

Specification for approval

Description (产品类型) : Power Module

Customer P/N (客户) : _____

ZETTLER P/N (赛特勒) : APX05S0500WP-100

Revision (版本号) : PD1.5

Drafted (编制) : Honghua Luo

Checked (审核) : Xianzhi Xie

Approved (批准) : Aaron Chen



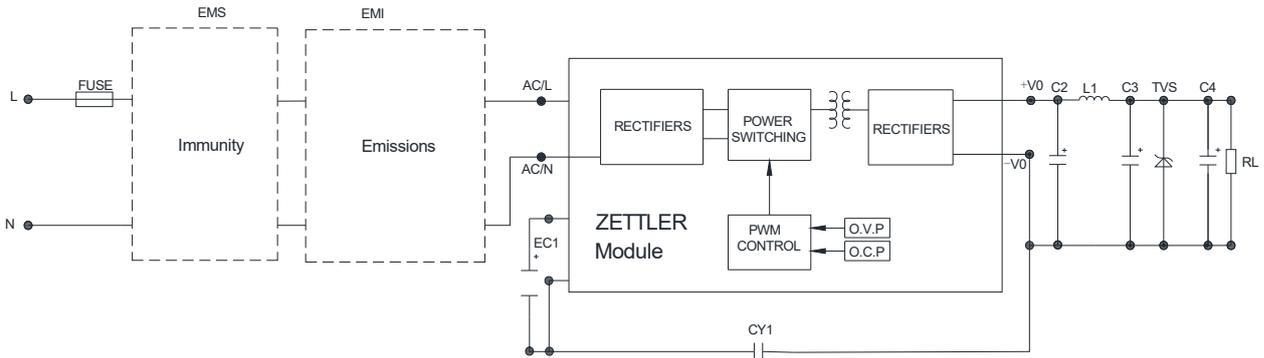
| Rev. | Date | Description | Approved |
|-------|------------|---|-------------|
| PD1.5 | 2025/05/22 | Modify label(add TUV,UL,CQC logo) | Honghua Luo |
| PD1.4 | 2025/04/02 | Modify power derating, change weight from 6g to 4.8g | Honghua Luo |
| PD1.3 | 2024/10/28 | Modify typical application schematic | Honghua Luo |
| PD1.2 | 2024/09/24 | Change P/N from APX05S0500WP to APX05S0500WP-100 | Honghua Luo |
| PD1.1 | 2024/08/26 | Modify power derating, outline drawing, typical application schematic, electrical specification | Honghua Luo |
| PD1.0 | 2024/06/06 | Initial release | Honghua Luo |
| Rev. | Date | Description | Approved |

Approved by Customer (客户确认) : _____

Friendly Reminder: Please help to sign this Spec when approve , and fax to our company . Or else, we will consider you have accepted it and make future order based on this Spec.

友情提示:请在签字确认后,按封面的传真号码回传给赛特勒磁电有限公司.如无回传,则视为默认,后续的相关订单将以按本承认书的规定为技术要求

3.TYPICAL APPLICATION SCHEMATIC (典型应用电路)



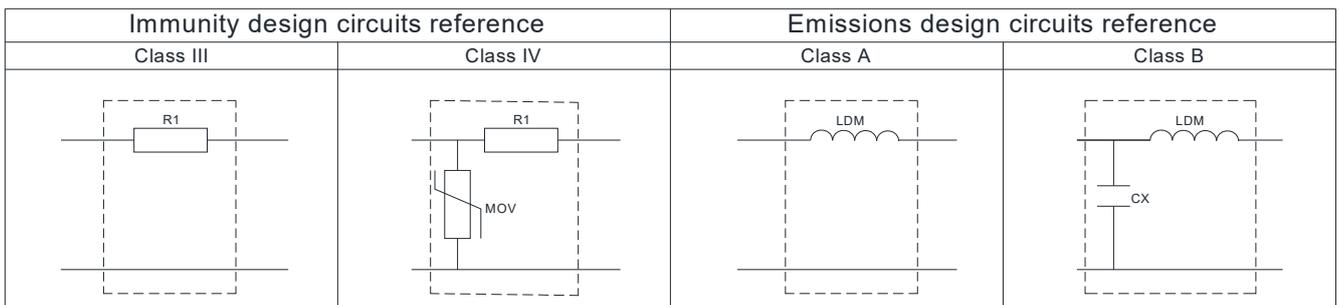
APX05S0500WP-100 Series additional component selection guide(no EMC devices)

