L28A

高磁导EMI材料

HIGH PERM. & EMI MATERIALS

鐵研 TAK

L28A 为镍锌铁氧体材料，初始磁导率（μi）约 2800，为本册 NiZn 各材质之最，饱和磁通密度（Bs）约 250 mT（25 ℃）/ 160 mT（80 ℃），居里温度高于 80 ℃。最高的磁导率带来 L 系最高的低频阻抗——在数百 kHz 的传导噪声频段可用最少匝数达标；矫顽力仅约 8 A/m，磁滞损极低。高电阻率与长期稳定性使其适合通信线路的持续抑制。典型应用为低频 EMI 滤波器、信号线共模电感与电源输入端抑制。本材料居里温度高于 80 ℃，为全系最低，适用于室温环境；温升明显或高温环境应改选 L22A 以下档位。与 L22A 为相邻档位（标称 μi 2800 对 2200，公差带互有重叠）：需要最高低频阻抗时选 L28A，需要多一分温度裕度时选 L22A。

L28A is a NiZn ferrite with an initial permeability (μi) of approx. 2800 — the highest of the NiZn grades in this volume — a saturation flux density (Bs) of approx. 250 mT at 25 °C (160 mT at 80 °C) and a Curie temperature above 80 °C. The highest permeability yields the L family's highest low-frequency impedance, meeting conducted-noise targets in the hundreds-of-kHz range with the fewest turns; the coercivity of only about 8 A/m keeps hysteresis loss minimal, and the high resistivity and long-term stability sustain suppression on communication lines. Typical uses are low-frequency EMI filters, signal-line common-mode inductors and power-inlet suppression. Its Curie temperature, above 80 °C, is the lowest of the family — intended for room-temperature environments; move to L22A or below where self-heating or ambient temperature is significant. L22A is the adjacent step (nominal μi 2800 vs 2200, with overlapping tolerance bands): pick L28A for maximum low-frequency impedance, L22A for extra temperature margin.

Low-Frequency EMI Filter | Signal-Line Common-Mode Inductor | Power-Inlet 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	2800±25%	
饱和磁通密度 Bs Saturation Flux Density	3000 A/m · 25 ℃ 100 Hz	250	mT
饱和磁通密度 Bs Saturation Flux Density	3000 A/m · 80 ℃ 100 Hz	160	mT
残留磁通密度 Br Remanence	3000 A/m · 25 ℃ 100 Hz	100	mT
残留磁通密度 Br Remanence	3000 A/m · 80 ℃ 100 Hz	50	mT
矫顽力 Hc Coercivity	3000 A/m · 25 ℃ 100 Hz	8	A/m
矫顽力 Hc Coercivity	3000 A/m · 80 ℃ 100 Hz	7	A/m
αμr（温度系数） Temperature coefficient of permeability	20 ~ 60 ℃	6	$\times10^{-6}$/K
相对损耗因子 tanδ/μi Relative Loss Factor	0.1 MHz & <0.2 mT	25	$\times10^{-6}$
相对损耗因子 tanδ/μi Relative Loss Factor	0.3 MHz & <0.2 mT	40	$\times10^{-6}$
居里温度 Tc Curie Temp.	100 kHz & <0.2 mT	>80	℃
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

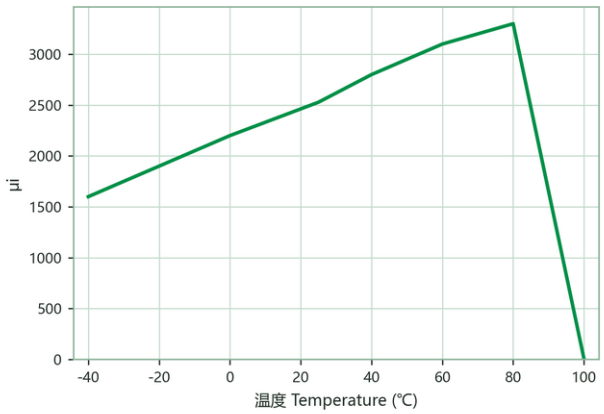
备注：各项数值均为环形磁芯T31×19×8测得的典型数值，由于几何形状和尺寸的影响，产品规格将与这些数据有所差异。

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

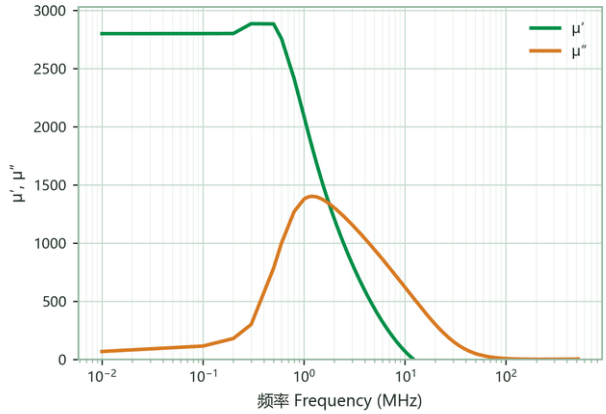
特性曲线详见次页 CHARACTERISTIC CURVES — SEE NEXT PAGE

L28A

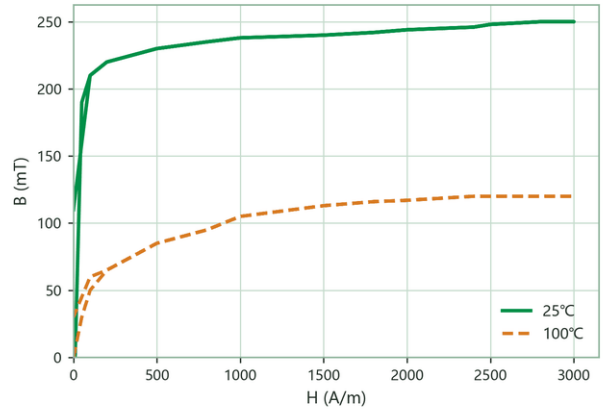
特性曲线
CHARACTERISTIC CURVES



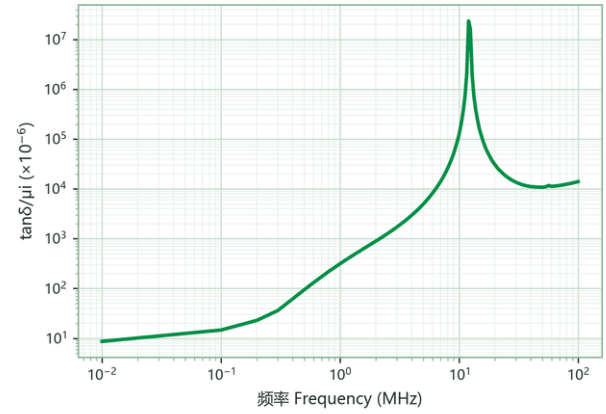
初始磁导率—温度特性
Initial Permeability vs. Temperature



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