

PPMxx-X-xxDLF



PPM-SERIES

Rev.07-2010

- ✓ **5 - 20 Watt**
- ✓ Univ. **85-264VAC** and **50/60Hz**
- ✓ **Triple Output**
- ✓ **Overload Protection**
- ✓ **3 kV AC I/O Isolation**
- ✓ **Low Ripple and Noise**
- ✓ **High Efficiency**

The PPM-Series are high efficiency green power moduls with various packaging provided by Peak. The features of this series are: wide input voltage, DC and AC all in one, high efficiency, high reliability, low loss, safety isolation etc. They are widely used in industrial, office and civil equipments. EMC and safety standards meet international standards IEC61000 UL60950 and IEC60950, and Multi-certificate is in processing.

All specifications typical at Ta=25°C, nominal input voltage and full load unless otherwise specified

Input Specifications

Input Voltage Range	85 – 264 VAC or 120 – 370 VDC universal		
Input Frequency	47 – 63 Hz		
Input (Inrush) Current		<u>110 VAC</u>	<u>230 VAC</u>
	PPM05 models	120mA (10A), typ.	70mA (20A), typ.
	PPM10 models	230mA (10A), typ.	120mA (20A), typ.
	PPM15 models	250mA (10A), typ.	140mA (20A), typ.
	PPM20 models	330mA (16A), typ.	180mA (30A), typ.

External Input Fuse (recommended)

PPM05 models	1A / 250V slow blow
PPM10 / 15 models	2A / 250V slow blow
PPM20 models	3.15A / 250V slow blow

Output Specifications

Voltage Accuracy	±2% (main output)
Input variation	±0.5% (main output) ±1.5% (supplement output)
Load variation (10-100% Balance Load)	Vo1: ±3% ±Vo2: ±5%
Minimum load	10%
Ripple and Noise (20Mhz bandwidth)	≤ 100mV pk-pk (main output)
Short Circuit Protection	Continuous, auto recovery
Over Current Protection	≥ 110% Io
Over output voltage protection	
	5VDC models ≤7.5VDC
	12 / 15VDC models ≤20VDC
	24VDC models ≤30VDC

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Common Specifications

Temperature range	-25 °C to +70 °C
Power derating	3.75% / °C (above 55°C)
Case temperature	+90 °C (max)
Storage	-25 °C to +105 °C
Hold up Time	80mS, typ. (230VAC)
Humidity (non condensing)	85%, max.
Temperature Coefficient	0.02%/°C (main output) 0.15%/°C (supplement output)
Switching Frequency	150kHz, max.
I/O Isolation Voltage	3000VAC / 1min.
Leakage current	0.3mA RMS typ. (230VAC / 50Hz)
EMI / RFI conducted	EN55022, level B
EMC compliance	ESD IEC/EN 61000-4-2 level 3 6KV/8KV RF IEC/EN 61000-4-3 EFT / bursts IEC/EN 61000-4-4 level 3 2KV Surge IEC/EN 61000-4-5 level 3 1KV / 2KV
Safety Standarts	IEC60950, EN60950, UL60950
Safety Approvals	EN60950, IEC60950, UL60950
Safety Class	CLASS 1
Case Material	UL94V-0 rated
Reliability Calculated MTBF (MIL-HDBK-217F)	> 300,000 hrs
Weight	50g (PPM05) 70g (PPM10) 80g (PPM15) 120g (PPM20)

Notes:

