

AC/DC POWER MODULS



PPM SERIES 5W, 10W, 15W, 20W

PPM---- are high efficiency green power modules 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 and IEC60950.

PRODUCT FEATURES

1. Universal Input :85 to 264VAC,50/60Hz
2. AC and DC all in one (input from the same terminal)
3. Low Ripple and Noise
4. Overload protection and short circuit protection
5. High Efficiency, High power density
6. Low power with no load, green power
7. Multiple models available
8. Meet industrial level specifications and requirements
9. 3 years warranty

MODEL SHEET

Model	Package	Power	Output (Vo1/Io1)	Output (Vo2/Io2)	Ripple and Noise	Efficiency (%) (TYP)				
PPM5-A-05ELF PPM5-A-12ELF PPM5-A-15ELF PPM5-A-24ELF	48.5X36X20.5mm -A-	5W	5V/1000mA 12V/420mA 15V/330mA 24V/230mA		50mV	76				
PPM5-A-05ZLF PPM5-A-12ZLF PPM5-A-15ZLF			+5V/500mA +12V/210mA +15V/160mA	-5V/500mA -12V/210mA -15V/160mA						
PPM5-A-0505DLF PPM5-A-0512DLF PPM5-A-0515DLF PPM5-A-0524DLF			5V/900mA 5V/700mA 5V/700mA 5V/700mA	± 5V/100mA ± 12V/100mA ± 15V/80mA ± 24V/50mA						
PPM5-A-0505ZSLF PPM5-A-0512ZSLF PPM5-A-0515ZSLF PPM5-A-0524ZSLF			5V/900mA 5V/750mA 5V/700mA 5V/600mA	5V/100mA 12V/100mA 15V/100mA 24V/100mA						
PPM10-B-05ELF PPM10-B-12ELF PPM10-B-15ELF PPM10-B-24ELF			55X45X20.5mm -B-	10W			5V/2000mA 12V/900mA 15V/700mA 24V/450mA		50mV	78
PPM10-B-05ZLF PPM10-B-12ZLF PPM10-B-15ZLF							+5V/1000mA +12V/450mA +15V/350Ma	-5V/1000mA -12V/450mA -15V/350mA		
PPM10-B-0505DLF PPM10-B-0512DLF PPM10-B-0515DLF PPM10-B-0524DLF							5V/1800mA 5V/1600mA 5V/1400mA 5V/1000mA	± 5V/100mA ± 12V/100mA ± 15V/100mA ± 24V/100mA		
PPM10-B-0505ZSLF PPM10-B-0512ZSLF PPM10-B-0515ZSLF PPM10-B-0524ZSLF							5V/1800mA 5V/1500mA 5V/1400mA 5V/1000mA	5V/200mA 12V/200mA 15V/200mA 24V/200mA		

MODEL SHEET

Model	Package	Power	Output (Vo1/Io1)	Output (Vo2/Io2)	Ripple and Noise	Efficiency (%) (TYP)
PPM15-C-05ELF PPM15-C-12ELF PPM15-C-15ELF PPM15-C-24ELF	62X45X22.5mm -C-	15W	5V/2800mA 12V/1250mA 15V/1000mA 24V/625mA		50mV	80
PPM15-C-05ZLF PPM15-C-12ZLF PPM15-C-15ZLF			+5V/1500mA +12V/650mA +15V/500mA	-5V/1500mA -12V/650mA -15V/500mA		
PPM15-C-0505DLF PPM15-C-0512DLF PPM15-C-0515DLF PPM15-C-0524DLF			5V/2600mA 5V/2000mA 5V/1800mA 5V/2000mA	±5V/200mA ±12V/200mA ±15V/200mA ±24V/100mA		
PPM15-C-0505ZSLF PPM15-C-0512ZSLF PPM15-C-0515ZSLF PPM15-C-0524ZSLF			5V/2800mA 5V/2500mA 5V/2400mA 5V/2000mA	5V/200mA 12V/200mA 15V/200mA 24V/200mA		
PPM20-C-48ELF	62X45X22.5mm	20W	48V/420mA		50mV	85
PPM20-D-05ELF PPM20-D-12ELF PPM20-D-15ELF PPM20-D-24ELF	70X48X23.5mm -D-	20W	5V/3500mA 12V/1600mA 15V/1300mA 24V/850mA		50mV	82
PPM20-D-05ZLF PPM20-D-12ZLF PPM20-D-15ZLF			+5V/2000mA +12V/830mA +15V/650mA	-5V/2000mA -12V/830mA -15V/650mA		
PPM20-D-0505DLF PPM20-D-0512DLF PPM20-D-0515DLF PPM20-D-0524DLF			5V/3200mA 5V/2500mA 5V/2800mA 5V/2000mA	±5V/400mA ±12V/300mA ±15V/200mA ±24V/200mA		
PPM20-D-0505ZSLF PPM20-D-0512ZSLF PPM20-D-0515ZSLF PPM20-D-0524ZSLF			5V/3400mA 5V/2800mA 5V/2500mA 5V/2500mA	5V/600mA 12V/500mA 15V/500mA 24V/300mA		

