

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

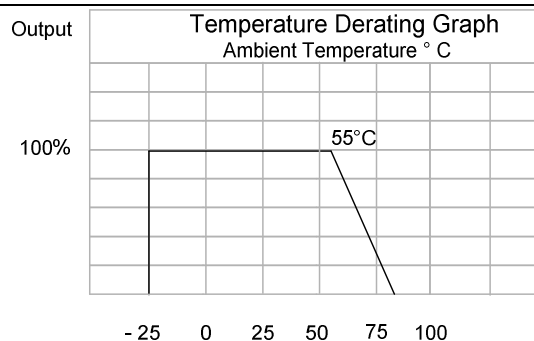
Other specifications please enquire.

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

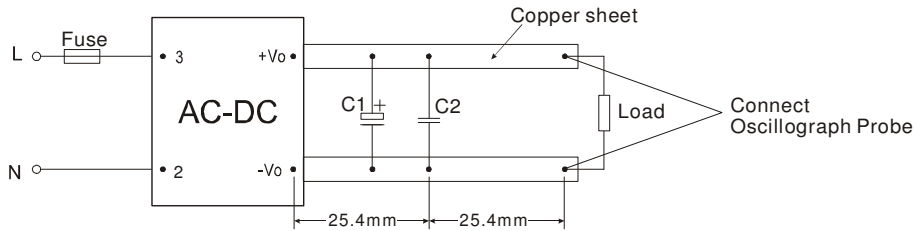


App Notes

Remarks :

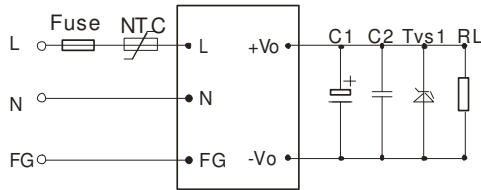
1. Ripple and Noise were measured by the method of parallel lines;
2. Unless otherwise specified, all specifications above are measured at rated input voltage and rated output load, TA=25°C, humidity < 75%;
3. All specifications stated in this datasheet are subject to the above listed model only. For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

Parallel Lines Measure

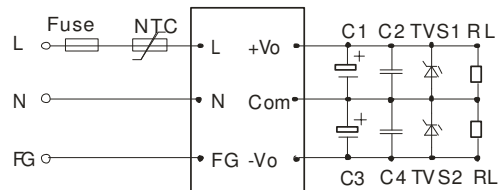


Typical Applications PPM-Series

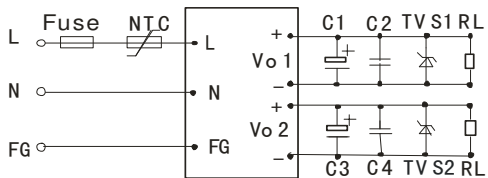
PPMxx-x-xxELF (single Output)



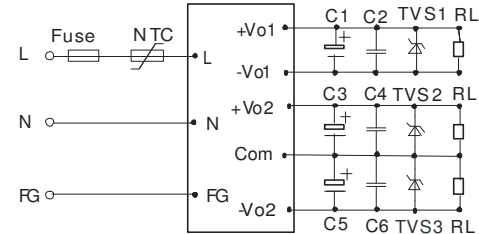
PPMxx-x-xxZLF (Dual output)



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