鐵研 TAK

T2M

低频高饱和功率材料

LOW-FREQUENCY HIGH-FLUX POWER FERRITE

T2M 为低频高饱和锰锌功率铁氧体，初始磁导率（μi）2000，饱和磁通密度（Bs）510 mT（25 ℃）/ 410 mT（100 ℃），居里温度高于 220 ℃。相较于 T2，其 100 ℃ Bs 高 20 mT（410 对 390 mT，保持率 80 % 对 76 %），Bs 随温度之衰减较缓；矫顽力（Hc）于 25 ℃ 与 100 ℃ 均为 10 A/m，磁滞特性不随温度漂移；损耗略高于 T2（25 kHz / 200 mT：270 → 330 kW/m³；100 kHz / 100 mT：360 → 520 kW/m³），仍属低频功率材料之一般水准。典型应用为 100 kHz 以下、磁芯温度偏高之电子镇流器、低频电源变压器与储能扼流圈。于传统低频功率材料三种之中，T2M 为耐温取向之材料：以损耗为优先且磁芯温度不高者采 T2；需方形磁滞回线与 460 mT 热态 Bs 者采 TB2；需 500 mT 热态 Bs 与直流偏磁承受能力者采高 Bs 特殊功率材料 TM82。选用时应以热态饱和裕度而非常温 μi 为判断依据——其 μi 低于 T2，优势在于热态 Bs。

T2M is a low-frequency high-flux MnZn power ferrite with an initial permeability (μi) of 2000, a saturation flux density (Bs) of 510 mT at 25 °C (410 mT at 100 °C) and a Curie temperature above 220 °C. Compared with T2 its Bs at 100 °C is 20 mT higher (410 vs 390 mT, 80 % vs 76 % retention), i.e. Bs decreases more slowly with temperature; the coercivity (Hc) is 10 A/m at both 25 °C and 100 °C, so the hysteresis characteristic does not drift with temperature. Loss is somewhat higher than T2 (25 kHz / 200 mT: 270 → 330 kW/m³; 100 kHz / 100 mT: 360 → 520 kW/m³) but within the normal range of low-frequency power grades. Typical applications are electronic ballasts, low-frequency power transformers and storage chokes below 100 kHz with elevated core temperature. Among the three conventional low-frequency grades T2M is the temperature-oriented grade: T2 is recommended where loss is the priority and the core temperature is moderate, TB2 where a square loop and 460 mT of hot-state Bs are required, and the high-Bs special grade TM82 where 500 mT of hot-state Bs and DC-bias tolerance are required. Selection should be based on the hot-state saturation margin rather than on room-temperature μi — its μi is below that of T2; its advantage is hot-state Bs.

Electronic Ballast | Low-Frequency Power Transformer | Energy-Storage 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	2000±25%		
增幅磁导率 Amplitude Permeability μa	25 kHz/400 mT	> 500	> 500	
饱和磁通密度 Saturation Flux Density Bs	1200 A/m 100 Hz	510	410	mT
残留磁通密度 Remanence Br	1200 A/m 100 Hz	130	130	mT
矫顽力 Coercivity Hc	1200 A/m 100 Hz	10	10	A/m
相对损耗因子 Loss Factor	100 kHz & <0.2 mT	< 25		10^{-6}
居里温度 Curie Temperature Tc	100 kHz & <0.2 mT	> 220		℃
密度 Density D	阿基米德法 Archimedes method	4.90		g/cm^3
电阻率 Electrical Resistivity ρ	直流电流 DC Current	>6		Ω·m

功率损耗 Pcv POWER LOSS · KW/M³

测试条件 Condition	25 ℃	100 ℃
25 kHz/200 mT	270	330
100 kHz/100 mT	360	520

特性曲线详见次页 CHARACTERISTIC CURVES — SEE NEXT PAGE

T2M

特性曲线
CHARACTERISTIC CURVES