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 models only. For specifications of non-standard models, please contact our technical support team.

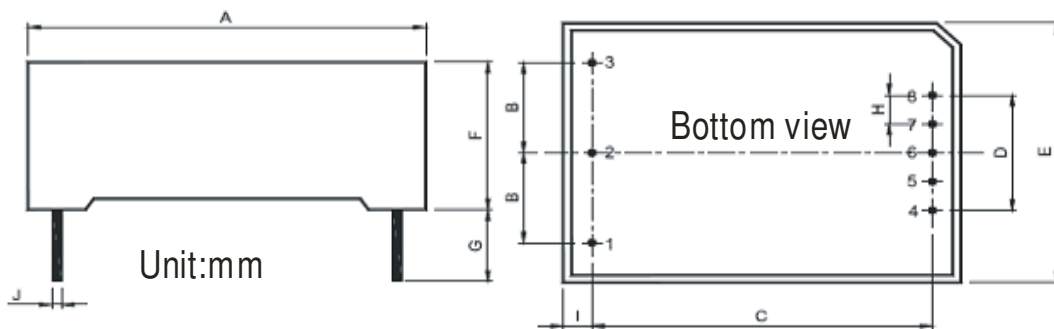
INPUT SPECIFICATIONS	
Input voltage range	100VAC to240VAC (85 to264VAC) 140VDC to340VDC (120 to370VDC)
Input frequency	47Hz to 63Hz
External input fuse(recommended)	2A slow blow

OUTPUT SPECIFICATIONS	
Voltage set accuracy	± 2%
Input variation	± 0.5%
Load variation (10-90%)	± 1%
Single output models	± 2%
Dual output models	Vo1 ± 3% (Main output)
Isolated triple output	± Vo2 ± 5% (Supplement output)
Isolated and separated twin output	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	> 115%Io

GENERAL SPECIFICATIONS	
Temperature ranges	
Operating :	-20 °C to +70 °C
Storage:	-25 °C to +105 °C
Case temperature	+90 °C
Reducing rating temperature:	55 °C
Hold-up time	80ms typ / at Vin:230VAC
Humidity (non condensing)	85%(max)
Temperature coefficient	0.02% / °C
Switching frequency	150kHz max
Efficiency	78% typ
I/O-isolation voltage	3000VAC 1Min
Leakage current	0.3mA RMS typ./230VAC/50Hz
EMI/RFI conducted	EN55022, level B
EMC compliance	
Electrostatic discharge ESD	IEC/EN 61000-4-2 level 3
RF field susceptibility	IEC/EN 61000-4-3
Electrical fast transients/bursts on main sline	IEC/EN 61000-4-4 level 3 2kV
Surge	IEC/EN 61000-4-5 level 3 1kV/2kV
Safety standards	IEC60950,IEN60950,
Safety approvals	IEN60950, IEC60950
Safety Class	CLASS 1
Case material	UL94V-0
Install	PCB
MTBF	200,000h @25 °C

