鐵研 TAK

M61H

高频稳定材料
HIGH FREQUENCY STABLE MATERIALS

M61H 为镍锌铁氧体材料，初始磁导率（μi）约 100，饱和磁通密度（Bs）约 420 mT（25 ℃）/ 370 mT（100 ℃），居里温度高于 280 ℃。与 M61 同一磁导率档位，但把饱和磁通推到 420 mT、100 ℃ 仍保有 370 mT——高频电感在大电流偏置下的磁通余裕因此大幅增加；损耗因子 50×10^{-6}（1.0 / 5.0 MHz）维持低位，功率条件下的损耗表现同样出色。典型应用为大电流高频电感、无线充电线圈与耐高温的射频功率滤波器。与 M61 的分工：M61 温度系数近零（约 -2×10^{-6}/K），适合对感量漂移敏感的滤波与调谐；M61H 以稍高的温度系数（约 15×10^{-6}/K）与略低的居里温度（>280 ℃ 对 >300 ℃），换取全族最高一级的磁通承载——带功率的场合选 M61H。

M61H is a NiZn ferrite with an initial permeability (μi) of approx. 100, a saturation flux density (Bs) of approx. 420 mT at 25 °C (370 mT at 100 °C) and a Curie temperature above 280 °C. It shares M61's permeability step but pushes the saturation flux to 420 mT with 370 mT retained at 100 °C — greatly enlarging the flux margin of HF inductors under heavy DC bias; the loss factor stays low at 50×10^{-6} (1.0 and 5.0 MHz), so loss behaviour under power is equally strong. Typical uses are high-current HF inductors, wireless-charging coils and high-temperature RF power filters. Division of labour with M61: M61's near-zero temperature coefficient (approx. -2×10^{-6}/K) suits drift-sensitive filtering and tuning; M61H accepts a slightly higher coefficient (approx. 15×10^{-6}/K) and a slightly lower Curie point (>280 °C vs >300 °C) in exchange for the family's highest flux capability — choose M61H wherever power flows.

High-Current HF Inductor | Wireless Charging Coil | RF Power Filter

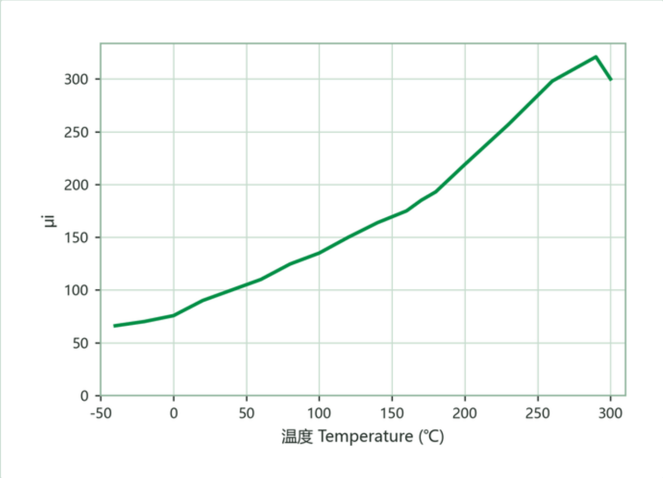
电磁特性 MAGNETIC CHARACTERISTICS

特性 Characteristic	条件 Condition	值 Value	单位 Unit
初始磁导率 μi Initial Permeability	100 kHz & <0.2 mT	100±25%	
饱和磁通密度 Bs Saturation Flux Density	3000 A/m · 25 ℃ 100 Hz	420	mT
饱和磁通密度 Bs Saturation Flux Density	3000 A/m · 100 ℃ 100 Hz	370	mT
残留磁通密度 Br Remanence	3000 A/m · 25 ℃ 100 Hz	255	mT
残留磁通密度 Br Remanence	3000 A/m · 100 ℃ 100 Hz	195	mT
矫顽力 Hc Coercivity	3000 A/m · 25 ℃ 100 Hz	105	A/m
矫顽力 Hc Coercivity	3000 A/m · 100 ℃ 100 Hz	95	A/m
αμr（温度系数） Temperature coefficient of permeability	20 ~ 60 ℃	15	$\times10^{-6}$/K
相对损耗因子 tanδ/μi Relative Loss Factor	1.0 MHz & <0.2 mT	50	$\times10^{-6}$
相对损耗因子 tanδ/μi Relative Loss Factor	5.0 MHz & <0.2 mT	50	$\times10^{-6}$
居里温度 Tc Curie Temp.	100 kHz & <0.2 mT	>280	℃
密度 D Density	阿基米德法 Archimedes method	5.0	g/cm^3
电阻率 ρ Volume Resistivity	直流电流 DC Current	10^7	Ω·m

