

### Input Specifications

Input voltage range	85- 264 VAC, 110- 370 VDC	
Input frequency	47- 440 Hz	
Input current	110 VAC 65mA , typ.	230 VAC 30mA , typ.
Inrush current	110 VAC 10A, typ.	230 VAC 20A, typ.
External input fuse(recommended)	PPM03-S-xxELF	0.5A/250V    slow blow

### Output Specifications

Voltage set accuracy	± 2%, typ. (± 3% at 3.3 Vout)	
Input variation	± 0.5%, typ.	
Load variation (10-100%)	Single output models	± 1%, typ.
Ripple& noise (p-p)	20MHz Bandwidth	30mV, typ.
Short circuit protection	Continuous, and auto resume	
Over temperature protection	150°C, max.	
Over output voltage protection	Chip lock up	

### General Specifications

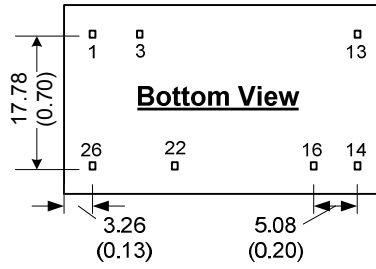
Temperature ranges	Operating : Power derating above 55°C: Storage: Case temperature:	-25°C to +70°C 2% / °C -40°C to +105°C +95°C max
Weight		~ 25g
Hold-up time	(Vin=230VAC)	50ms(typ.)
Humidity (non condensing)		95%(max)
Temperature coefficient		0.02% / °C
Switching frequency		100kHz, typ.
Efficiency		See table
I/O-isolation voltage		3000 VAC / 1Min
Leakage current		None
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)	OUTPUT (Volt)	RIPPLE AND NOISE (typ..)	EFFICIENCY (% min.)
PPM03-S-3.3ELF	2.3	3.3V / 700mA	30mV	63
PPM03-S-05ELF	3	5V / 600mA	30mV	72
PPM03-S-09ELF	3	9V / 330mA	30mV	74
PPM03-S-12ELF	3	12V / 250mA	30mV	76
PPM03-S-15ELF	3	15V / 200mA	30mV	76
PPM03-S-24ELF	3	24V / 125mA	30mV	78

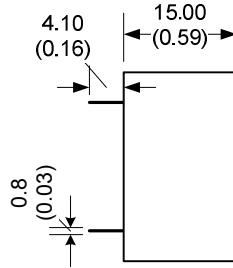
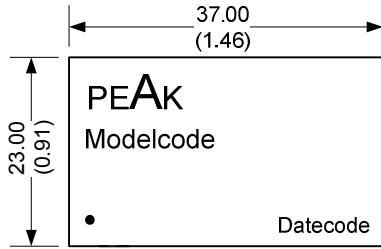
Other specifications please enquire.

**Dimensions / Pinning**



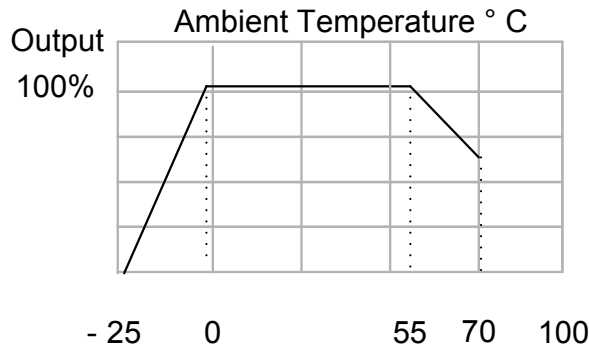
All dimensions are typical in millimeters (inches).  
 - Pin diameter: 0.5 +/-0.05 (0.02 +/-0.002)  
 - Pin pitch tolerance: +/-0.35 (+/-0.014)  
 - Case tolerance +/-0.5 (+/-0.02)  
 Specification may change without notice.

**DIP26 – PLASTIC CASE**



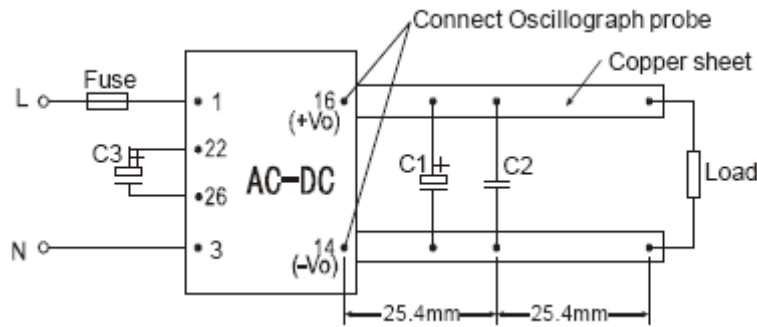
PINNING PPM03-S-xxELF	
#	Single out
1	AC (L)
3	AC (N)
13	No Connection
14	- V Output
16	+V Output
22	+Vin (DC)
26	- Vin (DC)

**Temperature Derating Graph**

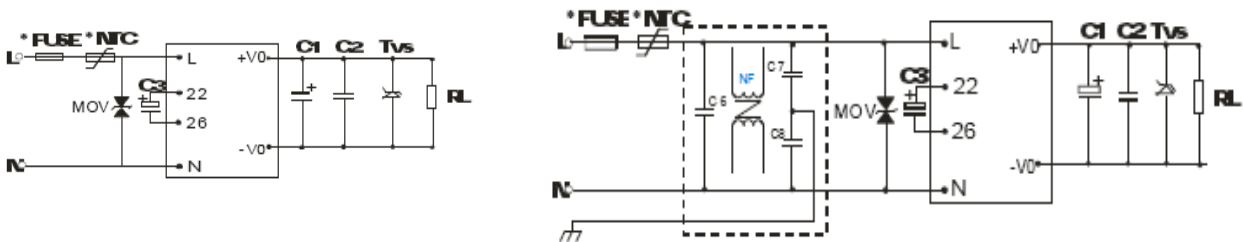


App Notes

Measure



Typical Applications PPM-Series



External Typical Value

Model	C1	C2	C3	TVS
PPM03-S-3.3ELF	150	0.1	4.7/400V	P4KE6.8A
PPM03-S-05ELF	150	0.1	4.7/400V	P4KE6.8A
PPM03-S-09ELF	120	0.1	4.7/400V	P4KE12A
PPM03-S-12ELF	120	0.1	4.7/400V	P4KE20A
PPM03-S-15ELF	120	0.1	4.7/400V	P4KE20A
PPM03-S-24ELF	68	0.1	4.7/400V	P4KE30A

Note

- Output filtering capacitors C1, C3 is 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 is ceramic capacitor, it is used to filter high frequency noise. TVS is a recommended component to protect post-circuits (when converter fails).
- MOV is required to PPM03 models, model: 471KD05, it is used to protect the device under surge.
- It is recommended to connect FUSE, the parameter for PPM03 models is 0.5A/250V slow blow. External input NTC is recommended to use 5D-14 or 10Ω/2W wire-round resistor.
- If EMC performance is required, recommended to add "EMC filter" at the input end C6:X capacitor, recommended parameter 0.1uF/275V; C7,C8:Y capacitor, recommended parameter 220pF/2000V; NF: common model choke, recommended inductance is about 10mH-30mH.
- PPM03 models: Terminals 22 and 26 are internal rectification and filtering terminals. To protect the models further, it is recommended to connect an electrolytic capacitor C3 (it is recommended to be 4.7uF/400V). If operation voltage of the module is between 160~264VAC, C3 can be removed.