MAGMENT

Magnetic Cement MC40

Preliminary Material Datasheet

Initial permeability	25°C	μ_i		**40 ± 10%**
Flux density @ H=25 kA/m (314 Oe)	25°C	B_{max}	[mT]	**350**
	100°C	B_{max}	[mT]	**290**
Coercitive field strength	25°C	H_C	[A/m]	**270**
Curie-Temperature		T_C	[°C]	**> 210**
Resistivity	DC	ρ	[Ω m]	**20**
Density		γ	[kg/m³]	**3750**
Relative loss factor	@1 MHz	$\tan\delta/\mu i$	[10^{-3}]	**< 0.4**
Relative temperature coefficient	-40°C…150°C	α_F	[10^{-6}/K]	**< 50**
Hysteresis material constant	10kHz	η_B	[10^{-6}/mT]	**< 3**
DC-Bias (percent permeability change)	@4 kA/m (50 Oe)	μ_{rev}/μ_i		**53%**
	@8kA/m (100 Oe)	μ_{rev}/μ_i		**30%**
Realtive core losses	@ 50kHz, 100mT	P_V	[kW/m³]	**300**
Specific heat		c_p	[J/kg K]	**700**
Thermal conductivity		λ	[W/mK]	**3**
Young's modulus		E_c	[MPa]	**25000**
Compressive strength		f_c	[MPa]	**20**
Tensile strength		f_t	[MPa]	**2**
Linear expansion coefficient		$\Delta l/l$	[10^{-6}/K]	**12**

