

# PPM20-E-xxELF



## PPM-SERIES

Rev.04-2012

- ✓ **20 Watt**
- ✓ Univ. **85-264VAC** (120-370VDC)
- ✓ **Single Output**
- ✓ **Over Voltage Protection** (out)
- ✓ **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.

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

### Input Specifications

Input Voltage Range	85 – 264 VAC <b>or</b> 120 – 370 VDC universal	
Input Frequency	47 – 440 Hz	
Input (Inrush) Current	<u>110 VAC</u> 370 mA (20A), typ.	<u>230 VAC</u> 240mA (40A), typ.
External Input Fuse (recommended)	3.15A / 250V	slow blow

### Output Specifications

Voltage Accuracy	±2%, typ (±3% at 3.3 Vout)
Input variation	±0.5%, typ
Load variation (10-100%)	±1% , typ
Ripple and Noise (20Mhz bandwidth)	120mV pk-pk, max
Short Circuit Protection	Continuous, auto resume
Over current protection	> 110% Io, auto resume

### Common Specifications

Temperature range	-40 °C to +70 °C	
Power derating	2.5% / °C (above 40 °C)	
Case temperature	+95 °C (max)	
Storage	-40 °C to +105 °C	
Hold up Time	50mS, typ. (230VAC)	
Humidity (non condensing)	95%, max.	
Temperature Coefficient	± 0.02%/°C	
Switching Frequency	100kHz, typ	
I/O Isolation Voltage	3000VAC / 1min.	
Leakage current	0.75mA, (max at Vin 240VAC)	
EMI / RFI conducted	EN55022, level B	
EMC compliance	ESD	EN55024/IEC/EN 61000-4-2 level 4 8kV/15kV
	RF	EN55024/IEC/EN 61000-4-3 level 4 10V/m
	EFT / bursts	EN55024/IEC/EN 61000-4-4 level 4 4kV
	Surge	EN55024/IEC/EN 61000-4-5 level 4 2kV/4kV
Safety Standards	IEC60950, EN60950, UL60950	
Safety Approvals	EN60950, UL60950 (pending)	
Safety Class	CLASS 2	
Case Material	UL94V-0 rated	
Reliability Calculated MTBF (MIL-HDBK-217F)	> 300,000 hrs	
Weight	~ 50g	

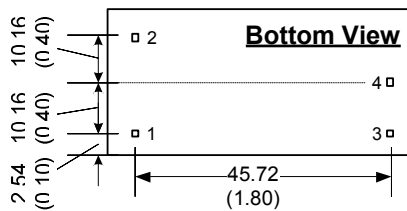
# Selection Guide

## Single Output

Order #	Power (W)	Output Voltage (Vdc)	Output Current Full Load (mA)	Efficiency (%)
<b>SINGLE OUTPUT</b>				
PPM20-E-3R3ELF	11.8	3.3	3600	74
PPM20-E-05ELF	18	5	3600	78
PPM20-E-12ELF	20	12	1660	82
PPM20-E-15ELF	20	15	1330	83
PPM20-E-24ELF	20	24	833	83

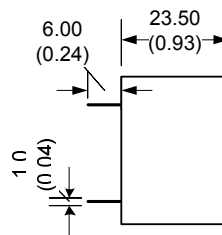
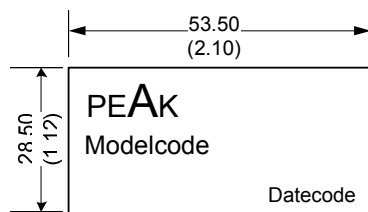
If you need other specifications, please enquire.

## Package / Pinning / Derating

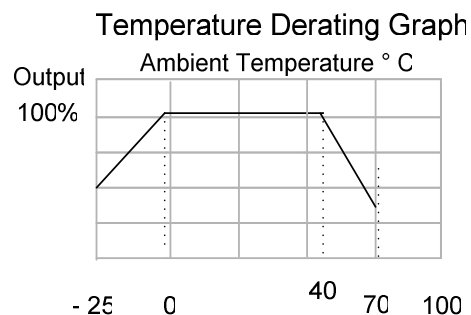


All dimensions are typical in millimeters (inches).  
 - Pin diameter: 1.0 +/-0.10 (0.04 +/-0.004)  
 - Pin pitch tolerance: +/-0.35 (+/-0.014)  
 - Case tolerance +/-0.5 (+/-0.02)  
 Specification may change without notice.

### 2" x 1" – PLASTIC CASE

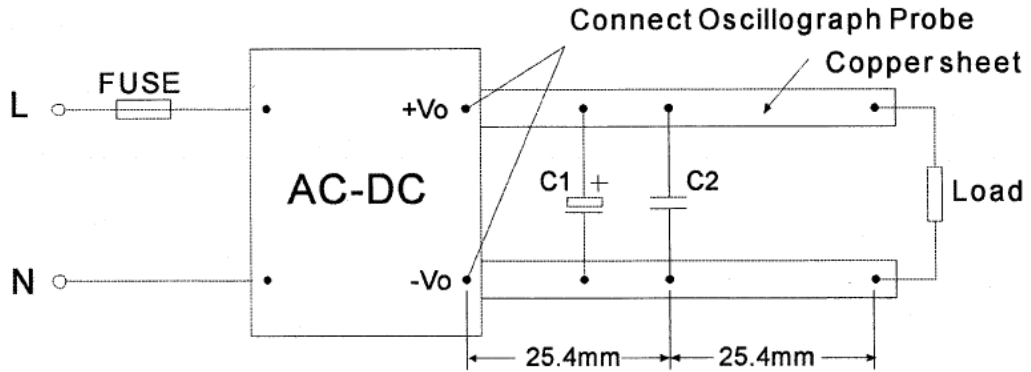


PIN CONNECTIONS	
#	SINGLE
1	AC (N)
2	AC (L)
3	+ Vout
4	- Vout

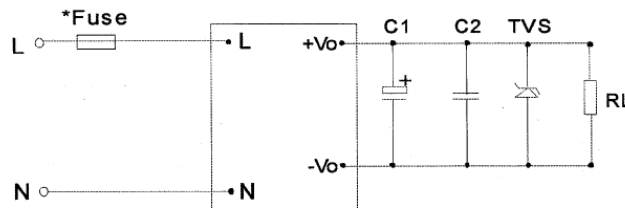


# App Notes:

## Measure



## Typical Applications PPM-Series



### External Typical Value

Model	C1	C2	TVS
PPM20-E-3R3ELF	220 $\mu$ F/10V	0.1 $\mu$ F/50V	P6KE6.8A
PPM20-E-05ELF	220 $\mu$ F/10V	0.1 $\mu$ F/50V	P6KE6.8A
PPM20-E-12ELF	120 $\mu$ F/25V	0.1 $\mu$ F/50V	P6KE20A
PPM20-E-15ELF	120 $\mu$ F/25V	0.1 $\mu$ F/50V	P6KE20A
PPM20-E-24ELF	68 $\mu$ F/25V	0.1 $\mu$ F/50V	P6KE30A

### Note

1. Output filtering capacitors C1 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 (if converter fails).
2. External connect FUSE, recommended the parameter is 3.15A/250V slow blow.