

TB2 高矩形比功率材料
HIGH-SQUARENESS POWER FERRITE

TB2 为高矩形比锰锌功率铁氧体，初始磁导率 (μ_i) 1500，饱和磁通密度 (B_s) 580 mT (25 °C) / 460 mT (100 °C)，居里温度高于 220 °C。特征是残留磁通密度 (B_r) 420 mT (25 °C) / 330 mT (100 °C)，矩形比 B_r/B_s 约 0.72，磁滞回线接近方形：磁芯在两个饱和态之间切换干脆，撤去激励后保有大部分磁通，这正是磁放大器与饱和电抗器的工作原理。代价是 30 A/m (25 °C) / 25 A/m (100 °C) 的矫顽力 (H_c) 与较高的损耗 (25 kHz / 200 mT : 310 → 430 kW/m³ ; 100 kHz / 100 mT : 440 → 760 kW/m³)。典型应用为磁放大器稳压、饱和电抗器、电子镇流器的触发磁芯与开关扼流圈。在低频高 B_s 群中，TB2 是唯一以矩形比取胜的一支：一般变压器与扼流圈的低损耗需求由 T2 / T2M 承担，更高 B_s 与耐偏磁则是 TM82。把它留给需要开关式磁化行为的电路，不要拿来做线性变压器。

TB2 is a high-squareness MnZn power ferrite with an initial permeability (μ_i) of 1500, a saturation flux density (B_s) of 580 mT at 25 °C (460 mT at 100 °C) and a Curie temperature above 220 °C. Its signature is a remanence (B_r) of 420 mT at 25 °C (330 mT at 100 °C), a squareness ratio B_r/B_s of about 0.72 and a near-rectangular hysteresis loop: the core switches cleanly between its two saturated states and keeps most of its flux once excitation is removed — exactly how magnetic amplifiers and saturable reactors work. The price is a coercivity (H_c) of 30 A/m at 25 °C (25 A/m at 100 °C) and higher loss (25 kHz / 200 mT: 310 → 430 kW/m³; 100 kHz / 100 mT: 440 → 760 kW/m³). Typical uses are mag-amp regulators, saturable reactors, ballast trigger cores and switching chokes. Within the low-frequency high- B_s group TB2 is the only grade chosen for squareness: low-loss transformer and choke duty belongs to T2/T2M, higher B_s and DC-bias tolerance to TM82. Reserve it for circuits that need switching-type magnetisation, not linear transformers.

- Magnetic Amplifier
- Saturable Reactor
- Ballast Trigger Core
- Switching Choke

电磁特性 MAGNETIC CHARACTERISTICS

特性 Characteristic	条件 Condition	25 °C	100 °C	单位 Unit
初始磁导率 Initial Permeability μ_i	100 kHz & <0.2 mT	1500±25%		
增幅磁导率 Amplitude Permeability μ_a	25 kHz/400 mT	> 900	> 500	
饱和磁通密度 Saturation Flux Density B_s	1200 A/m 100 Hz	580	460	mT
残留磁通密度 Remanence B_r	1200 A/m 100 Hz	420	330	mT
矫顽力 Coercivity H_c	1200 A/m 100 Hz	30	25	A/m
相对损耗因子 Loss Factor	100 kHz & <0.2 mT	< 40		10 ⁻⁶
居里温度 Curie Temperature T_c	100 kHz & <0.2 mT	>220		°C
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	>4		Ω·m

