L22A

高磁导EMI材料
HIGH PERM. & EMI MATERIALS

鐵研 TAK

L22A 为镍锌铁氧体材料，初始磁导率（μi）约 2200，饱和磁通密度（Bs）约 270 mT（25 ℃）/ 180 mT（80 ℃），居里温度高于 90 ℃。高 μi 使其在百 kHz 级的低频段即具高阻抗，矫顽力仅约 9 A/m、磁滞损很低，市电输入端与大型共模电感可在低频取得有效衰减；损耗因子 20×10^{-6}（0.1 MHz）/ 35×10^{-6}（0.3 MHz）。典型应用为低频 EMI 抑制、电源输入端滤波器与大型共模电感。本材料居里温度高于 90 ℃，属 L 系温度上限较低的一端，适用于室温至中温环境；工作温度较高或需要更宽频带时往 L8A、L6A、L43 方向优先选择。与 L28A（μi 约 2800）为相邻档位，两者标称 μi 差在 ±25% 公差带内互有重叠，依低频阻抗需求与温度裕度择一即可。

L22A is a NiZn ferrite with an initial permeability (μi) of approx. 2200, a saturation flux density (Bs) of approx. 270 mT at 25 °C (180 mT at 80 °C) and a Curie temperature above 90 °C. The high μi provides high impedance already in the hundreds-of-kHz range, and the coercivity of only about 9 A/m keeps hysteresis loss very low, giving mains-input filters and large common-mode inductors effective low-frequency attenuation; the loss factor is 20×10^{-6} at 0.1 MHz / 35×10^{-6} at 0.3 MHz. Typical uses are low-frequency EMI suppression, mains-input filters and large common-mode inductors. With its Curie temperature above 90 °C it belongs to the cooler end of the L family — suited to room-to-moderate temperatures; prefer L8A, L6A or L43 when the operating temperature or bandwidth demands more. L28A (μi approx. 2800) is the adjacent step — the nominal difference lies within the ±25 % tolerance overlap, so choose by low-frequency impedance need and temperature margin.

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

电磁特性 MAGNETIC CHARACTERISTICS

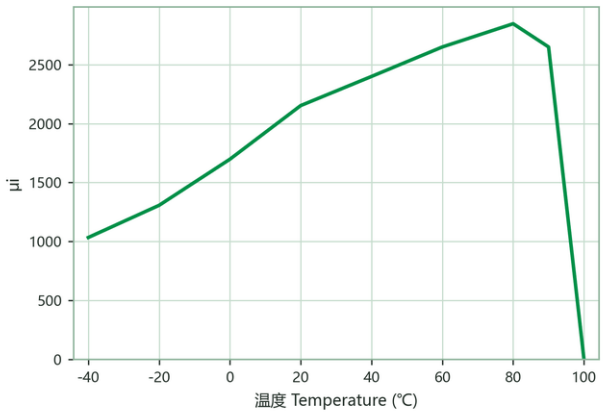
特性 Characteristic	条件 Condition	值 Value	单位 Unit
初始磁导率 μi Initial Permeability	100 kHz & <0.2 mT	2200±25%	
饱和磁通密度 Bs Saturation Flux Density	3000 A/m · 25 ℃ 100 Hz	270	mT
饱和磁通密度 Bs Saturation Flux Density	3000 A/m · 80 ℃ 100 Hz	180	mT
残留磁通密度 Br Remanence	3000 A/m · 25 ℃ 100 Hz	110	mT
残留磁通密度 Br Remanence	3000 A/m · 80 ℃ 100 Hz	52	mT
矫顽力 Hc Coercivity	3000 A/m · 25 ℃ 100 Hz	9	A/m
矫顽力 Hc Coercivity	3000 A/m · 80 ℃ 100 Hz	8	A/m
αμr（温度系数） Temperature coefficient of permeability	20 ~ 60 ℃	8	$\times10^{-6}$/K
相对损耗因子 tanδ/μi Relative Loss Factor	0.1 MHz & <0.2 mT	20	$\times10^{-6}$
相对损耗因子 tanδ/μi Relative Loss Factor	0.3 MHz & <0.2 mT	35	$\times10^{-6}$
居里温度 Tc Curie Temp.	100 kHz & <0.2 mT	>90	℃
密度 D Density	阿基米德法 Archimedes method	5.0	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.

