

P30WG-xxxxE/Z2:1LF



PMT-SERIES

Rev.11-2009

- ✓ 30 Watt
- ✓ **2:1 Wide Input**
- ✓ **2" x 1" Metal Case**
- ✓ **1.6 kV DC I/O Isolation**
- ✓ **Regulated Output**
- ✓ **Single and Dual Output**
- ✓ **Continuous Short Circuit Prot.**

The PMT series P30WG-xxxxE/Z2:1LF is a family of cost effective 30W, single and dual output DC-DC converters with a wide input range of 2:1. These converters are encapsulated in nickel coated brass 2"x1" case with high performance features: 1600VDC input/output isolation voltage, continuous short circuit protection with automatic restart and tight line / load regulation, over current protection, over voltage protection, over temperature protection, high efficiency operation and soft start.

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

Input Specifications

Voltage Range	2:1 Wide Input (see table)
Input Filter	PI Type
Input Reflected Ripple Current ¹	20 mA pk-pk
Start up Time (Nom. Vin and constant resistive load)	30mS, typ.

Output Specifications

Voltage Accuracy	± 1%
Voltage Adjustability (only Single Output)	± 10%, max.
Short Circuit Protection	Indefinite (hiccup, automatic recovery)
Over Load Protection	150% of FL, typ.
Line Regulation	± 0.5%, max.
Load Regulation (0% - 100%)	± 0.5% (single) ±1% (dual balanced load), max.
Cross Regulation ³	± 5% (dual)
Ripple&Noise (20Mhz bandwidth / 1.0uF – pk-pk)	100 mV, max.
Temperature Coefficient	± 0.02% / °C
Transient Recovery Time ⁴	250us, typ.
Transient Response Deviation ⁴	± 3%, max.

General Specifications

I/O Isolation Voltage (3 sec.)	1600 VDC
I/O Isolation Capacitance	1500 pF, typ.
I/O Isolation Resistance	1000 M Ohm, min.
Switching Frequency	330 kHz, typ.
Humidity	95% rel H
Reliability Calculated MTBF (MIL-HDBK-217F)	>435 khrs

Physical Specifications

Case Material	Nickel Coated Copper
Potting / Base Material	Epoxy / Plastic (UL94V-0 rated)
Weight	~ 31g, typ.

Environment Specifications

Operating Temperature	-40 to +50°C (for 100% - ambient)
Maximum Case Temperature	105°C
Storage Temperature	-40 to +125°C
Cooling	Free Air Convection (10mm distance required)
RoHS Conform	Soldering 260°C, max. (1.5mm from case 10s.)

Selection Guide

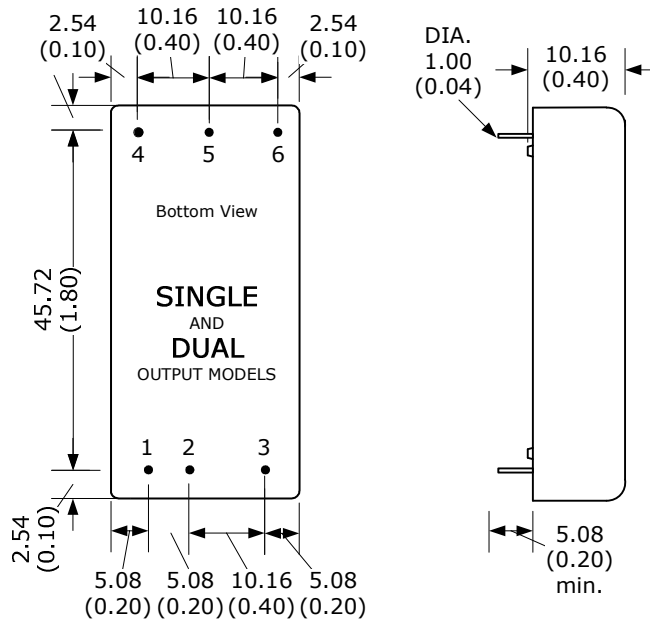
Single and Dual Output

Order #	Input Voltage (VDC)	Input Current No Load (mA)	Input Current Full Load (mA)	Output Voltage (VDC)	Output Current Min. Load (mA)	Output Current Full Load (mA)	Efficiency (%)	Capacitor Load (uF) ²
SINGLE OUTPUT								
P30WG-123R3E2:1LF	9-18	80	2426	3.3	0	8000	89	20000
P30WG-1205E2:1LF	9-18	180	2874	5	0	6000	91	14000
P30WG-125R1E2:1LF	9-18	160	2874	5.1	0	6000	92	14000
P30WG-1212E2:1LF	9-18	30	2809	12	0	2500	91	2000
P30WG-1215E2:1LF	9-18	30	2809	15	0	2000	92	2000
P30WG-243R3E2:1LF	18-36	70	1185	3.3	0	8000	91	20000
P30WG-2405E2:1LF	18-36	100	1420	5	0	6000	92	14000
P30WG-245R1E2:1LF	18-36	100	1448	5.1	0	6000	92	14000
P30WG-2412E2:1LF	18-36	20	1436	12	0	2500	92	2000
P30WG-2415E2:1LF	18-36	40	1420	15	0	2000	92	2000
P30WG-483R3E2:1LF	36-72	50	593	3.3	0	8000	90	20000
P30WG-4805E2:1LF	36-72	70	702	5	0	6000	91	14000
P30WG-485R1E2:1LF	36-72	70	724	5.1	0	6000	91	14000
P30WG-4812E2:1LF	36-72	30	718	12	0	2500	91	2000
P30WG-4815E2:1LF	36-72	30	710	15	0	2000	91	2000
DUAL OUTPUT								
P30WG-1205Z2:1LF	9-18	180	2874	± 5	0	± 3000	89	± 3000
P30WG-1212Z2:1LF	9-18	50	2874	± 12	0	± 1250	90	± 1300
P30WG-1215Z2:1LF	9-18	50	2874	± 15	0	± 1000	91	± 1300
P30WG-2405Z2:1LF	18-36	100	1437	± 5	0	± 3000	90	± 3000
P30WG-2412Z2:1LF	18-36	40	1453	± 12	0	± 1250	91	± 1300
P30WG-2415Z2:1LF	18-36	50	1437	± 15	0	± 1000	91	± 1300
P30WG-4805Z2:1LF	36-72	70	710	± 5	0	± 3000	90	± 3000
P30WG-4812Z2:1LF	36-72	50	718	± 12	0	± 1250	90	± 1300
P30WG-4815Z2:1LF	36-72	40	718	± 15	0	± 1000	90	± 1300

