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 ℃。于高磁导率系列中，其 Bs 与居里温度最高——100 ℃ 仍有 310 mT，较 T06 / T12 高 100 mT 以上——并具系列内最低之 100 kHz 相对损耗因子（低于 6×10^{-6}）、磁滞常数 ηB 0.3×10^{-6}/mT 与 8 A/m 之 100 ℃ 矫顽力（Hc），既可承受脉冲变压器之较大磁通摆幅，亦符合信号变压器之低失真要求。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。于高磁导率系列中，T05 为兼顾耐温与 Bs 之通用基准：仅需电感量且磁通极低者采 T06 / T07（μi 6000 / 7000）；需最高共模阻抗者采 T10 / T12；电阻率与带宽优先者采 E02。μi 5000 于系列中属中间值，所换取者为最宽之温度与磁通工作范围。

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. Within the high-permeability family it has the highest Bs and Curie temperature — 310 mT remains at 100 °C, more than 100 mT above T06/T12 — together with the lowest relative loss factor at 100 kHz in the family (below 6×10^{-6}), a hysteresis constant ηB of 0.3×10^{-6}/mT and a 100 °C coercivity (Hc) of 8 A/m, so it withstands the larger flux swing of pulse transformers while meeting the low-distortion requirement of signal transformers. Typical applications 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 reference balancing temperature capability and Bs: T06/T07 (μi 6000/7000) are recommended where only inductance is required at very low flux, T10/T12 where the highest common-mode impedance is required, and E02 where resistivity and bandwidth take priority. A μi of 5000 is intermediate within the family; in exchange it offers the widest temperature and flux operating 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