功率损耗 P_{cv} POWER LOSS · KW/M³

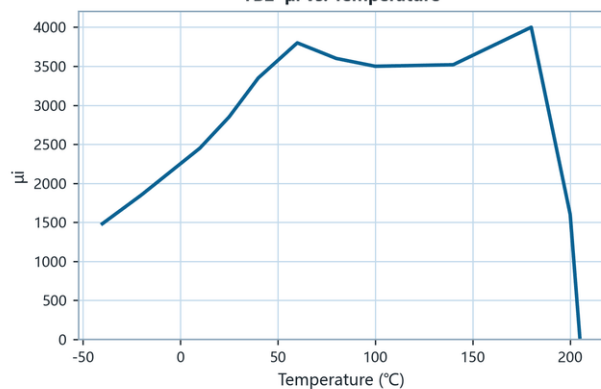
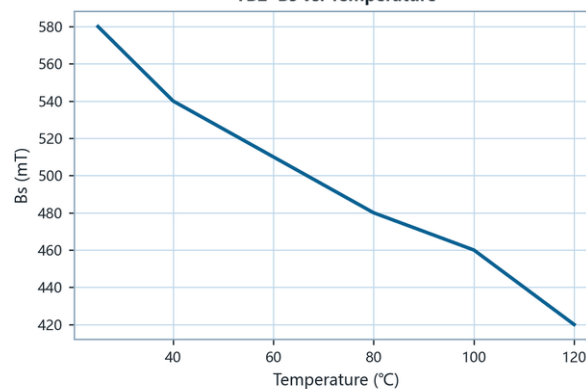
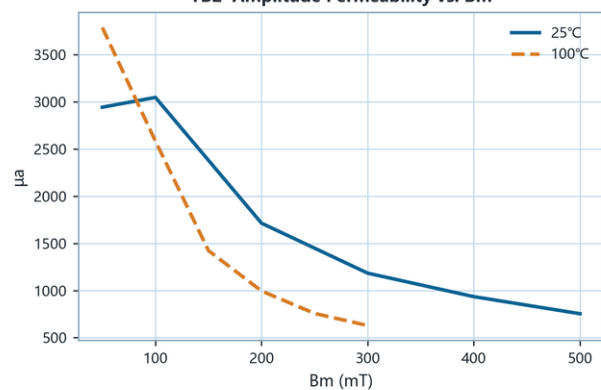
测试条件 Condition	25 °C	100 °C
25 kHz/200 mT	310	430
100 kHz/100 mT	440	760

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

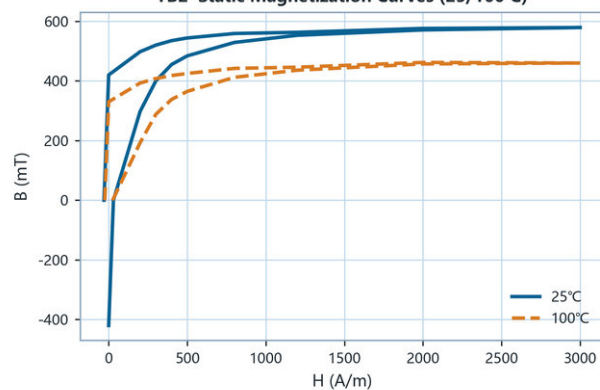
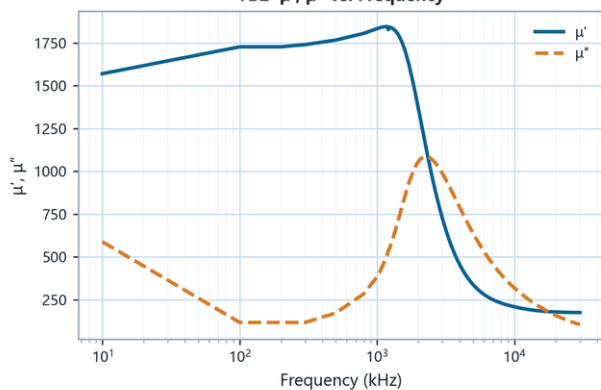
TB2

特性曲线

CHARACTERISTIC CURVES

TB2 μ_i vs. TemperatureTB2 B_s vs. TemperatureTB2 Amplitude Permeability vs. B_m 

TB2 Static Magnetization Curves (25/100°C)

TB2 μ' , μ'' vs. Frequency

TB2 Core Loss vs. Temperature

