MF2

镁锌材料
MG-ZN MATERIALS

鐵研 TAK

MF2 为镁锌铁氧体材料（无镍配方），初始磁导率（μi）约 800，饱和磁通密度（Bs）约 270 mT（25 ℃）/ 95 mT（100 ℃），居里温度高于 130 ℃。本材料是镁锌系的高磁导支：在低频段提供与 μi≈800 纯镍锌材同级的阻抗与感量，材料成本则明显较低；矫顽力仅 16 A/m，磁滞损低，损耗因子 25×10⁻⁶（0.1 MHz）/ 50×10⁻⁶（0.5 MHz）。典型应用为电源输入端滤波器、大型共模扼流圈与低频 EMI 抑制。与同标称 μi 800 的 L43 相比，MF2 走经济取向，L43 走 EMI 特性取向（宽频抑制与双夹具阻抗数据）；MF2 于 100 ℃ 时磁通仅余约 95 mT、Tc >130 ℃，高温或带大电流的场合应改选纯镍锌档位。

MF2 is a Mg-Zn ferrite (nickel-free) with an initial permeability (μi) of approx. 800, a saturation flux density (Bs) of approx. 270 mT at 25 °C (95 mT at 100 °C) and a Curie temperature above 130 °C. It is the high-permeability branch of the Mg-Zn line: at low frequencies it delivers impedance and inductance on par with the μi ≈ 800 NiZn grades at a clearly lower material cost; with a coercivity of only 16 A/m, hysteresis loss stays low and the loss factor is 25×10⁻⁶ at 0.1 MHz / 50×10⁻⁶ at 0.5 MHz. Typical uses are mains-input filters, large common-mode chokes and low-frequency EMI suppression. Against L43 at the same nominal μi of 800, MF2 is the economy option while L43 is the EMI-characterised option (broadband suppression with dual-fixture impedance data); since only about 95 mT of flux remains at 100 °C and Tc is >130 °C, switch to the NiZn grades for hot or high-current duties.

Mains-Input Filter | Large Common-Mode Choke | Low-Frequency EMI Suppression

电磁特性 MAGNETIC CHARACTERISTICS

特性 Characteristic	条件 Condition	值 Value	单位 Unit
初始磁导率 μi Initial Permeability	100 kHz & <0.2 mT	800±25%	
饱和磁通密度 Bs Saturation Flux Density	3000 A/m · 25 ℃ 100 Hz	270	mT
饱和磁通密度 Bs Saturation Flux Density	3000 A/m · 100 ℃ 100 Hz	95	mT
残留磁通密度 Br Remanence	3000 A/m · 25 ℃ 100 Hz	125	mT
残留磁通密度 Br Remanence	3000 A/m · 100 ℃ 100 Hz	8	mT
矫顽力 Hc Coercivity	3000 A/m · 25 ℃ 100 Hz	16	A/m
矫顽力 Hc Coercivity	3000 A/m · 100 ℃ 100 Hz	6	A/m
αμr（温度系数） Temperature coefficient of permeability	20 ~ 60 ℃	15	×10⁻⁶/K
相对损耗因子 tanδ/μi Relative Loss Factor	0.1 MHz & <0.2 mT	25	×10⁻⁶
相对损耗因子 tanδ/μi Relative Loss Factor	0.5 MHz & <0.2 mT	50	×10⁻⁶
居里温度 Tc Curie Temp.	100 kHz & <0.2 mT	>130	℃
密度 D Density	阿基米德法 Archimedes method	4.85	g/cm³
电阻率 ρ Volume Resistivity	直流电流 DC Current	10^7	Ω·m

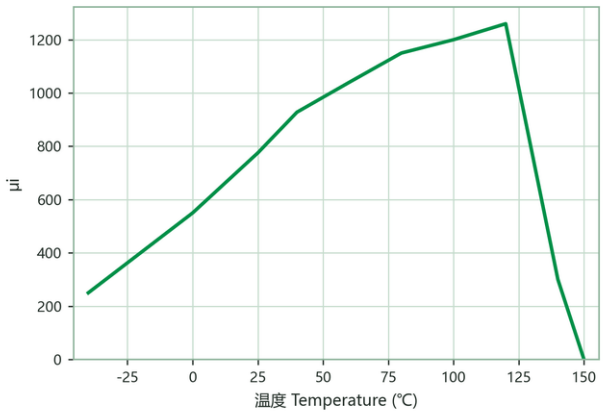
备注：各项数值均为环形磁芯T31×19×8测得的典型数值，由于几何形状和尺寸的影响，产品规格将与这些数据有所差异。

Note: all values are typical data measured on a T31×19×8 toroidal core; actual product specifications will vary with geometry and size.

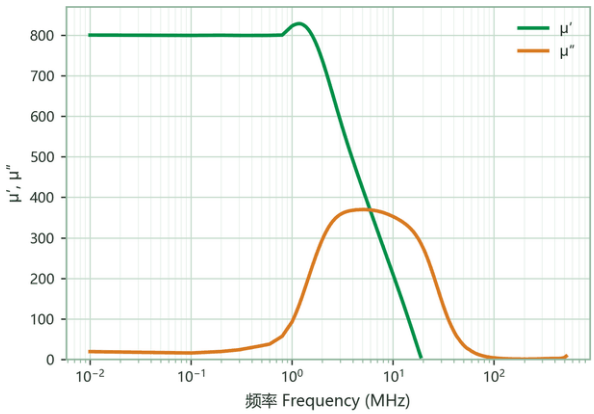
特性曲线详见次页 CHARACTERISTIC CURVES — SEE NEXT PAGE

MF2

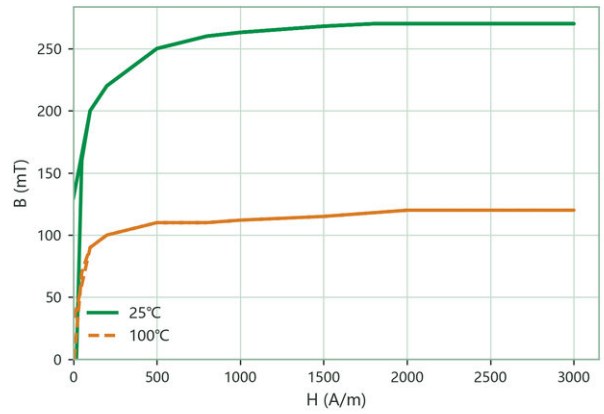
特性曲线
CHARACTERISTIC CURVES



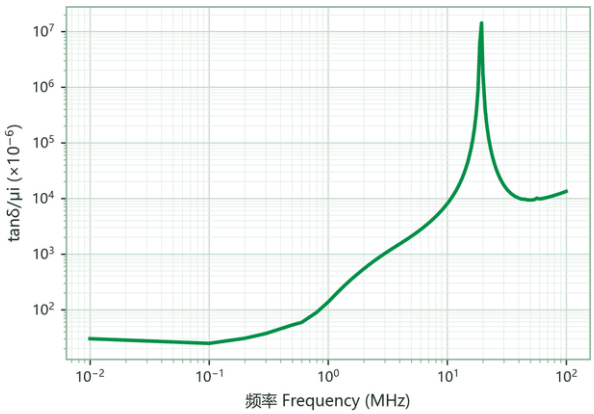
初始磁导率—温度特性
Initial Permeability vs. Temperature



复数磁导率—频率特性
Complex Permeability (μ′, μ″) vs. Frequency



静态磁化曲线
Static Magnetization Curves (B–H)



相对损耗因子—频率特性
Relative Loss Factor (tanδ/μi) vs. Frequency