| Part no. | EC1 ¹ | C2 (required) | L1 (required) | C3 ² (required) | C4 | CY1 (required) | TVS ³ |
|------------------|---|-----------------------------------|-------------------|----------------------------|-----------------------------|----------------|------------------|
| APX05S0500WP-100 | 22μF/450V (-40°C to 85°C with 85-305 Vac input) 10μF/450V (-25°C to 85°C with 85-305 Vac input, or -40°C to 85°C with 165-305 Vac input) | 470μF/16V (solid-state capacitor) | 4.7μH max 60mΩ/2A | 100μF/16V | 104/50V (ceramic capacitor) | 222/400Vac | SMBJ7.0A |

- Note: 1.Recommended to use a capacitor with ripple current >200 mA at 100 kHz.
 2.Recommended to use a high frequency, low ESR, electrolytic capacitor (<= 1.1Ω at -40 C) with at least 20% margin on voltage rating.
 3.A suppressor diode (TVS) is recommended to protect the downstream application in case of converter failure and should be rated for a minimum of 1.2 times the converter's output voltage.

APX05S0500WP-100 Series Enviromental and EMC selection guide

| Recommended circuit | Application enviromental | Typical industry | Input voltage range | Environment temperature | Emissions | Immunity |
|---------------------|------------------------------|---|---------------------|-------------------------|-----------|-----------|
| 1 | Basic application | None | 85~305Vac | -40°C to 85°C | Class A | Class III |
| 2 | Indoor civil enviroment | Smart home/Home appliances (2 Y-caps) | | -25°C to 55°C | Class B | Class III |
| | Indoor general enviroment | Intelligent building/ Intelligent agriculture | | -25°C to 55°C | Class B | Class IV |
| 3 | Indoor industrial enviroment | Manufacturing workshoop | | -40°C to 85°C | Class A | Class IV |



Circuit 1

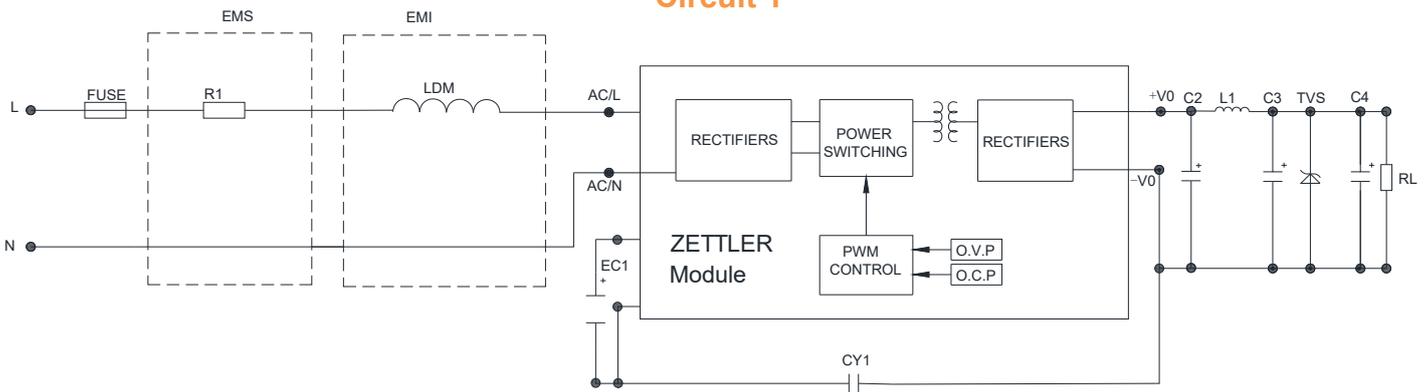


Table 1

| Application enviromental | Ambient temperature range | Imunity Class | Emissions Class |
|--------------------------|---------------------------|---------------|-----------------|
| Basic application | -40°C ~ 85°C | Class III | Class A |

