

PPM-Series PPMxx-x-xxZSLF 5 - 20 W AC/DC CONVERTER ISOL./SEP. TWIN OUTPUT
Input Specifications

| | | |
|----------------------------------|---|---|
| Input voltage range | | 85- 264VAC, 120- 370VDC |
| Input frequency | | 47- 63Hz |
| Input current | PPM05 PPM10 PPM15 PPM20 PPM25 | 110VAC 230VAC 120mA , typ. 70mA , typ. 230mA , typ. 120mA , typ. 250mA , typ. 140mA , typ. 330mA , typ. 180mA , typ. 420mA , typ. 230mA , typ. |
| Inrush current | PPM05 PPM10 PPM15 PPM20/PPM25 | 110VAC 230VAC 10A, typ. 20A, typ. 10A, typ. 20A, typ. 10A, typ. 20A, typ. 16A, typ. 30A, typ. |
| External input fuse(recommended) | PPM05 PPM10/PPM15 PPM20/PPM25 | 1A/250V slow blow 2A/250V slow blow 3.15A/250V slow blow |

Output Specifications

| | | |
|--------------------------------|--|--|
| Voltage set accuracy | | ±2%(main out) |
| Input variation | | ±0.5% (main output) ±1.5% (supplement output) |
| Load variation (10-100%) | Isolated and separated twin output (balanced load) | Vo1 ±3% (Main output) Vo2 ±5% (Supplement output) |
| Ripple& noise(p-p) | 20MHz Bandwidth | ≤100mV |
| Short circuit protection | | Continuous, and auto resume |
| Over current protection | | ≥110% IO |
| Over output voltage protection | 3.3 / 5VDC models 9VDC model 12 / 15VDC models 24VDC model 48VDC model | ≤6.5VDC ≤12VDC ≤20VDC ≤30VDC ≤60VDC |

General Specifications

| | | |
|---------------------------|--|---|
| Temperature ranges | Operating : Power derating above 55°C: Storage: Case temperature: | -25 °C to +70 °C 3.75% / °C -25 °C to +105 °C +90 °C max |
| Weight | PPM05, PPM10, PPM15, PPM20/25 | ~50g, ~70g, ~80g, ~120g |
| Hold-up time | (Vin=230VAC) | 80ms(typ.) |
| Humidity (non condensing) | | 85%(max) |
| Temperature coefficient | | 0.02% / °C |
| Switching frequency | | 150kHz max |
| Efficiency | | See table |
| I/O-isolation voltage | | 3000VAC/1Min |
| Leakage current | | 0.3mA RMS typ.. 230VAC/50Hz |
| Case material | | UL 94V-0 rated |
| Install | | PCB |
| MTBF | | >200,000h @25 °C |
| RoHS compliant | | Soldering 260 °C / max. 10 sec. |

Examples of Partnumbers/Modelcode

| PART NO. | Power (Watt) | INPUT CURRENT (mA, typ.) 110V / 230V | OUTPUT (Vo1 / Io1) | OUTPUT (Vo2 / Io2) | RIPPLE AND NOISE (typ.) | EFFICIENCY (% min.) |
|------------------|--------------|---|--------------------|--------------------|-------------------------|---------------------|
| PPM05-A-0505ZSLF | 5 | 120 / 70 | 5V / 900mA | 5V / 100mA | 50mV | 76 |
| PPM05-A-0512ZSLF | 5 | 120 / 70 | 5V / 750mA | 12V / 100mA | 50mV | 76 |
| PPM05-A-0515ZSLF | 5 | 120 / 70 | 5V / 700mA | 15V / 100mA | 50mV | 76 |
| PPM05-A-0524ZSLF | 5 | 120 / 70 | 5V / 600mA | 24V / 100mA | 50mV | 76 |
| PPM10-B-0505ZSLF | 10 | 230 / 120 | 5V / 1800mA | 5V / 200mA | 50mV | 78 |
| PPM10-B-0512ZSLF | 10 | 230 / 120 | 5V / 1500mA | 12 V / 200mA | 50mV | 78 |
| PPM10-B-0515ZSLF | 10 | 230 / 120 | 5V / 1400mA | 15 V / 200mA | 50mV | 78 |
| PPM10-B-0524ZSLF | 10 | 230 / 120 | 5V / 1000mA | 24 V / 200mA | 50mV | 78 |
| PPM15-C-0505ZSLF | 15 | 250 / 140 | 5V / 2200mA | 5V / 800mA | 50mV | 80 |
| PPM15-C-0512ZSLF | 15 | 250 / 140 | 5V / 2000mA | 12V / 400mA | 50mV | 80 |
| PPM15-C-0515ZSLF | 15 | 250 / 140 | 5V / 2000mA | 15V / 300mA | 50mV | 80 |
| PPM15-C-0524ZSLF | 15 | 250 / 140 | 5V / 2000mA | 24V / 200mA | 50mV | 80 |
| PPM20-D-0505ZSLF | 20 | 330 / 180 | 5V / 3000mA | 5V / 1000mA | 50mV | 82 |
| PPM20-D-0512ZSLF | 20 | 330 / 180 | 5V / 2500mA | 12V / 600mA | 50mV | 82 |
| PPM20-D-0515ZSLF | 20 | 330 / 180 | 5V / 2500mA | 15V / 500mA | 50mV | 82 |
| PPM20-D-0524ZSLF | 20 | 330 / 180 | 5V / 2500mA | 24V / 300mA | 50mV | 82 |

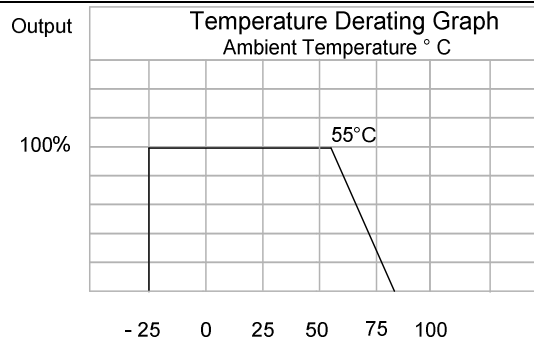
Other specifications please enquire.