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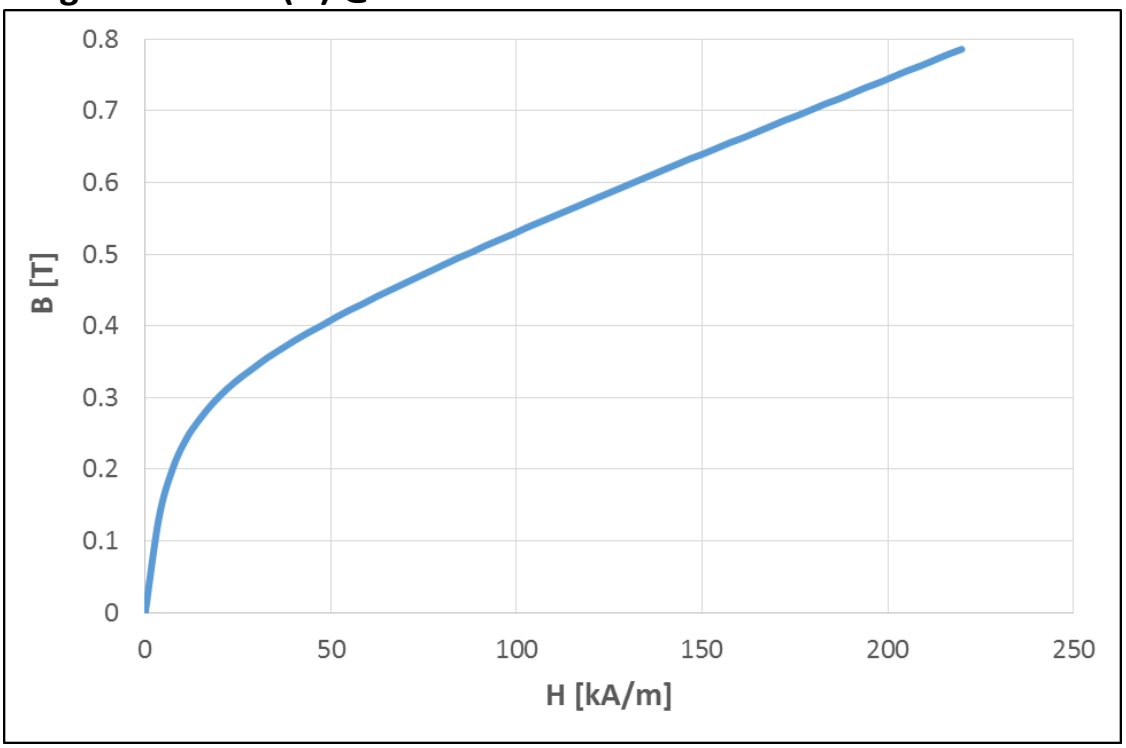
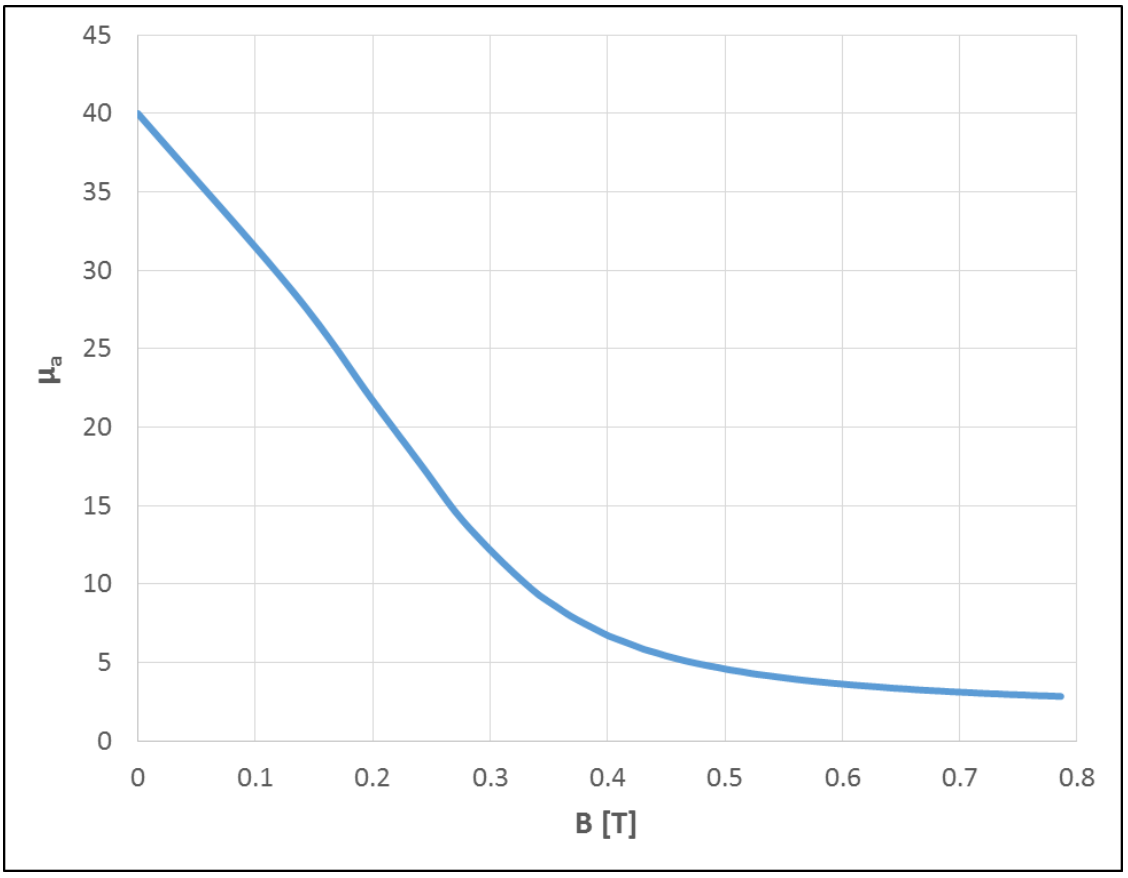
Magnetization B(H) @25°C