| Component | Recommended value |
|------------------------------------|------------------------|
| FUSE (required) | 1A/300V, slow blow |
| R1 (wire-wound resistor, required) | 12Ω/3W |
| LDM | 4.7mH/15Ω max/0.2A min |

Note: R1 must be a wire-wound resistor; do not use a chip or carbon film resistor.

Circuit 2

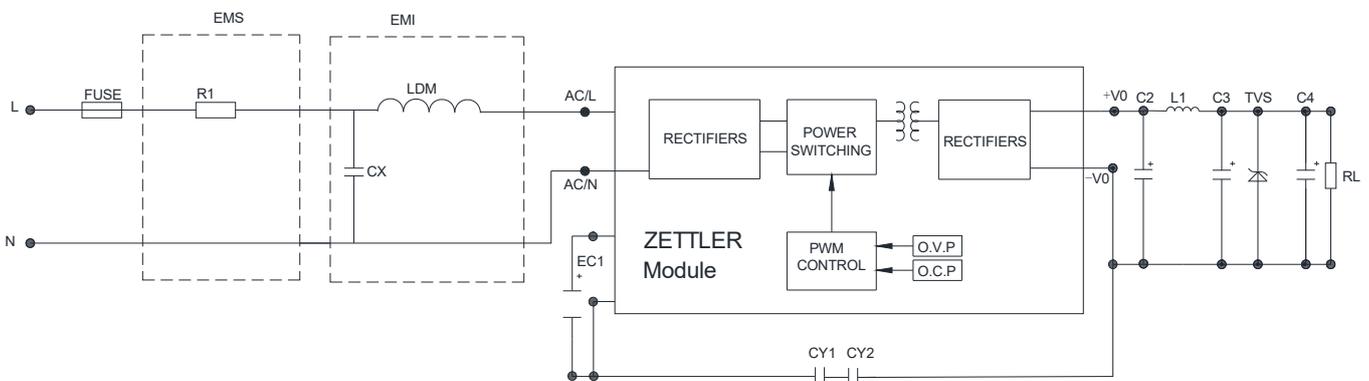


Table 2

| Application enviromental | Ambient temperature range | Imunity Class | Emissions Class |
|--------------------------|---------------------------|---------------|-----------------|
| Indoor civil / general | -25°C ~ 55°C | Class III | Class B |

| Component | Recommended value |
|------------------------------------|--------------------|
| FUSE (required) | 1A/300V, slow blow |
| R1 (wire-wound resistor, required) | 12Ω/3W |
| LDM | 1.2mH/ 4Ω/0.2A |
| CX | 0.1μF/310Vac |

Note: R1 must be a wire-wound resistor; do not use a chip or carbon film resistor.

