MG2

镍镁锌材料
NI-MG-ZN MATERIALS

鐵研 TAK

MG2 为镍镁锌铁氧体材料，初始磁导率（μi）约 300，饱和磁通密度（Bs）约 300 mT（25 ℃）/ 190 mT（100 ℃），居里温度高于 150 ℃。本材料是镍镁锌组的常规经济档：特性在低至中频范围平稳，损耗因子约 80×10⁻⁶（0.1 MHz），适合对信号品质要求不苛刻、以成本为先的量产元件。典型应用为一般电感（choke）、低频滤波器、信号线共模滤波器与中低频变压器。与 MGB1（μi 约 350、Bs 380 mT、Tc >200 ℃、损耗低一级）相比，MG2 以特性余裕的收敛换取更低的成本；信号路径或高温场合建议升级 MGB1，纯粹的低成本低功率场合 MG2 即可胜任。

MG2 is a Ni-Mg-Zn ferrite with an initial permeability (μi) of approx. 300, a saturation flux density (Bs) of approx. 300 mT at 25 °C (190 mT at 100 °C) and a Curie temperature above 150 °C. It is the standard economy step of the Ni-Mg-Zn group: characteristics stay steady over the low-to-mid band with a loss factor of about 80×10⁻⁶ at 0.1 MHz — intended for cost-first volume parts where signal quality demands are modest. Typical uses are standard chokes, low-frequency filters, signal-line common-mode filters and low/mid-frequency transformers. Against MGB1 (μi approx. 350, Bs 380 mT, Tc >200 °C, one class lower in loss), MG2 trades property margin for a lower cost; upgrade to MGB1 for signal paths or hot environments, while MG2 fully serves plain low-cost, low-power duties.

Standard Choke | Low-Frequency Filter | Common-Mode Filter | Low/Mid-Frequency Transformer

电磁特性 MAGNETIC CHARACTERISTICS

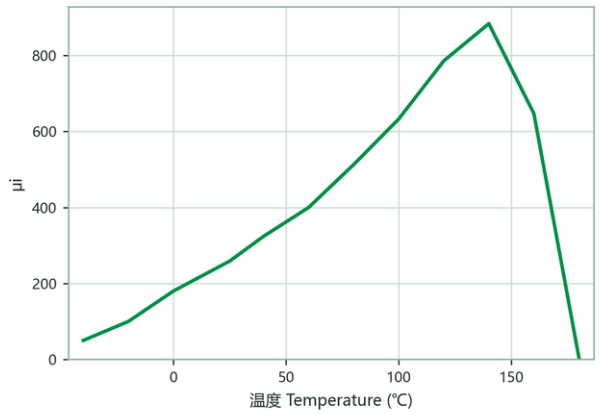
特性 Characteristic	条件 Condition	值 Value	单位 Unit
初始磁导率 μi Initial Permeability	100 kHz & <0.2 mT	300±25%	
饱和磁通密度 Bs Saturation Flux Density	3000 A/m · 25 ℃ 100 Hz	300	mT
饱和磁通密度 Bs Saturation Flux Density	3000 A/m · 100 ℃ 100 Hz	190	mT
残留磁通密度 Br Remanence	3000 A/m · 25 ℃ 100 Hz	175	mT
残留磁通密度 Br Remanence	3000 A/m · 100 ℃ 100 Hz	85	mT
矫顽力 Hc Coercivity	3000 A/m · 25 ℃ 100 Hz	25	A/m
矫顽力 Hc Coercivity	3000 A/m · 100 ℃ 100 Hz	15	A/m
αμr（温度系数） Temperature coefficient of permeability	20 ~ 60 ℃	9	$\times10^{-6}$/K
相对损耗因子 tanδ/μi Relative Loss Factor	0.1 MHz & <0.2 mT	80	$\times10^{-6}$
相对损耗因子 tanδ/μi Relative Loss Factor	0.5 MHz & <0.2 mT	70	$\times10^{-6}$
居里温度 Tc Curie Temp.	100 kHz & <0.2 mT	>150	℃
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.

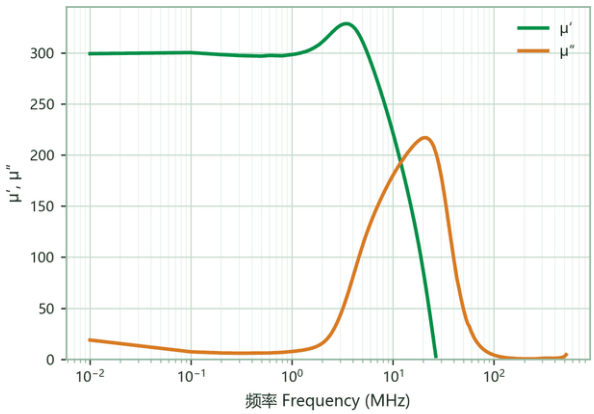
特性曲线详见次页 CHARACTERISTIC CURVES — SEE NEXT PAGE

MG2

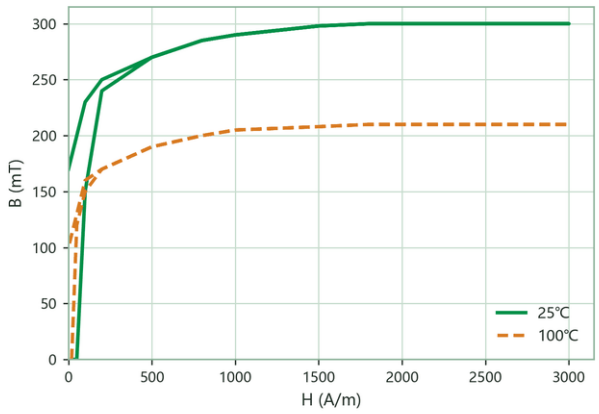
特性曲线
CHARACTERISTIC CURVES



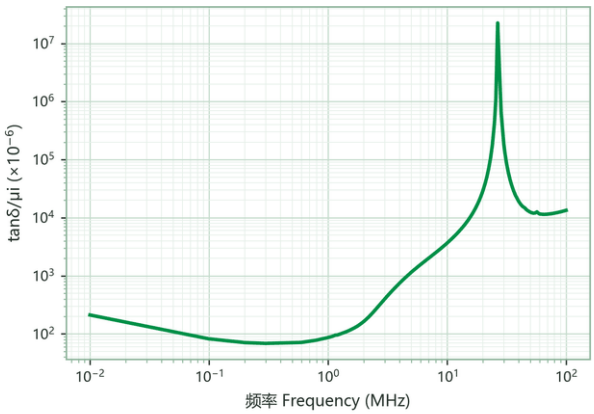
初始磁导率—温度特性
Initial Permeability vs. Temperature



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