

PPMxx-SIP-xxELF



PPM-SIP-SERIES Rev.08-2011

- ✓ 1.65 - 3 Watt
- ✓ Univ. 100-400VDC / 85-264VAC*
- ✓ Single Output
- ✓ Over Temperature Protection
- ✓ Short Circuit Protection
- ✓ 2 kV AC I/O Isolation
- ✓ High Efficiency / Density

The PPM-SIP-Series are high efficiency green power modules with miniature 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, as well as applications where no special requirement for EMC performance. It is recommended to add EMI suppression circuit or take measure to shield when there is strict requirement for EMC performance.

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

Input Specifications

Input Voltage Range	100 – 400 VDC or 85 – 264 VAC* universal
Input Current	40mA, typ.
External Input Fuse (recommended)	0.5A / 250V

* **Attention: For AC-Input a capacitor between PIN 7 and PIN 10 is needed!! (See page 3)**

Output Specifications

Voltage Accuracy	±2%
Input variation	±0.5%, typ.
Load variation (10-100%)	±1%, typ.
Ripple and Noise (20Mhz bandwidth)	
3.3 / 5 / 9 VDC models	≤ 100mV pk-pk
12 VDC models	≤ 120mV pk-pk
15 VDC models	≤ 150mV pk-pk
24VDC models	≤ 240mV pk-pk

Short Circuit Protection	Continuous, auto recovery
Over Temperature Protection	150°C, max.

Common Specifications

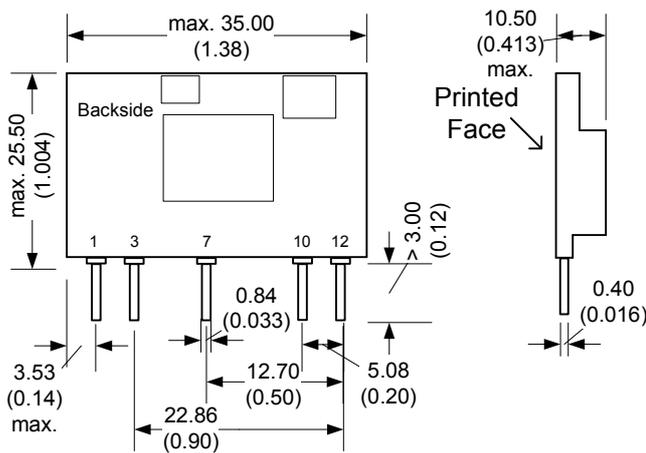
Temperature range	-40°C to +85 °C
Power derating	1.33% / °C (above 55°C)
Case temperature	+90°C, max.
Storage	-40°C to +105 °C
Humidity (non condensing)	85%, max.
Temperature Coefficient	0.02%/°C
Switching Frequency	100kHz, typ.
I/O Isolation Voltage	2000VAC / 1min.
Leakage current	None
Case Material	UL94V-0 rated
Reliability Calculated MTBF (MIL-HDBK-217F)	> 300,000 hrs

Selection Guide

Order #	Power (W)	Output Voltage (Vdc)	Output Current Full Load (mA)	Efficiency (%)
SINGLE OUTPUT				
PPM1.65-SIP-3R3ELF	1.65	3.3	500	70
PPM2.5-SIP-05ELF	2.5	5	500	70
PPM3-SIP-09ELF	3	9	330	75
PPM3-SIP-12ELF	3	12	250	78
PPM3-SIP-15ELF	3	15	200	78
PPM3-SIP-24ELF	3	24	125	78

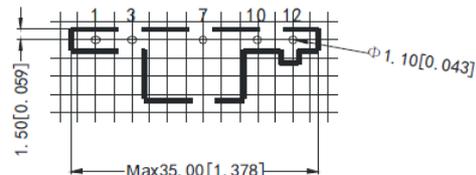
If you need other specifications, please enquire.