Circuit 3

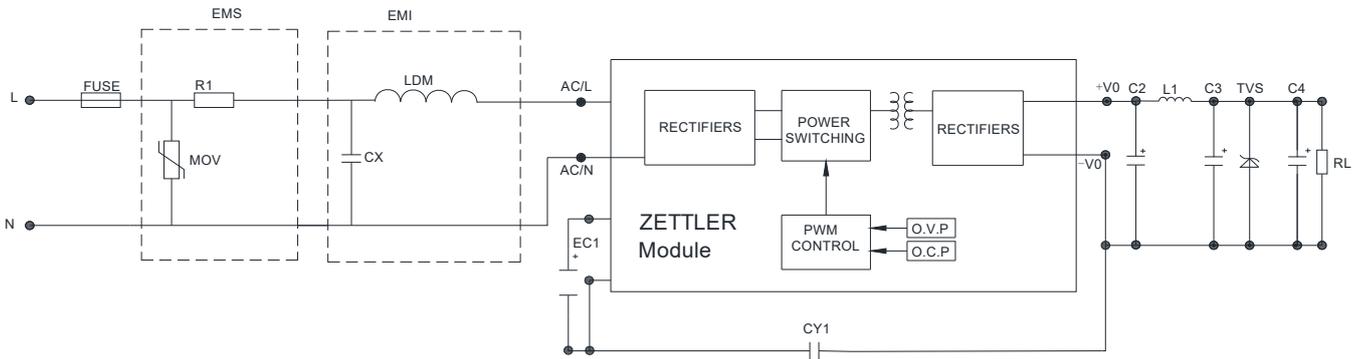


Table 3

| Application enviromental | Ambient temperature range | Imunity Class | Emissions Class |
|--------------------------|---------------------------|---------------|-----------------|
| Indoor industrial | -25°C ~ 55°C | Class IV | Class B |

| Component | Recommended value |
|------------------------------------|--------------------|
| FUSE (required) | 2A/300V, slow-blow |
| R1 (wire-wound resistor, required) | 12Ω/3W |
| LDM | 1.2mH/ 4Ω/0.2A |
| CX | 0.1μF/310Vac |
| MOV | S14K350 |

Note: 1. Many safety standards require a bleeder resistor no greater than 3.8MΩ in parallel with the X-capacitor.
2.R1 must be a wire-wound resistor; do not use a chip or carbon film resistor.

Circuit 4

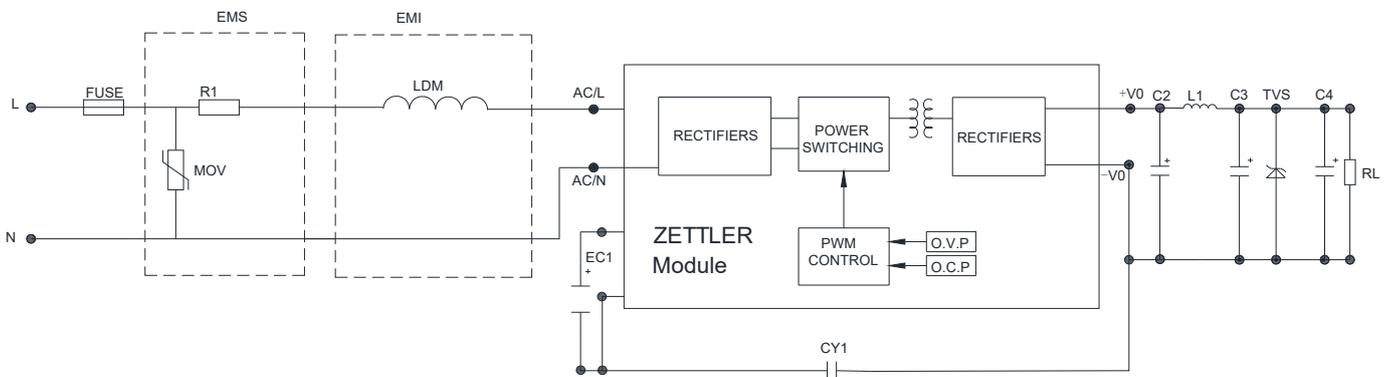


Table 4

| Application enviromental | Ambient temperature range | Imunity Class | Emissions Class |
|----------------------------|---------------------------|---------------|-----------------|
| Outdoor general enviroment | -40°C ~ 85°C | Class IV | Class A |

| Component | Recommended value |
|------------------------------------|--------------------|
| FUSE (required) | 2A/300V, slow-blow |
| R1 (wire-wound resistor, required) | 12Ω/2W |
| LDM | 4.7mH/ 15Ω/0.2A |
| MOV | S14K350 |

Note: R1 must be a wire-wound resistor; do not use a chip or carbon film resistor.