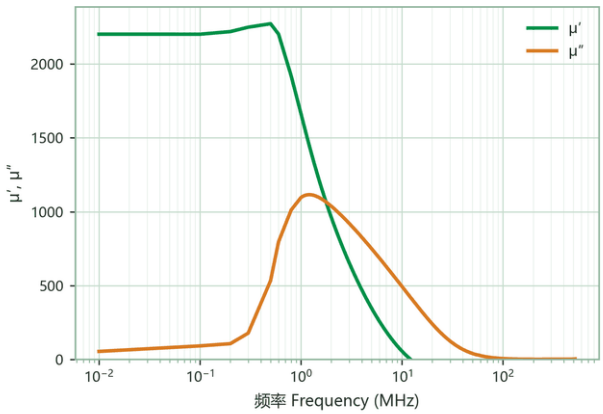
特性曲线详见次页 CHARACTERISTIC CURVES — SEE NEXT PAGE

L22A

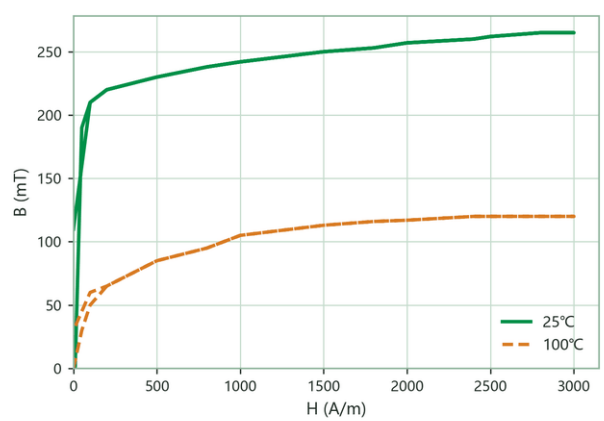
特性曲线
CHARACTERISTIC CURVES



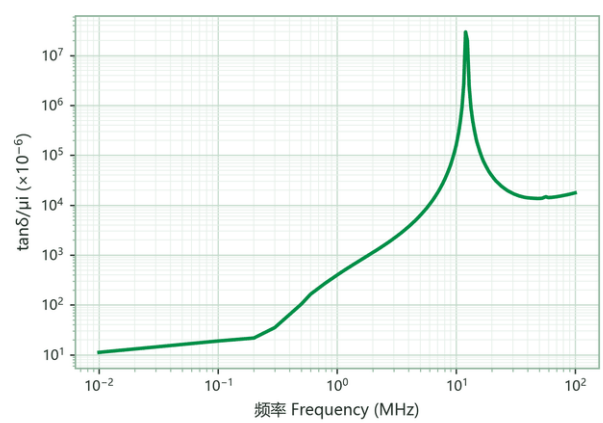
初始磁导率—温度特性
Initial Permeability vs. Temperature



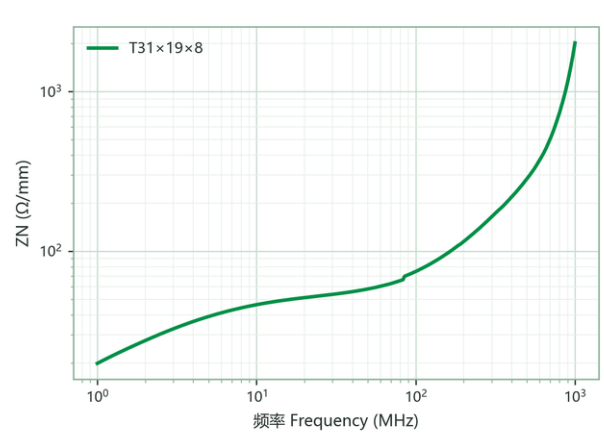
复数磁导率—频率特性
Complex Permeability (μ′, μ″) vs. Frequency



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



标准化阻抗—频率特性（Φ0.5 mm 漆包线 100 mm · 单圈测量）
Normalized Impedance ZN vs. Frequency (single turn of Φ0.5 mm wire, 100 mm long)