PPM03-S-xxELF

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PPM-SERIES Rev.05-2011

- ✓ **3 Watt**
- ✓ Univ. **85-264VAC** (110-370VDC)
- ✓ **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. EMC and safety standards meet international standards IEC61000 UL60950 and IEC60950, and Multi-certificate is in processing.

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

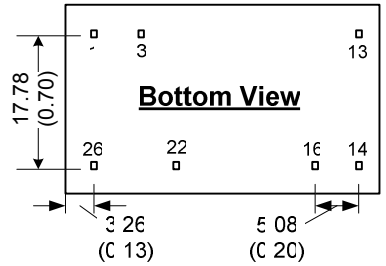
Input Specifications		
Input Voltage Range		85 – 264 VAC **or** 110 – 370 VDC universal
Input Frequency		47 – 440 Hz
Input (Inrush) Current		110 VAC / 230 VAC
	PPM03 models	65 mA (10A), typ. / 30mA (20A), typ.
External Input Fuse (recommended)		0.5A / 250V slow blow
Output Specifications		
Voltage Accuracy		±2%, typ (±3% @3.3 Vout)
Input variation		±0.5%
Load variation (10-100%)		±1%
Ripple and Noise (20Mhz bandwidth)		≤ 60mV pk-pk
Short Circuit Protection		Continuous, auto recovery
Over output voltage protection		Chip lock up
Common Specifications		
Temperature range		-25℃ to +70 ℃
Power derating		2% / ℃
Case temperature		+95℃ (max)
Storage		-40℃ to +105 ℃
Hold up Time		50mS, typ. (230VAC)
Humidity (non condensing)		95%, max.
Temperature Coefficient		0.02%/℃ (main output)
Switching Frequency		100kHz
I/O Isolation Voltage		3000VAC / 1min.
Leakage current		None
EMI / RFI conducted		EN55022, level A
EMC compliance	ESD	IEC/EN 61000-4-2 level 4 8KV/15KV
	RF	IEC/EN 61000-4-3
	EFT / bursts	IEC/EN 61000-4-4 level 3
	Surge	IEC/EN 61000-4-5 level 3 1KV/2KV
Safety Standarts		IEC60950, EN60950, UL60950
Safety Approvals		EN60950, UL60950
Safety Class		CLASS 2
Case Material		UL94V-0 rated
Reliability Calculated MTBF (MIL-HDBK-217F)		> 300,000 hrs
Weight		~ 40g

Selection Guide
Single Output

Order #	Power (W)	Output Voltage (Vdc)	Output Current Full Load (mA)	Efficiency (%)
SINGLE OUTPUT				
PPM03-S-3R3ELF	2.3	3.3	700	63
PPM03-S-05ELF	3	5	600	72
PPM03-S-09ELF	3	9	330	74
PPM03-S-12ELF	3	12	250	76
PPM03-S-15ELF	3	15	200	76
PPM03-S-24ELF	3	24	125	78

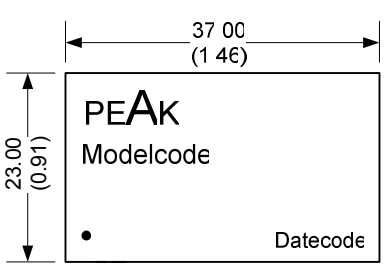
If you need other specifications, please enquire.

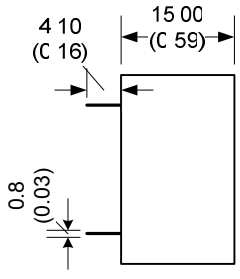
Package / Pinning / Derating



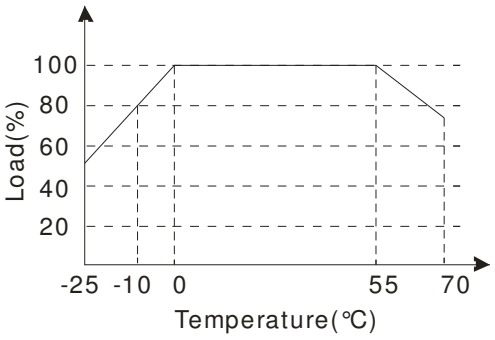
All dimensions are typical in millimeters (inches)
- Pin diameter 0 5 +/-0 05 (0 02 +/-0 002)
- Pin pitch tolerance: +/-0 35 (+/-0 014)
- Case tolerance +/-0 5 (+/-0 02)
Specification may change without notice

DIP26 – PLASTIC CASE

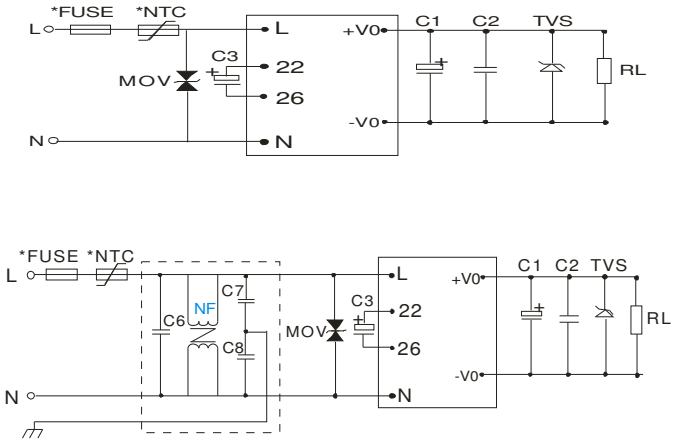




PIN CONNECTIONS	
#	SINGLE
1	AC (L)
3	AC (N)
13	N.C.
14	- Vout
16	+Vout
22	+Vin (DC)
23	- Vin (DC)



App Notes:



PPM03 EMC Application Figure

EXTERNAL CAPACITORS TYPICAL VALUE(Unit: µF)				
Model	C1	C2	C3	TVS
PPM03-S-3R3ELF	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:

1. 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 (if converter fails).
2. MOV is required to PPM03 models to protect the device under surge.
3. It is recommended to connect FUSE
4. If EMC performance is required, recommended to add "EMC filter" at the input end (see figures)
   C6: X capacitor, recommended parameter 0.1µF/275V;
   C7,C8: Y capacitor, recommended parameter 2200pF/400V;
   NF: common model choke, recommended inductance is about 10mH-30mH.
5. 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 4.7µF/400V). If operation voltage of the module is between 160~264VAC, C3 can be removed.