

T06 高磁导率信号材料
HIGH-PERMEABILITY SIGNAL FERRITE

T06 为高磁导率锰锌铁氧体，初始磁导率 (μ_i) 6000，饱和磁通密度 (B_s) 380 mT (25 °C) / 200 mT (100 °C)，居里温度高于 140 °C。比 T05 高两成的 μ_i 让同一感量少绕两成匝数，磁导率温度因子 α_f 低于 1.0×10^{-6} 、磁滞常数 η_B 0.3×10^{-6} /mT，感量与失真随温度的漂移都小；100 °C 矫顽力 (H_c) 8 A/m、残留磁通密度 (B_r) 90 mT。代价是 100 °C 时 200 mT 的 B_s 为族内最低，只适合低磁通的信号路径，不宜承受直流偏磁。典型应用为信号与宽频变压器、电流互感器、宽频电感与信号滤波电感。在高磁导率族中，T06 是 T05 与 T07 之间的阶梯：需要脉冲级磁通摆幅或 100 °C 以上的裕度时退回 T05 (100 °C B_s 310 mT)；精密互感器要更紧的 α_f 与更低的 η_B 选 T07；共模阻抗优先选 T10 / T12。以感量需求定 μ_i ，再以 B_s 与 T_c 反查是否过热或过磁。

T06 is a high-permeability MnZn ferrite with an initial permeability (μ_i) of 6000, a saturation flux density (B_s) of 380 mT at 25 °C (200 mT at 100 °C) and a Curie temperature above 140 °C. A μ_i 20 % above T05 saves 20 % of the turns for the same inductance, while a permeability temperature factor α_f below 1.0×10^{-6} and a hysteresis constant η_B of 0.3×10^{-6} /mT keep inductance and distortion drift small; at 100 °C coercivity (H_c) is 8 A/m and remanence (B_r) 90 mT. The trade-off is the family's lowest B_s at 100 °C, 200 mT, which limits it to low-flux signal paths without DC bias. Typical uses are signal and wideband transformers, current transformers, wideband inductors and signal-filter inductors. Within the high-permeability family T06 is the step between T05 and T07: fall back to T05 (B_s 310 mT at 100 °C) for pulse-level flux swing or margin above 100 °C, choose T07 for a tighter α_f and lower η_B in precision current transformers, T10/T12 when common-mode impedance comes first. Set μ_i by the inductance required, then check B_s and T_c for over-temperature or over-flux.

- Signal Transformer
- Wideband Transformer
- Current Transformer
- Signal-Filter Inductor

电磁特性 MAGNETIC CHARACTERISTICS

特性 Characteristic	条件 Condition	25 °C	100 °C	单位 Unit
初始磁导率 Initial Permeability μ_i	100 kHz & <0.2 mT	6000±25%		
饱和磁通密度 Saturation Flux Density B_s	1200 A/m 50 Hz	380	200	mT
残留磁通密度 Remanence B_r	1200 A/m 50 Hz	140	90	mT
矫顽力 Coercivity H_c	1200 A/m 50 Hz	10	8	A/m
相对损耗因子 Loss Factor	100 kHz	<15		10^{-6}
磁滞常数 Hysteresis Constant η_B	10 kHz 1.5-3.0 mT	0.3		10^{-6} /mT
温度系数 Temperature Factor α_f	100 kHz & <0.2 mT	<1.0		10^{-6}
居里温度 Curie Temperature T_c	100 kHz & <0.2 mT	>140		°C
密度 Density D	阿基米德法 Archimedes method	4.9		g/cm ³
电阻率 Electrical Resistivity ρ	直流电流 DC Current	0.6		$\Omega \cdot m$

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T06

特性曲线

CHARACTERISTIC CURVES