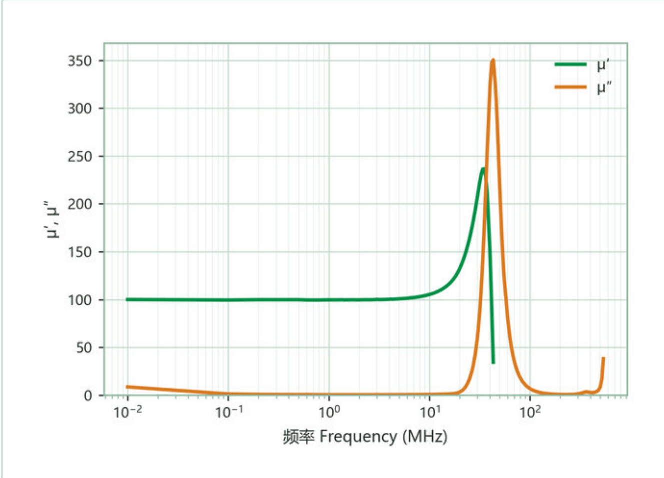
备注：各项数值均为环形磁芯T31×19×8测得的典型数值，由于几何形状和尺寸的影响，产品规格将与这些数据有所差异。
Note: all values are typical data measured on a T31×19×8 toroidal core; actual product specifications will vary with geometry and size.

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

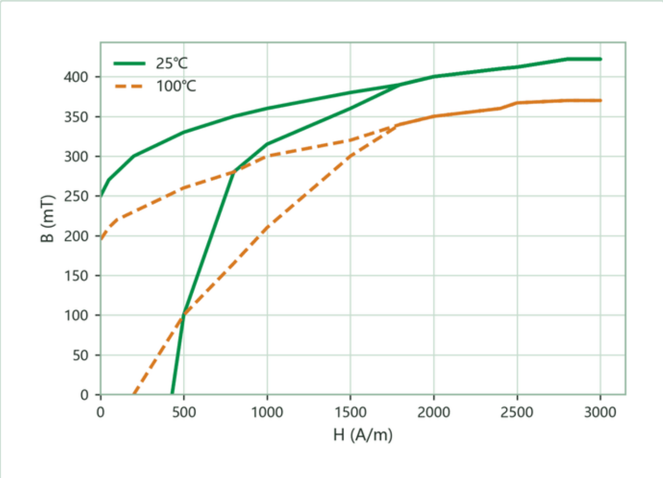
M61H 特性曲线 CHARACTERISTIC CURVES



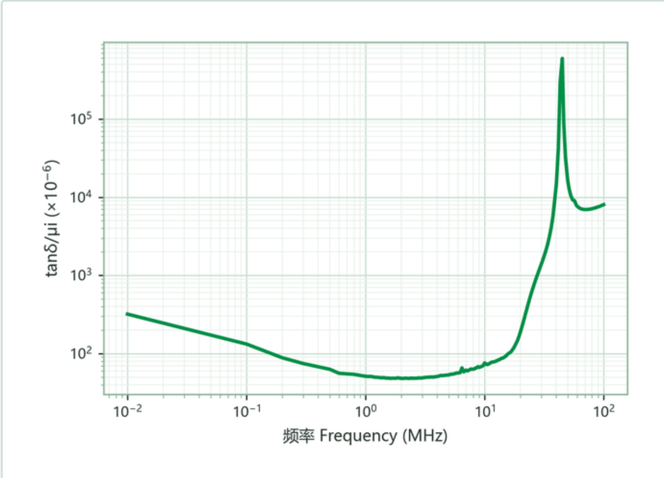
初始磁导率—温度特性
Initial Permeability vs. Temperature



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