Amplitude Permeability µa(B) @25°C



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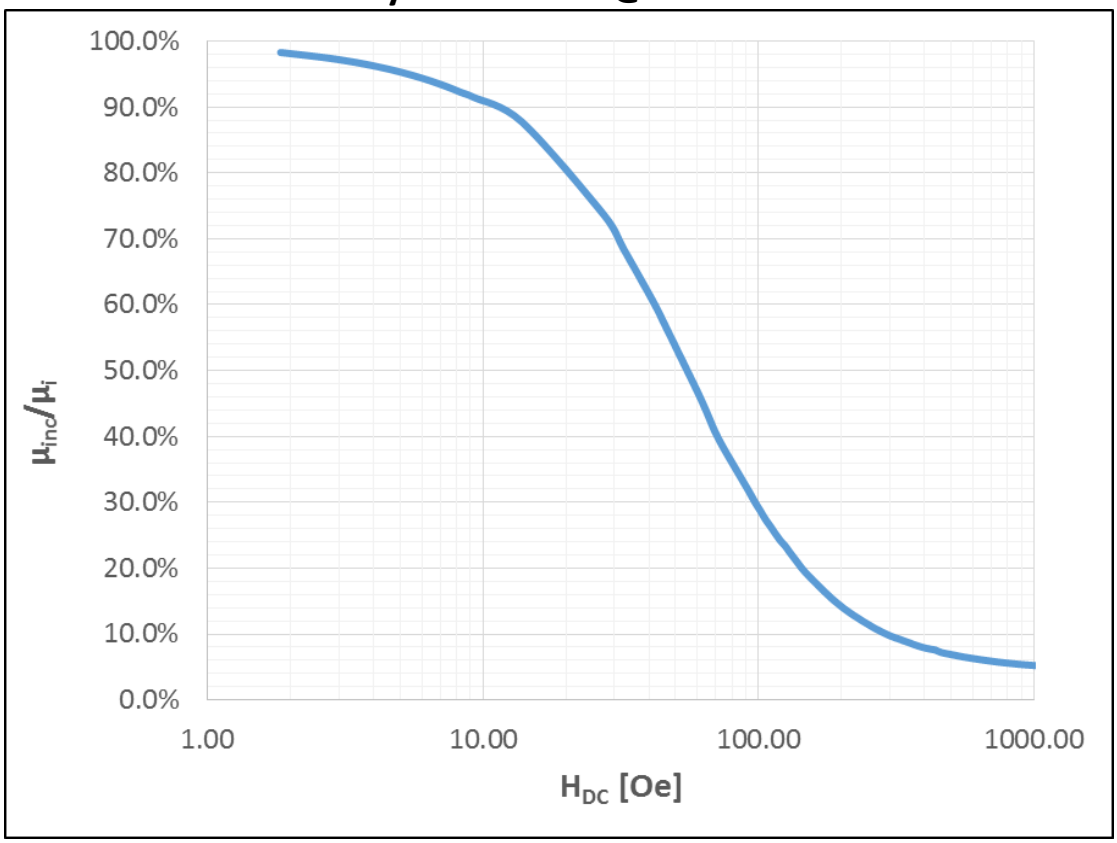
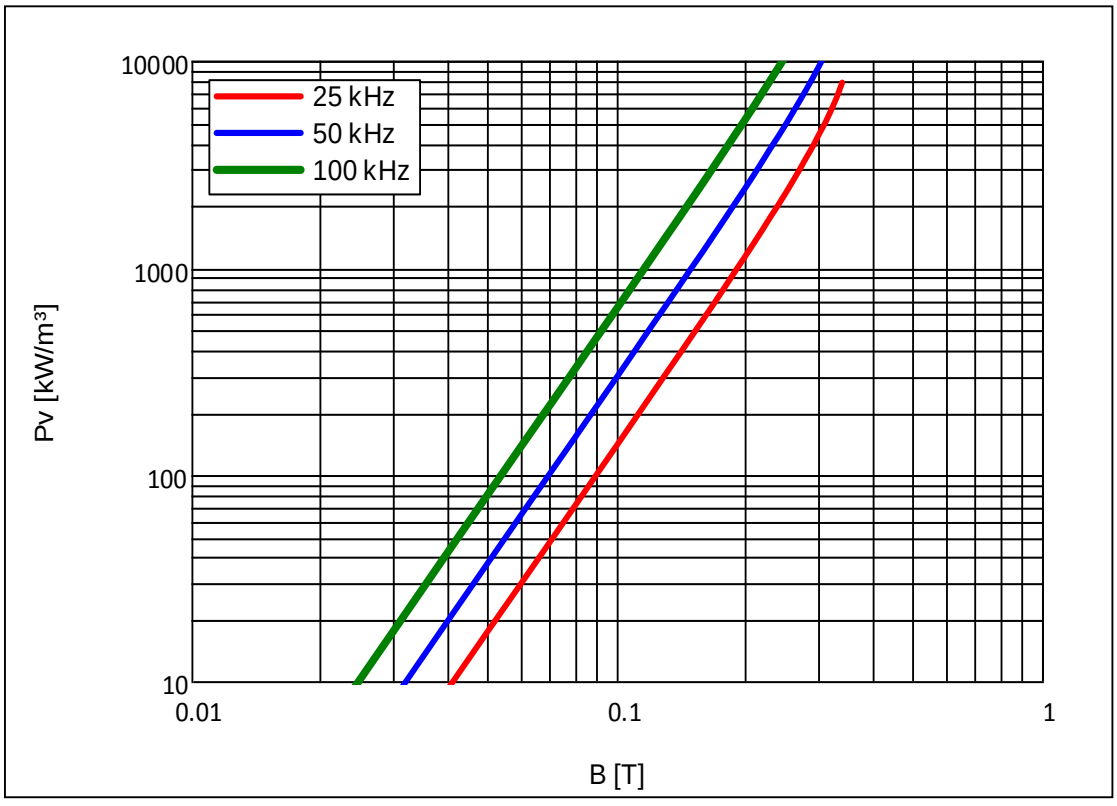
Reversible Permeability vs. DC Bias @25°C



