纳米晶共模电感 TCB60405-124V

Pin-to-Pin Drop-In Replacement for VAC T60405-S6123-X306

直接替代德国 VAC 共模电感，零改板、零重新认证——EMI 滤波供应链的自主之选。

A direct, pin-compatible upgrade to the VAC T60405-S6123-X306 nanocrystalline common mode choke — engineered for power electronics, renewable energy and industrial EMI filtering.



当德国 VAC 共模电感成为供应链瓶颈

Why a qualified second source for the VAC T60405-S6123-X306 is no longer optional

01

单一进口依赖

VAC 作为德国磁性元件头部供应商，常规交期 16–26 周，最小起订量高，跨境物流与地缘政策风险不可控。

Sole-source import dependency: 16–26 week lead times, high MOQs, and cross-border logistics & geopolitical exposure.

02

规格书平台老化

VAC T60405-S6123-X306 规格书日期为 2010 年 10 月，绝缘系统仅 130°C，平台十余年未迭代，难以匹配当代宽温、高功率密度需求。

Dated datasheet (15 Oct 2010): 130°C insulation system, a platform unchanged for over a decade.

03

成本与响应

进口元器件溢价显著，汇率波动直接侵蚀利润；海外技术支持与样品、问题器件交换周期长，拖慢认证节奏。

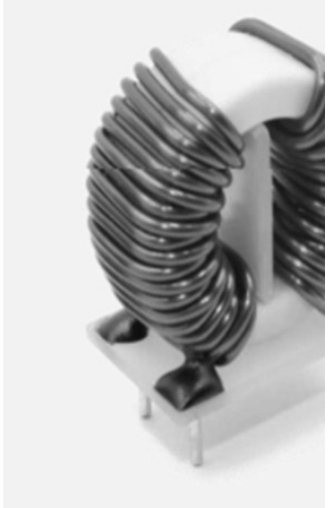
Import premium, FX volatility and slow overseas FA / RMA cycles erode margin and qualification velocity.

Source: VACUUMSCHMELZE datasheet T60405-S6123-X306, Rev. 15 Oct 2010; Yetcoil customer qualification records.

TCB60405-124V 关键参数一览

Nanocrystalline common mode choke — electrical and mechanical specification at a glance

参数 Parameter	TCB60405-124V
额定电流 Rated current	**2.0 A**
磁芯材料 Core material	高磁导率纳米晶 Nanocrystalline
工作温度 Operating temp.	**-40 °C ~ +125 °C**
阻燃 Flammability	UL94 V-0
电感 L @ 10 kHz	12.1 mH
电感 L @ 100 kHz	2.82 mH
阻抗 |Z| @ 100 kHz	**3000 Ω**
外形尺寸 Dimensions	22.0 max × 25.0 max mm
引脚兼容 Pin compatibility	**VAC T60405-S6123-X306 (pin-to-pin)**



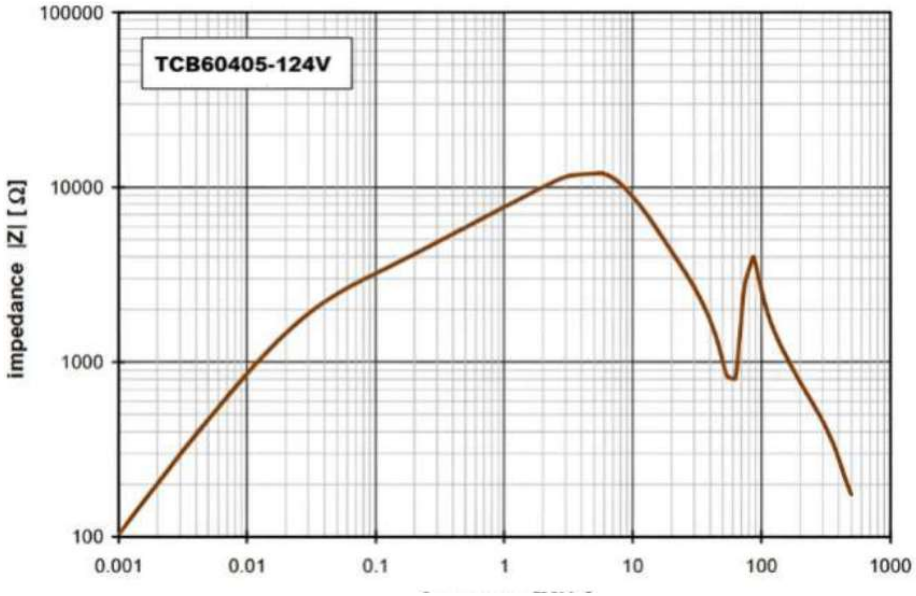
TCB60405-124V — toroidal nanocrystalline CMC

RoHS compliant • UL94 V-0

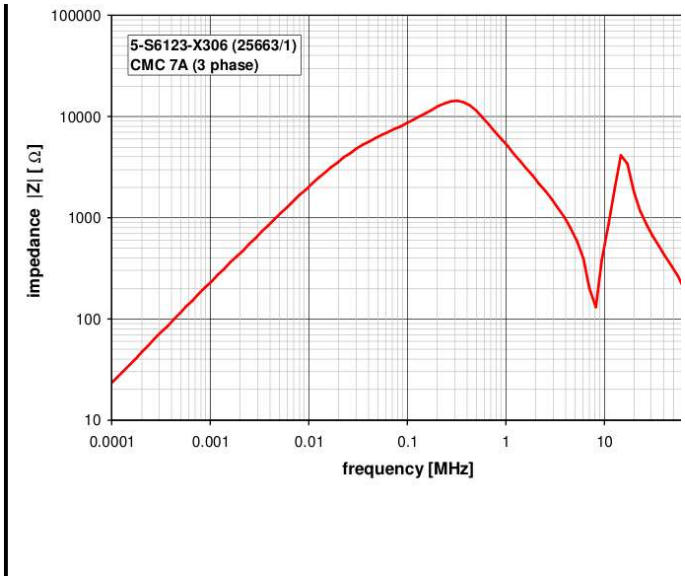
阻抗-频率：全频段覆盖相当，高频延伸更优

Impedance |Z| vs. frequency — comparable band coverage, superior high-frequency roll-off

