.(J2B)**



**Pcv vs. Freq.(J2C)**



## EMI Material Characteristics

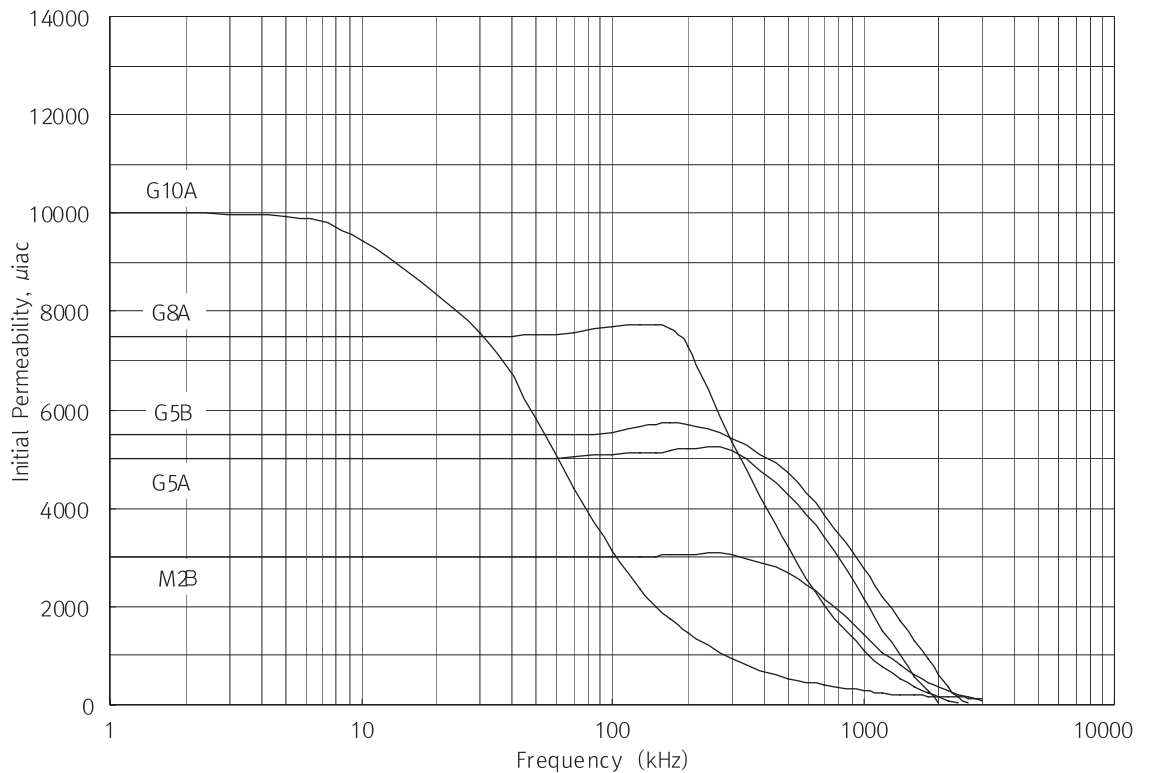
### MATERIAL CHARACTERISTICS (High $\mu$ material)

Characteristic	Symbol	Unit	Condition	M2B	G5A	G5B	G8A	G10A
AC initial permeability	$\mu_{iac}$	-		3000	5000	5500	7500	10000
Saturation magnetic Flux Density	Bs	mT	1194A/m	480	440	370	430	360
Residual magnetic Flux Density	Br	mT		180	150	70	120	100
Coercivity	Hc	A/m		10	11	5	8	3
Relative loss factor	$\tan\delta / \mu i$	$\times 10^{-6}$		<20	<20	<10	<10	<10
			f(kHz)	100	100	10	10	1
Relative temp. factor	$\alpha \mu r$	$\times 10^{-6} \%/^{\circ}\text{C}$	20 $^{\circ}\text{C}$ ~60 $^{\circ}\text{C}$		-0.5~1.5	-0.5~1.5	-0.5~1.5	-0.5~1.5
Curie temperature	Tc	$^{\circ}\text{C}$		>200	>150	>110	>110	>100
Resistivity	$\rho$	$\Omega \cdot \text{m}$		2	1	1.5	0.3	0.1
Density	d	$\times 10^3 \text{ kg/m}^3$		4.8	4.8	4.8	4.9	4.9

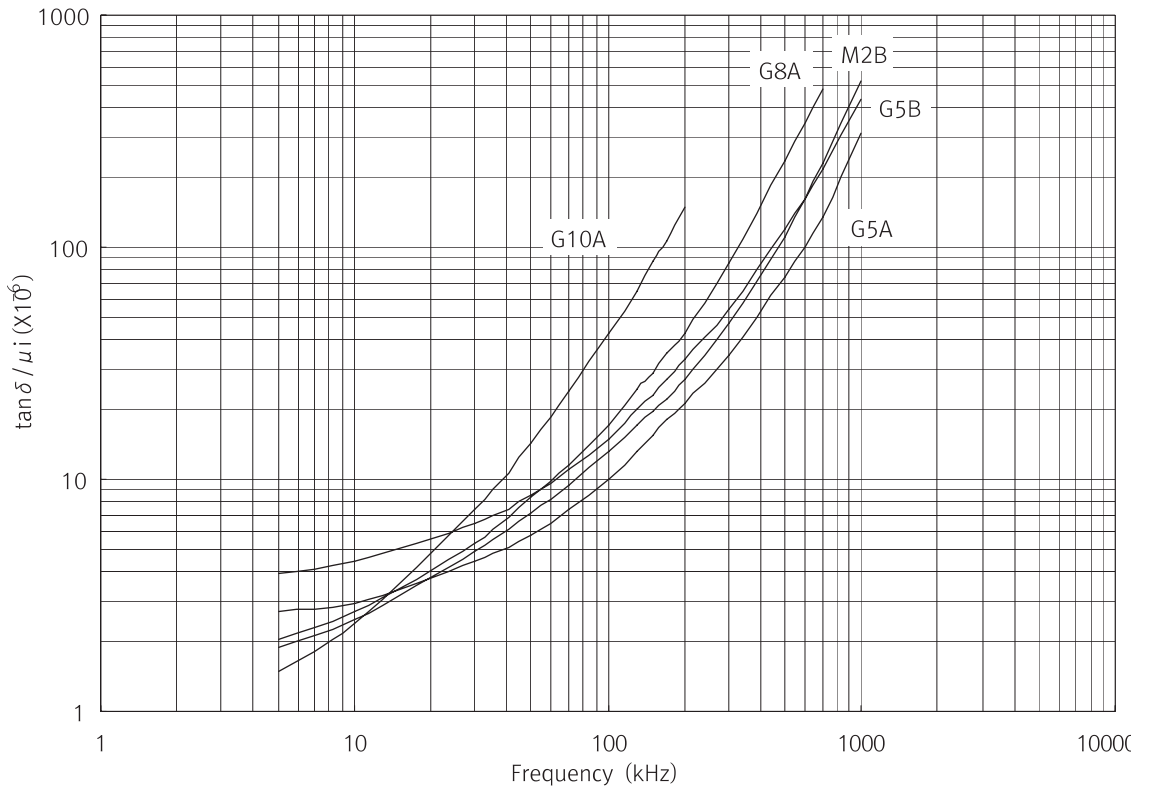
#### Notes

1. This values were obtained with toroidal core (TR 25.2x16.8x8.4)
2. 1mT=10Gauss, 1A/m=4 $\pi$   $\times 10^{-3}$  Oe

### $\mu_i$ vs. Frequency



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



$\mu_{iac}$  vs. Temperature