OUTLINE AND DIMENSIONS

PACKAGE DIMENSIONS: (mm)



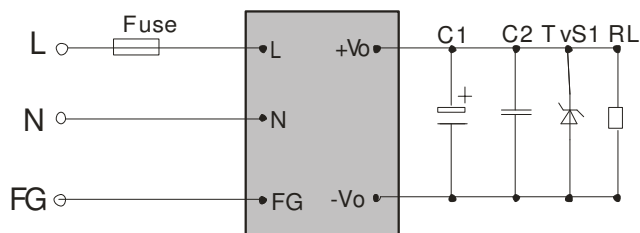
	PPM05-XXXX	PPM10-XXXX	PPM15-XXXX	PPM20-XXXX
A	48.5±0.5	55±0.5	62±0.5	70±0.5
B	12.5±0.5	17.5±0.3	17.5±0.3	20.0±0.3
C	40.5±0.5	47±0.5	54±0.5	62±0.5
D	16±0.3	20±0.3	20±0.5	23±0.3
E	36±0.5	45±0.5	45±0.5	48±0.5
F	20.5±0.5	20.5±0.5	22.5±0.5	23.5±0.5
G	4min	4min	4min	4min
H	4.0±0.3	5.0±0.3	5.0±0.3	5.75±0.3
I	4.0	4.0	4.0	4.0
J	1.0±0.1	1.0±0.1	1.0±0.1	1.0±0.1

PIN DEFINITION

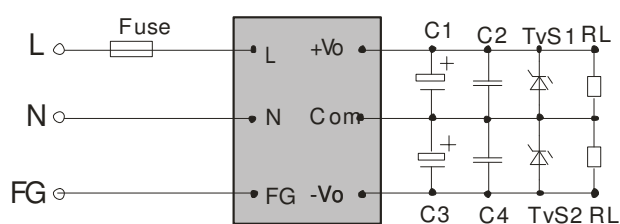
	1	2	3	4	5	6	7	8
E - SINGLE	FG	AC (N)	AC (L)	-Vo1	NP	NP	NP	+Vo1
Z - DUAL	FG	AC (N)	AC (L)	-Vo2	NP	COM	NP	+Vo1
D - TRIPLE	FG	AC (N)	AC (L)	-Vo1	+Vo1	-Vo2	COM	+Vo2
ZS- DUAL SEPARATE	FG	AC (N)	AC (L)	-Vo1	+Vo1	NP	-Vo2	+Vo2

TYPICAL APPLICATIONS

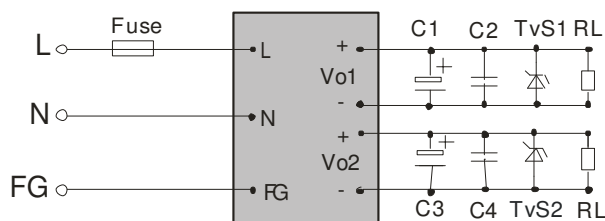
Single output:



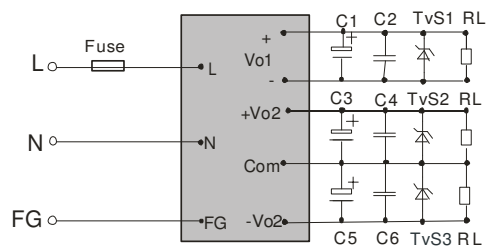
Dual output:



Isolate Twin Output:



Triple output:



EXTERNAL TYPICAL VALUE

Vout	C1/C3/C5	C2/C4/C6	FUSE	TVS	REMARKS
5V	680uF/16V	0.1uF/50V Ceramic Capacitor	1A/250V	P6KE6.8A	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).
12V	220uF/25V			P6KE16A	
15V	220uF/25V			P6KE20A	
24V	120uF/35V			P6KE33A	

PARALLEL LINES MEASURE