Package / Pinning / Derating

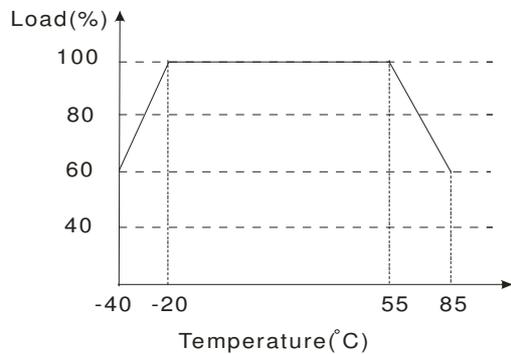


All dimensions are typical in millimeters (inches).
 - Pin section tolerance: +/-0.10 (+/-0.004)
 - Case tolerance +/-0.5 (+/-0.02)
 Specification may change without notice.

SIP - AC/DC

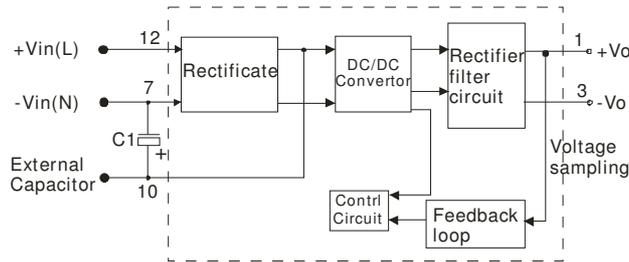


PIN CONNECTIONS	
#	SINGLE
1	+Vout
3	- Vout
7	- Vin
10	CAP
12	+Vin

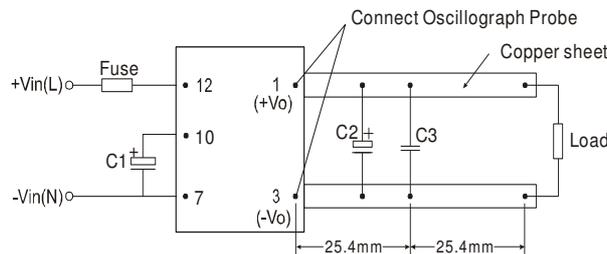


App Notes:

Structure Figure

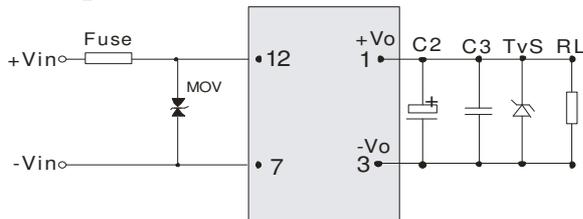


Anear Measure

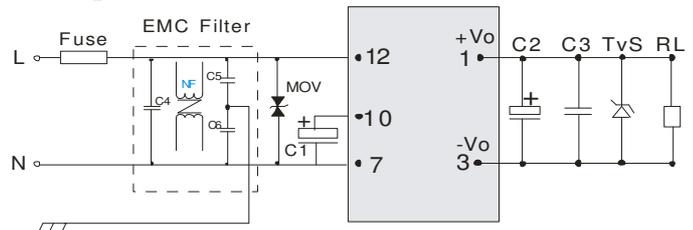


Typical Application

DC Input



AC Input



Attention: For AC-Input a capacitor (10uF/400V) between PIN 7 and PIN 10 is needed!!

External Capacitor Typical Value

Output Voltage	C1	C2	C3	FUSE	TVS
3.3V	10μF/400V	150μF/25V	0.1μF/50V (Ceramic Capacitor)	0.5A/250V	P4KE6.8A
5V					P4KE12A
9V		100μF/35V			P4KE20A
12V					P4KE33A
15V					
24V					

Note:

- Filtering capacitors C1, C2 are electrolytic capacitors, C1 is used for AC input, when input voltage is below 100VAC, the value of C1 is 22μF/400V. C2 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. C3 is ceramic capacitor. It is used to filter high frequency noise. TVS is a recommended component to protect post-circuits (if converter fails).
- MOV: Voltage dependent resistor, model 471KD05. It is used to protect converter in lightning strike and surge.
- If EMC performance is required, it's recommended to add "EMC filter" at the input side. C4: X capacitor: 0.1μF/275V C5,C6: Y capacitor: 220pF/2000V NF: Common-mode choke, recommended parameter: 10mH-30mH