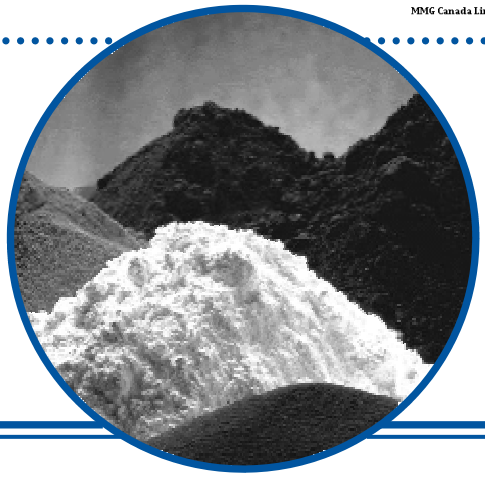
F49
Power Ferrite Material

MMG Canada Limited



Features

- **Optimized formulation for POL applications**
- **Very high saturation flux density**
- **Losses minimized from 60 to 80 ºC**

The F49 material grade was specifically designed for point-of-load inductors that require a core material with the ability to handle high saturation currents in a relatively small package size with low losses. Although its power loss density is higher than our F48 commercial grade, the improved saturation flux density makes it the material of choice for many power management applications. F49 is available in all of our standard geometries including ER, planar, RM, U, ETD and EFD cores.

Material Data

Parameter	Symbol	Standard Test Condition			Unit	Value
Initial permeability *(nominal)*	μ_i	f = 10 kHz	B < 0.1 mT	25 ºC	-	1000 ± 30%
Saturation flux density *(typical)*	B_{sat}	H = 796 A/m = 10 Oe		25 ºC 100 ºC	mT	580 480
Amplitude permeability *(nominal)*	μ_a	B = 400 mT B = 320 mT		25 ºC 100 ºC	-	1800 2000
Remanent flux density *(minimum)*	B_r	H → 0 (from near saturation) f = 10 kHz		25 ºC	mT	230
Coercivity *(typical)*	H_c	B → 0 (from near saturation) f = 10 kHz		25 ºC	A / m	25
Curie temperature *(minimum)*	T_c	f = 10 kHz	B < 0.1 mT		ºC	290
Resistivity *(typical)*	ρ	1 V/cm		25 ºC	Ω · cm	100
Total power loss density *(maximum)*	P_v	f = 25 kHz f = 50 kHz	B = 200 mT B = 200 mT	80 ºC 80 ºC	mW / cm^3	200 500

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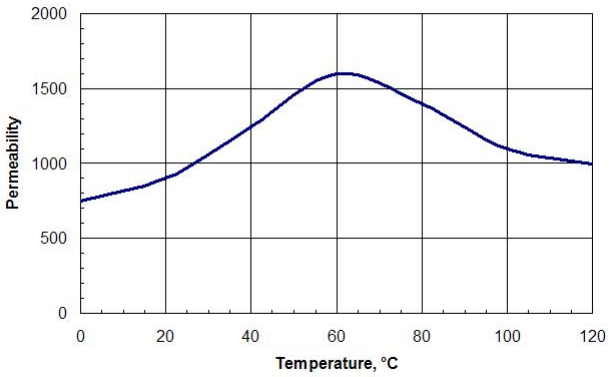
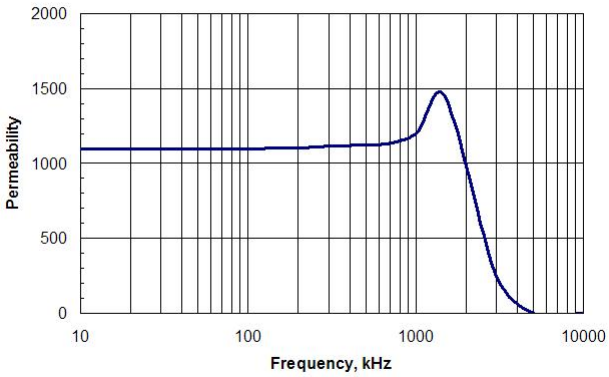
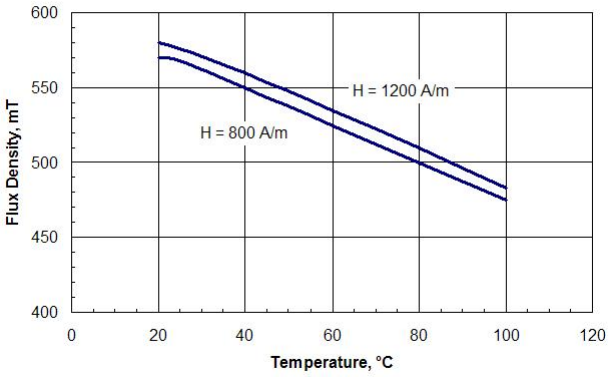
Initial Permeability vs. Temperature



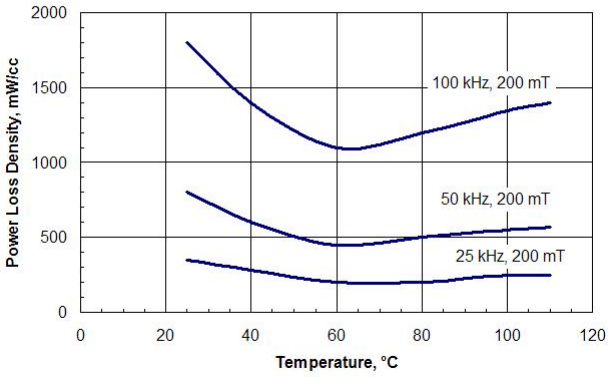
Initial Permeability vs. Frequency



Peak Flux Density vs. Temperature



Power Loss Density vs. Temperature



Applications

- **DC/DC buck converters**
- **Point-of-load (POL) modules**
- **Voltage regulator modules (VRM)**
- **POTS filter inductors for DSL**

For additional information or to discuss your specific requirements please contact a member of our Applications Engineering Team.