Yetcoil TCB60405-124V



VAC T60405-S6123-X306



峰值相当　Peak |Z|: TCB ≈ 12 kΩ @ 5 MHz vs. VAC ≈ 15 kΩ @ 1 MHz

高频延伸更优　TCB 谐振峰延伸至 50–100 MHz，VAC 在 20 MHz 后快速跌落

低频等效　100 Hz–1 MHz 区间曲线形状高度一致，滤波效果对等

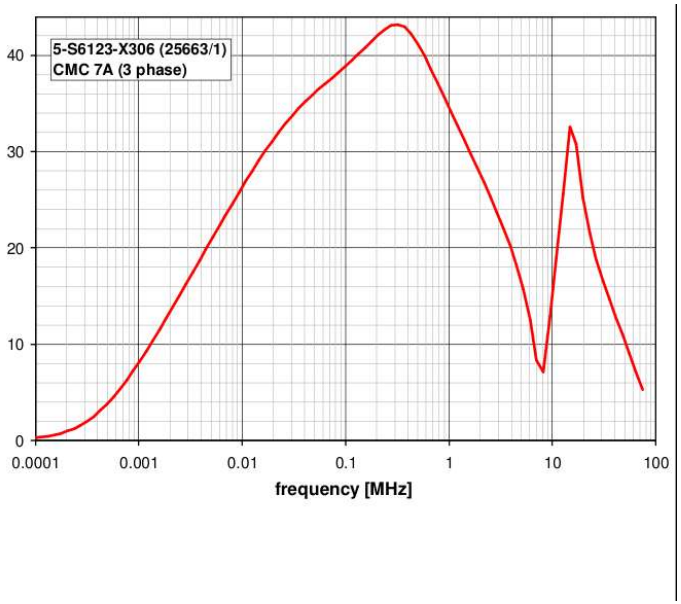
插入损耗：峰值对等，高频段滤波余量更平稳

Insertion loss aE (50 ohm system) — matched peak, flatter margin into the VHF band

Yetcoil TCB60405-124V



VAC T60405-S6123-X306



峰值对等　Peak aE: TCB ≈ 42 dB @ 5 MHz vs. VAC ≈ 43 dB @ 0.5 MHz

高频谐振保留　TCB 在 ~50 MHz 仍有 ~32 dB 谐振峰，VAC ~20 MHz 即跌至 7 dB

VHF 余量　30–108 MHz 频段传导骚扰测试中，TCB 滤波余量更稳

Pin-to-pin 兼容：从选料到量产只需数周

No PCB re-spin, no re-qualification cycle — mechanical and footprint compatibility with the VAC part

为什么是"直接换料"

机械尺寸 22.0 max × 25.0 max mm，与 VAC T60405-S6123-X306 同封装外形

引脚布局 4-pin 引脚间距、焊盘占位与 VAC 一致，现有 PCB 无需改板

电气覆盖 阻抗与插入损耗曲线覆盖 VAC 工作区间，EMC 测试余量不缩水

温度与阻燃 -40 ~ +125 °C、UL94 V-0、RoHS，满足工业与新能源安规入口

导入时间对比 Qualification timeline

传统替代方案（改板 / 重新选型）

原理图修改 → PCB 改板 → 重新打样 → EMC 重测 → 安规重认证

≈ 3–6 个月

采用 TCB60405-124V（pin-to-pin drop-in）

样品上机 → 对比验证 → 直接换料 → 量产

≈ 2–4 周

注：实际导入周期依客户测试条件与安规认证状态而定；Yetcoil 提供样品与技术支持以加速上机验证。

供应链多元化：交期、成本与技术支持

A qualified second source that shortens lead time, removes FX exposure and puts an engineer on the phone

4–8 周

更短交期

从 VAC 常规 16–26 周缩短至 4–8 周；常备安全库存，订单波动可快速响应。

Lead time cut from 16–26 weeks to 4–8 weeks, with standing safety stock for demand volatility.

本地报价

成本可预测

多币种结算，去除进口溢价、关税与汇率波动；BOM 成本透明，年度议价空间明确。

Multi-currency settlement, eliminating import premiums, tariffs and exchange rate fluctuations; BOM costs are transparent, and the annual negotiation space is clearly defined.

48 h

技术响应

中英双语 FAE 直接对接，样品 48 小时内发出；上机异常可提供波形对比与失效分析。

Bilingual FAE support, samples shipped within 48 hours, and on-request waveform / FA support.

Typical values based on Yetcoil 2026 production planning; actual lead time and pricing depend on order volume and destination.

申请样品，上机验证

Request TCB60405-124V samples — drop them onto your existing VAC footprint

Website

www.yetcoil.com

Sales / Sample Request

carlkuo@yetcoil.hk

Delivered with

Full datasheet · Impedance / insertion-loss curves · S-parameter on request · FAE support

Target applications

- Switch-mode power supplies 开关电源
- Solar inverters & energy storage 光伏逆变 / 储能
- EV on-board chargers (OBC) 车载充电机
- Server / telecom power 服务器 / 通信电源
- Motor drives & VFDs 变频器 / 电机驱动
- Smart meters & industrial controls 智能仪表