Core Loss Density P_V (B)



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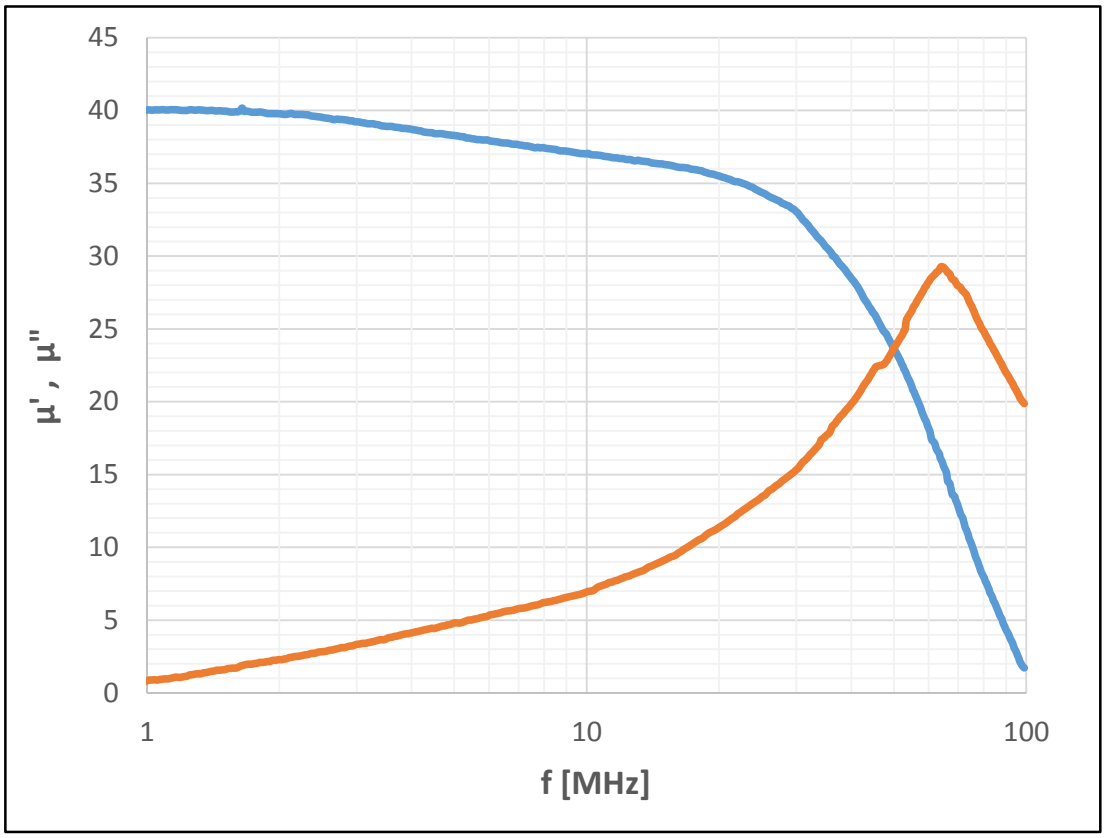
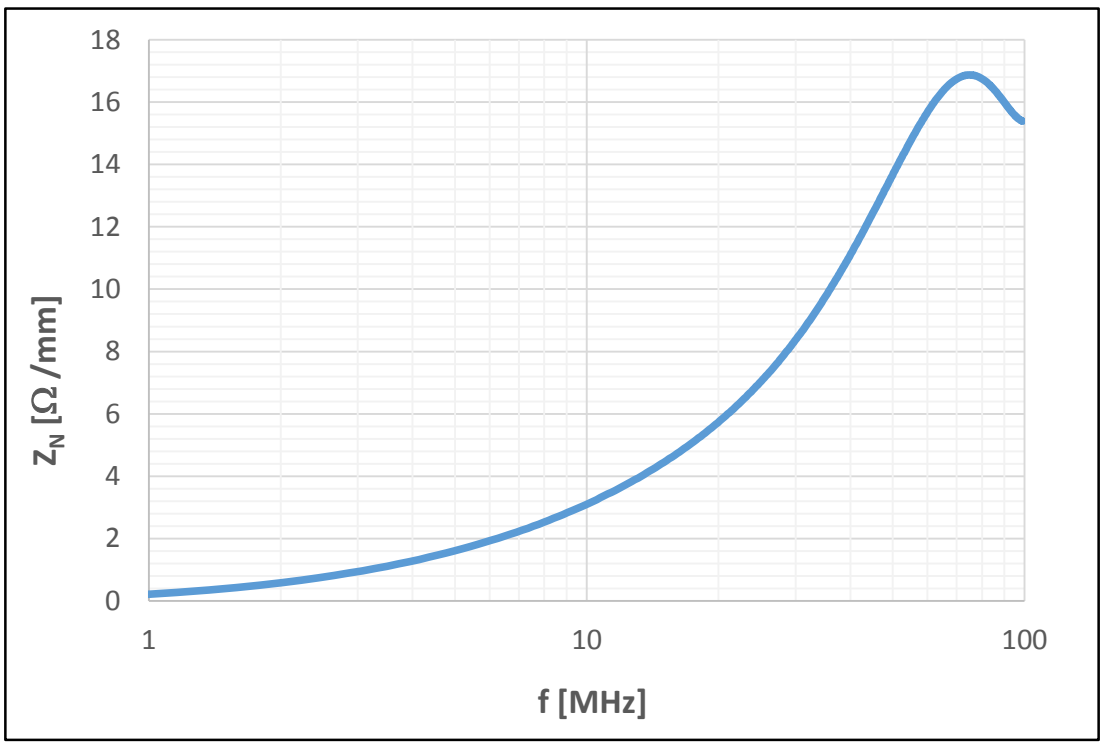
Complex Permeability vs. Frequency @25°C



Normalized Impedance vs. Frequency @25°C



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