# T05

## 高磁导率高饱和材料
HIGH-PERMEABILITY HIGH-FLUX FERRITE

T05 为高磁导率高饱和锰锌铁氧体，初始磁导率（μi）5000，饱和磁通密度（Bs）450 mT（25 ℃）/ 310 mT（100 ℃），居里温度高于 150 ℃。在高磁导率族中它的 Bs 与 Tc 最高——100 ℃ 仍有 310 mT，比 T06 / T12 多出 100 mT 以上——搭配族内最低的 100 kHz 相对损耗因子（低于 $6\times10^{-6}$）、磁滞常数 ηB $0.3\times10^{-6}$/mT 与 8 A/m 的 100 ℃ 矫顽力（Hc），既能承受脉冲变压器的较大磁通摆幅，又保有信号变压器要求的低失真。典型应用为宽频与脉冲信号变压器、电流互感器、栅极驱动隔离变压器与电源输入端共模扼流圈。在高磁导率族中，T05 是耐温与 Bs 兼顾的通用基准：只需感量、磁通很低时往 T06 / T07 走（μi 6000 / 7000）；最高共模阻抗选 T10 / T12；电阻率与带宽优先时选 E02。μi 5000 在族内属中段，换取的是最宽的温度与磁通工作窗。

T05 is a high-permeability high-flux MnZn ferrite with an initial permeability (μi) of 5000, a saturation flux density (Bs) of 450 mT at 25 °C (310 mT at 100 °C) and a Curie temperature above 150 °C. It has the highest Bs and Tc in the high-permeability family — 310 mT remain at 100 °C, over 100 mT more than T06/T12 — together with the family's lowest relative loss factor at 100 kHz (below $6\times10^{-6}$), a hysteresis constant ηB of $0.3\times10^{-6}$/mT and a coercivity (Hc) of 8 A/m at 100 °C, so it carries the larger flux swing of a pulse transformer while keeping the low distortion a signal transformer demands. Typical uses are wideband and pulse signal transformers, current transformers, gate-drive isolation transformers and mains-input common-mode chokes. Within the high-permeability family T05 is the general-purpose baseline balancing temperature and Bs: move to T06/T07 (μi 6000/7000) when only inductance matters at very low flux, T10/T12 for the highest common-mode impedance, E02 when resistivity and bandwidth come first. Its μi of 5000 is mid-range for the family; what it buys is the widest temperature and flux window.

Wideband / Pulse Transformer | Current Transformer | Gate-Drive Isolation Transformer | Common-Mode Choke

## 电磁特性 MAGNETIC CHARACTERISTICS

| 特性 Characteristic | 条件 Condition | 25 ℃ | 100 ℃ | 单位 Unit |
|---|---|---|---|---|
| 初始磁导率 Initial Permeability μi | 100 kHz & <0.2 mT | 5000±25% | | |
| 饱和磁通密度 Saturation Flux Density Bs | 1200 A/m 50 Hz | 450 | 310 | mT |
| 残留磁通密度 Remanence Br | 1200 A/m 50 Hz | 120 | 90 | mT |
| 矫顽力 Coercivity Hc | 1200 A/m 50 Hz | 10 | 8 | A/m |
| 相对损耗因子 Loss Factor | 100 kHz | <6 | | $10^{-6}$ |
| 磁滞常数 Hysteresis Constant ηB | 10 kHz 1.5-3.0 mT | 0.3 | | $10^{-6}$/mT |
| 温度系数 Temperature Factor αf | 100 kHz & <0.2 mT | <1.5 | | $10^{-6}$ |
| 居里温度 Curie Temperature Tc | 100 kHz & <0.2 mT | >150 | | ℃ |
| 密度 Density D | 阿基米德法 Archimedes method | 4.9 | | g/cm³ |
| 电阻率 Electrical Resistivity ρ | 直流电流 DC Current | 1.0 | | Ω·m |

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## 特性曲线
CHARACTERISTIC CURVES