If you need other specifications, please enquire.

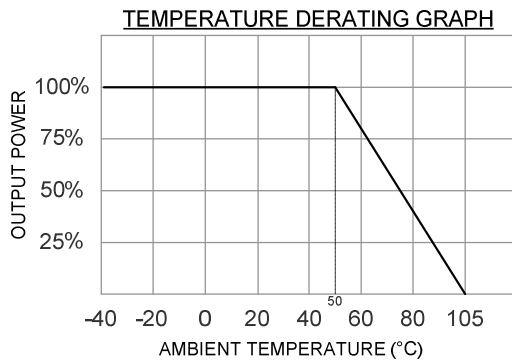
Notes:

Package / Pinning / Derating



All dimensions are typical in millimeters (inches).
 - Pin diameter: 1.0 +/-0.05 (0.04 +/-0.002)
 - Pin pitch tolerance: +/-0.35 (+/-0.014)
 - Case tolerance +/-0.5 (+/-0.02)
 Specification may change without notice.

2" x 1" – METAL CASE

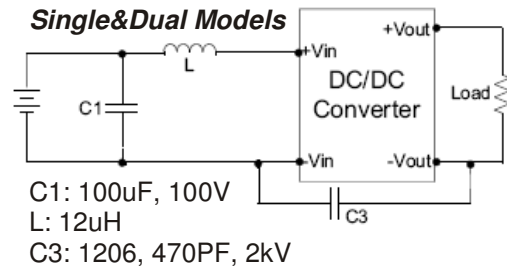


PIN CONNECTIONS		
#	SINGLE	DUAL
1	+Vin	+Vin
2	- Vin	- Vin
3	CTRL	CTRL
4	+Vout	+Vout
5	- Vout	COM
6	TRIM	- Vout

Notes:

App Notes

- 1 = Measured Input reflected ripple current with a simulated source inductance of 12uH.
- 2 = Tested by minimal Vin and constant resistive load.
- 3 = Dual: One load is 25% to 100% load, the other load is 100% load, the output voltage variable rate is within ±5%.
- 4 = Tested by nominal Vin and 25% load step change (75% - 50% - 25% of Io)
- 5 = The PMT series can meet EN55022 Class A With an external filter in parallel with the input pins.
- 6 = An external filter capacitor is required if the module has to meet EN61000-4-4 and EN61000-4-5
- 7 = The remote on/off control pin is referenced to -Vin (Pin2).



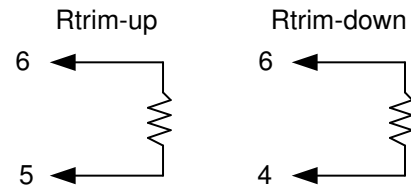
EMI Filter:

Input filter components (C1, C3, L) are used to help meet conducted emissions requirement. These components should be mounted as close as possible to the module; all leads should be minimized to decrease radiated noise.

EMC SPECIFICATIONS		
Radiated Emissions	EN 55022	CLASS A
Conducted Emissions ⁵	EN 55022	CLASS A
ESD	EN 61000-4-2	Perf. Criteria A
RS	EN 61000-4-3	Perf. Criteria A
EFT ⁶	EN 61000-4-4	Perf. Criteria A
Surge ⁶	EN 61000-4-5	Perf. Criteria A
CS	EN 61000-4-6	Perf. Criteria A
PFMF	EN 61000-4-8	Perf. Criteria A

External Output Trimming

Output can be externally trimmed. (Single output models only!)



Over Voltage Protection (Zender diode clamp)	
3.3 Vout:	3.9 V
5 Vout	6.2 V
5.1 Vout	6.2 V
12 Vout	15 V
15 Vout	18 V
± 5 Vout	± 6.2 V
± 12 Vout	± 15 V
± 15 Vout	± 18 V

Under Input Voltage Lockout (typ.)	
12 Vin Models	Module ON/OFF 8.6V / 7.9V
24 Vin Models	Module ON/OFF 17.8V / 16V
48 Vin Models	Module ON/OFF 33.5V / 30.5V

Remote ON/OFF Control ⁷	
ON:	3 - 12 VDC or open circuit
OFF:	0 - 1.2 VDC or short circuit PIN2 and PIN3
OFF idle current:	5mA, typ.

CTRL Module ON / OFF

Positive logic turns on the module during high logic and off during low logic. Ctrl module on/off can be controlled by an external switch between the ctrl terminal and -Vin terminal.

The switch can be an open collector or open drain

For positive logic if the ctrl feature is not used, please leave the ctrl pin floating.