Dimensions / Pinning

| PINNING PPMxx-xi-xxZLF | |
|------------------------|-------------------|
| # | Isolated twin out |
| 1 | Ground |
| 2 | AC (N) |
| 3 | AC (L) |
| 4 | - V Output 1 |
| 5 | + V Output 1 |
| 6 | Omitted |
| 7 | - V Output 2 |
| 8 | + V Output 2 |
| TRIM | Omitted |

NOTE:
 Unit: mm
 Pin section: 1.00mm
 Pin tolerances: +/- 0.1mm
 General tolerances: +/- 0.5mm

| No. | PPMxx-A | No. | PPMxx-B | No. | PPMxx-C | No. | PPMxx-D |
|-----|---------|-----|---------|-----|---------|-----|---------|
| A | 12.5 | A | 17.5 | A | 17.5 | A | 20.0 |
| B | 48.5 | B | 55.0 | B | 62.0 | B | 70.0 |
| C | 40.5 | C | 47.0 | C | 54.0 | C | 62.0 |
| D | 4.0 | D | 5.0 | D | 5.0 | D | 5.75 |
| E | 16.0 | E | 20.0 | E | 20.0 | E | 23.0 |
| F | 36.0 | F | 45.0 | F | 45.0 | F | 48.0 |
| G | 20.5 | G | 20.5 | G | 22.5 | G | 23.5 |
| H | 6.0 | H | 6.0 | H | 6.0 | H | 6.0 |

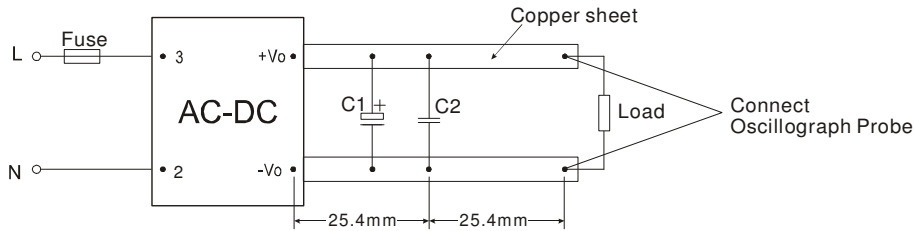


App Notes

Remarks :

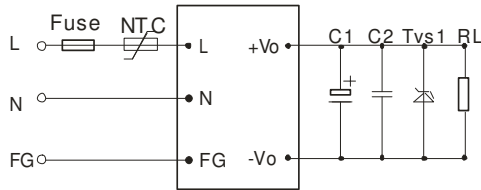
1. Ripple and Noise were measured by the method of parallel lines;
2. Unless otherwise specified, all specifications above are measured at rated input voltage and rated output load, TA=25°C, humidity < 75%;
3. All specifications stated in this datasheet are subject to the above listed model only. For specifications of non-standard model, please contact our technical support team.

Parallel Lines Measure

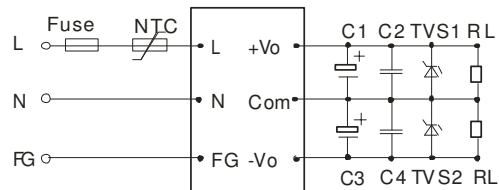


Typical Applications PPM-Series

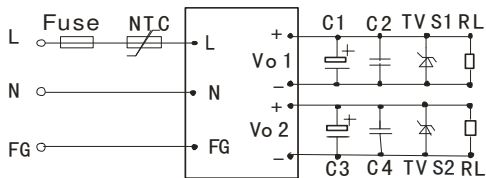
PPMxx-x-xxELF (single Output)



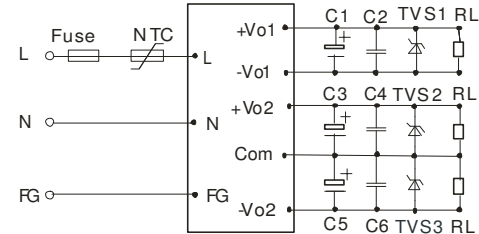
PPMxx-x-xxZLF (Dual output)



PPMxx-x-xxZSLF (Isolate Twin Output)



PPMxx-x-xxDLF (Triple Output)



External Typical Value

| Vout | C1/C3/C5 | C2/C4/C6 | TVS |
|------|----------------|--------------------------------------|----------|
| 3.3V | 330-1000uF/16V | 0.1uF/50-100V (Ceramic Capacitor) | P6KE6.8A |
| 5V | 330-1000uF/16V | | P6KE6.8A |
| 12V | 47-220uF/25V | | P6KE16A |
| 15V | 47-220uF/25V | | P6KE20A |
| 24V | 10-120uF/35V | | P6KE33A |
| 48V | 10-68uF/63V | | P6KE62A |

Remarks

1. Output filtering capacitor C5, C3 and C1 are electrolytic capacitor. It is recommended to use high frequency and low resistance electrolytic capacitor. For capacitance and current of the capacitor please refer to suppliers' specifications. Voltage derating of capacitor should be 80% or above. C2, C4 and C6 eliminate high frequency noise. TVS is a recommended component to protect post-circuits (when converter fails).
2. External input NTC is recommended to use 5D-9 (Only PPM10 model and PPM15 model)

Specification can be changed without notice.

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REV old: Jan. 08
 REV new: Oct. 08
 Changed: new Models