T06

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

鐵研 TAK

T06 为高磁导率锰锌铁氧体，初始磁导率（μi）6000，饱和磁通密度（Bs）380 mT（25 ℃）/ 200 mT（100 ℃），居里温度高于 140 ℃。μi 较 T05 高 20 %，同一电感量所需匝数相应减少 20 %；磁导率温度因子 αf 低于 1.0×10^{-6}、磁滞常数 ηB 0.3×10^{-6}/mT，电感量与失真随温度之漂移均小；100 ℃ 之矫顽力（Hc）8 A/m、残留磁通密度（Br）90 mT。其限制在于 100 ℃ 时 200 mT 之 Bs 为系列内最低，仅适用于低磁通之信号路径，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。于高磁导率系列中，T06 介于 T05 与 T07 之间：需脉冲级磁通摆幅或 100 ℃ 以上裕度者采 T05（100 ℃ Bs 310 mT）；精密互感器需更严之 αf 与更低之 ηB 者采 T07；共模阻抗优先者采 T10 / T12。选用时依电感量需求决定 μi，再以 Bs 与 Tc 核对温度与磁通是否超出范围。

T06 is a high-permeability MnZn ferrite with an initial permeability (μi) of 6000, a saturation flux density (Bs) of 380 mT at 25 °C (200 mT at 100 °C) and a Curie temperature above 140 °C. Its μi is 20 % above T05, reducing the number of turns for a given inductance by 20 %; the temperature factor of permeability αf is below 1.0×10^{-6} and the hysteresis constant ηB 0.3×10^{-6}/mT, so both inductance and distortion drift little with temperature; at 100 °C the coercivity (Hc) is 8 A/m and the remanence (Br) 90 mT. Its limitation is the lowest 100 °C Bs in the family (200 mT), which confines it to low-flux signal paths without DC bias. Typical applications are signal and wideband transformers, current transformers, wideband inductors and signal-filter inductors. Within the high-permeability family T06 lies between T05 and T07: T05 (310 mT at 100 °C) is recommended where pulse-level flux swing or margin above 100 °C is required, T07 for precision current transformers requiring a tighter αf and lower ηB, and T10/T12 where common-mode impedance takes priority. μi should be chosen from the inductance requirement and then checked against Bs and Tc for temperature and flux limits.

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

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	6000±25%		
饱和磁通密度 Saturation Flux Density Bs	1200 A/m 50 Hz	380	200	mT
残留磁通密度 Remanence Br	1200 A/m 50 Hz	140	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	<15		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	<1.0		10^{-6}
居里温度 Curie Temperature Tc	100 kHz & <0.2 mT	>140		℃
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	0.6		Ω·m

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T06

特性曲线
CHARACTERISTIC CURVES