Selection Guide

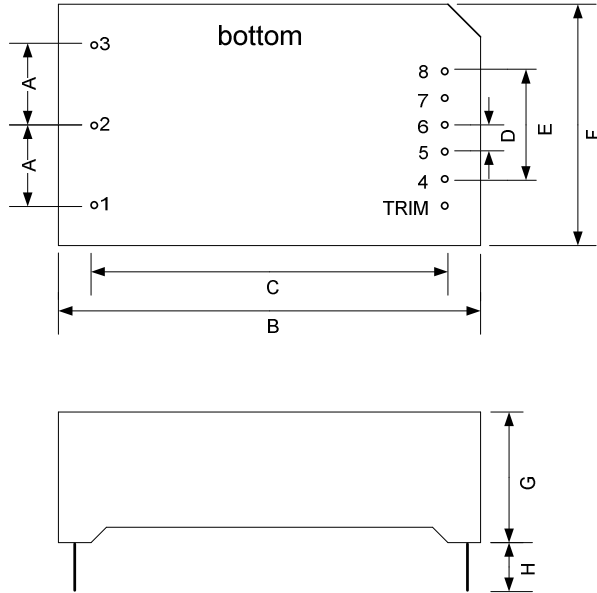
Triple Output

Order #	Power (W)	Out1 / Out2 Voltage (VDC)	Out1 / Out2 Current Full Load (mA)	Efficiency (%)
TRIPLE OUTPUT				
PPM05-A-0505DLF	5	5 / ± 5	800 / ± 100	70
PPM05-A-0512DLF	5	5 / ± 12	600 / ± 100	73
PPM05-A-0515DLF	5	5 / ± 15	600 / ± 80	74
PPM05-A-0524DLF	5	5 / ± 24	600 / ± 50	75
PPM10-B-0512DLF	10	5 / ± 12	1000 / ± 200	75
PPM10-B-0515DLF	10	5 / ± 15	900 / ± 200	75
PPM15-C-0505DLF	15	5 / ± 5	2000 / ± 500	75
PPM15-C-0512DLF	15	5 / ± 12	2000 / ± 200	77
PPM15-C-0515DLF	15	5 / ± 15	1800 / ± 200	78
PPM15-C-0524DLF	15	5 / ± 24	2000 / ± 100	78
PPM20-D-0512DLF	20	5 / ± 12	2000 / ± 400	75
PPM20-D-0515DLF	20	5 / ± 15	2000 / ± 300	76
PPM20-D-0524DLF	20	5 / ± 24	2000 / ± 200	77

If you need other specifications, please enquire.

Notes:

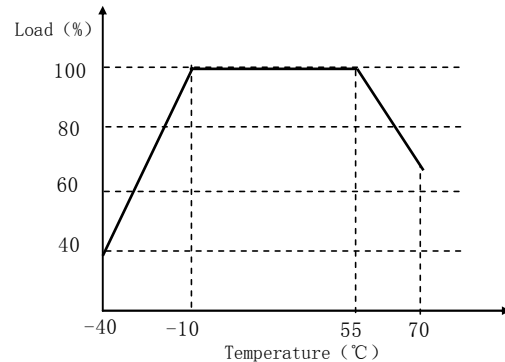
Package / Pinning / Derating



No.	PPM05-A	No.	PPM10-B
A	12.5	A	17.5
B	48.5	B	55.0
C	40.5	C	47.0
D	4.0	D	5.0
E	16.0	E	20.0
F	36.0	F	45.0
G	20.5	G	20.5
H	min. 6.0	H	min. 6.0

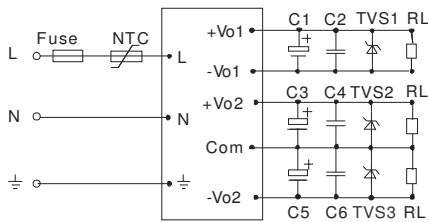
No.	PPM15-C	No.	PPM20-D
A	17.5	A	20.0
B	62.0	B	70.0
C	54.0	C	62.0
D	5.0	D	5.75
E	20.0	E	23.0
F	48.0	F	48.0
G	22.5	G	23.5
H	min. 6.0	H	min. 6.0

PIN CONNECTIONS	
#	TRIPLE
1	Ground
2	AC (N)
3	AC (L)
4	- Vout 1
5	+Vout 1
6	- Vout 2
7	Common
8	+Vout 2
TRIM	No Pin



App Notes:

(Triple Output)



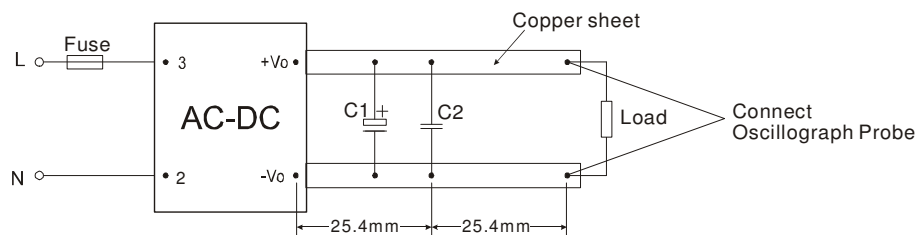
Remark:

- Output filtering capacitors C1, C2 and C3 are electrolytic capacitors, It is recommended to use high frequency and low impedance electrolytic capacitors. For capacitance and current of capacitor please refer to manufacture's datasheet. Voltage derating of capacitor should be 80% or above. C2, C4, C6 are use to filter high frequency noise. TVS is recommended component to protect post-circuits (if converter fails).
- External input NTC is recommended to use 5D-9 (Only PPM10 models and PPM15 models)

EXTERNAL CAPACITORS TYPICAL VALUE (μF)

MODEL	C1	C3	C5
PPM05-A-0505DLF	220	22	22
PPM05-A-0512DLF	120	22	22
PPM05-A-0515DLF	120	22	22
PPM05-A-0524DLF	120	22	22
PPM10-B-0512DLF	220	68	68
PPM10-B-0515DLF	220	47	47
PPM15-C-0505DLF	470	220	220
PPM15-C-0512DLF	470	120	120
PPM15-C-0515DLF	470	120	120
PPM15-C-0524DLF	470	120	120
PPM20-D-0512DLF	330	120	120
PPM20-D-0515DLF	330	120	120
PPM20-D-0524DLF	330	47	47

Parallel Lines Measure



Notes: