TM82

超高饱和磁通功率材料
ULTRA-HIGH FLUX POWER FERRITE

TM82 为超高饱和磁通锰锌功率铁氧体，初始磁导率（μi）1200，饱和磁通密度（Bs）600 mT（25 ℃）/ 500 mT（100 ℃），居里温度高于 300 ℃，Bs 与 Tc 皆为全系最高。100 ℃ 仍有 500 mT，比 T2 / T2M 多出约 100 mT，等于同一磁芯在热态可承受更大的直流偏磁或更小的气隙；25 kHz / 400 mT 的增幅磁导率（μa）在 100 ℃ 仍大于 2200，重载时感量不易塌陷。损耗定位在低频：25 kHz / 200 mT 为 200 → 330 kW/m³，但 100 kHz / 200 mT 已达 900 → 1600 kW/m³，不适合高磁通的 100 kHz 主变压器。典型应用为 PFC 升压扼流圈、大电流储能与输出滤波电感、耐偏磁的开气隙电感。在低频高 Bs 群中，TM82 是偏磁与耐温的极限版：磁通摆幅大而偏磁小时回到 T2 / T2M。开气隙后有效磁导率由气隙决定，1200 的 μi 并非限制。

TM82 is an ultra-high-flux MnZn power ferrite with an initial permeability (μi) of 1200, a saturation flux density (Bs) of 600 mT at 25 °C (500 mT at 100 °C) and a Curie temperature above 300 °C — the highest Bs and Tc in the series. With 500 mT still available at 100 °C, about 100 mT more than T2/T2M, the same core tolerates more DC bias or a smaller gap when hot, and its amplitude permeability (μa) at 25 kHz / 400 mT stays above 2200 at 100 °C, so inductance holds under heavy load. Loss is tuned for low frequency: 200 → 330 kW/m³ at 25 kHz / 200 mT but 900 → 1600 kW/m³ at 100 kHz / 200 mT, so it is not meant for high-flux 100 kHz main transformers. Typical uses are PFC boost chokes, high-current storage and output-filter inductors and gapped inductors under DC bias. Within the low-frequency high-Bs group TM82 is the bias and temperature extreme; return to T2/T2M when flux swing is large and bias small. Once gapped, effective permeability is set by the gap, so a μi of 1200 is no limitation.

PFC Boost Choke | High-Current Storage Inductor | Output Filter Inductor | DC-Bias Gapped 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	1200±25%		
增幅磁导率 Amplitude Permeability μa	25 kHz/400 mT	> 4000	> 2200	
饱和磁通密度 Saturation Flux Density Bs	1200 A/m 100 Hz	600	500	mT
残留磁通密度 Remanence Br	1200 A/m 100 Hz	80	100	mT
矫顽力 Coercivity Hc	1200 A/m 100 Hz	12	10	A/m
相对损耗因子 Loss Factor	100 kHz & <0.2 mT	< 15		10^{-6}
居里温度 Curie Temperature Tc	100 kHz & <0.2 mT	> 300		℃
密度 Density D	阿基米德法 Archimedes method	4.95		g/cm³
电阻率 Electrical Resistivity ρ	直流电流 DC Current	> 4		Ω·m

功率损耗 Pcv POWER LOSS · KW/M³

测试条件 Condition	25 ℃	100 ℃
25 kHz/200 mT	200	330
100 kHz/200 mT	900	1600

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特性曲线
CHARACTERISTIC CURVES