4.ELECTRICAL SPECIFICATION (电性能参数)

| Model No. / 型号 | | APX05S0500WP-100 | | |
|-------------------------------------|---------------------------------|---|--------|--|
| Input 输入参数 | Rated Voltage / 额定电压 | 100-277VAC (For UL,TUV Certification) ;100-240VAC(For CQC Certification) | | |
| | Voltage Range / 输入电压范围 | 85-305VAC or 100-430VDC | | |
| | Frequency (Hz) / 输入频率范围 | 47-63 Hz | | |
| | Current (Full load) / 输入电流 | 115VAC | 230VAC | |
| | | 200mA | 100mA | |
| | Inrush Current (<500us) / 冲击电流 | 20A | 40A | |
| | No Load Loss / 待机功耗 | 0.15W@230Vac | | |
| HOT PLUG / 热拔插 | Unavailable | | | |
| Output 输出参数 | Voltage (V) / 输出电压 | 5 | | |
| | Current (mA) max. / 输出额定电流 | 1000 | | |
| | Voltage Accuracy / 输出电压精度 | ±5%@(10%-100% load) | | |
| | Line Regulation / 线性调节率 | ±1.5%(at rated load) | | |
| | Load Regulation / 负载调节率 | ±3%@(10%-100% load) | | |
| | Minimum Load (mA) / 最小负载 | 10% | | |
| | Ripple & Noise (mV) / 输出纹波 | 150/20MHz bandwidth (peak-to-peak value) | | |
| | Efficiency (typ.) / 工作效率 | 76%@230Vac | | |
| | Start-up Time / 开机延迟时间 | 3s | | |
| Protection 保护特性 | Over Current Protection / 过流保护 | Hiccup mode | | |
| | Short Circuit Protection / 短路保护 | Hiccup mode | | |
| Environment 环境 | Operating Temperature / 工作温度 | -40°C...+85°C(Reference to the De-rating Curve) @free air convection | | |
| | Operating Humidity / 工作湿度 | 10-90% RH | | |
| | Storage Temperature / 存储温度 | -40°C...+105°C | | |
| | Storage Humidity / 存储湿度 | 5-95% RH | | |
| | Temperature Coefficient/温度漂移系数 | ±0.15%/°C (0~60°C) | | |
| | Resistance to solder heat/焊锡耐热性 | 260 ± 5°C,5-10Sec | | |
| Physical 外观结构 | Case Material / 外壳材质 | N/A | | |
| | Weight / 产品净重 | 4.8g(ref.) | | |
| Safety & EMC 安全认证及 电磁兼容 | Dielectric Strength / 绝缘强度 | I/P-O/P : 3600VAC | | |
| | Safety Standards / 安全标准 | Compliance with EN/IEC/UL62368-1;IEC/EN61558-2-16 | | |
| | EMI /EMC | CISPR32/EN55032 CLASS A (Recommended circuit 1, 4) CISPR32/EN55032 CLASS B (Recommended circuit 2, 3) | | |
| | ESD | IEC/EN 61000-4-2 Contact ±6KV perf. Criteria B | | |
| | radiated immunity | IEC/EN61000-4-3 10V/m perf. Criteria A | | |
| | EFT/burst | IEC/EN61000-4-4 ±2KV (Recommended circuit 1, 2) perf. Criteria B IEC/EN61000-4-4 ±4KV (Recommended circuit 3, 4) perf. Criteria B | | |
| | surge | IEC/EN61000-4-5 line to line ±1KV (Recommended circuit 1, 2) perf. Criteria B IEC/EN61000-4-5 line to line±2KV (Recommended circuit 3, 4) perf. Criteria B | | |
| | conducted immunity | IEC/EN61000-4-6 10Vr.m.s perf. Criteria A | | |
| Reliability Requirement 可靠性要求 | MTBF | 1000KHrs Min MIL-HDBK-217F (25°C) | | |
| | Burn-In Test | The unit shall be burned in for 2~4 Hours under 277Vac input and with full load at 45°C | | |