

P20PG-xxxxE/Z2:1LF



PM7L-SERIES

Rev.02-2011

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

The PM7L series is a family of cost effective 15-30W single & dual output DC-DC converters. These converters are made with nickle-coated brass case in a 2"x2" with high performance features such as 1500 VDC input/output isolation voltage, continuous short circuit protection with automatic restart and tight line / load regulation. Devices are encapsulated by using flame retardant resin. High performance features are high efficiency operation up to 87% and output voltage accuracy of $\pm 1\%$ maximum.

All specifications typical at $T_a=25^\circ\text{C}$, nominal input voltage and full load unless otherwise specified

Input Specifications

Voltage Range	2:1 Wide Input (See Table)
Input Filter	Capacitors
Input Reflected Ripple Current ¹	35 mA pk-pk
Start up Time (Nom. V_{in} and constant resistive load)	20mS, typ.

Output Specifications

Voltage Accuracy	$\pm 1\%$
Short Circuit Protection	Indefinite (Automatic Recovery)
Over Current Protection	140% of max. I_{out}
Line Regulation	$\pm 0.5\%$
Load Regulation	Single: $\pm 0.5\%$ (0% - 100%) Dual: $\pm 0.5\%$ (10% - 100%)
Ripple and Noise (20Mhz bandwidth)	100 mV pk-pk
Temperature Coefficient	$\pm 0.02\%$ / $^\circ\text{C}$

General Specifications

Efficiency	See Table
I/O Isolation Voltage (3 sec.)	1500 VDC
I/O Isolation Capacitance	1000 pF, typ.
I/O Isolation Resistance	1000 M Ohm
Switching Frequency	125 kHz, typ.
Humidity	95% rel H
Reliability Calculated MTBF (MIL-HDBK-217F)	> 1.121 Mhrs
Safety Standard (designed to meet)	IEC 60950-1

Physical Specifications

Case Material	Nickel Coated Brass
Potting Material	Epoxy (UL94V-0 rated)
Weight	~ 60g, typ.

Environment Specifications

Operating Temperature	-40 to +75 $^\circ\text{C}$ (for 100% load)
Maximum Case Temperature	100 $^\circ\text{C}$
Storage Temperature	-40 to +125 $^\circ\text{C}$
Cooling	Free Air Convection (10mm distance required)
RoHS Conform	Soldering 260 $^\circ\text{C}$, max. (1.5mm from case 10s.)

Selection Guide

Single 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								
P20PG-123R3E2:1LF	9-18	20	1375	3.3	0	4000	80	3300
P20PG-1205E2:1LF	9-18	20	2008	5	0	4000	83	3300
P20PG-127R2E2:1LF	9-18	20	1984	7.2	0	2777	84	2200
P20PG-1209E2:1LF	9-18	20	1984	9	0	2222	84	1000
P20PG-1212E2:1LF	9-18	30	1960	12	0	1666	85	1000
P20PG-1215E2:1LF	9-18	30	1937	15	0	1333	86	680
P20PG-1218E2:1LF	9-18	30	1937	18	0	1111	86	470
P20PG-1224E2:1LF	9-18	30	1915	24	0	833	87	470
P20PG-243R3E2:1LF	18-36	25	687	3.3	0	4000	80	3300
P20PG-2405E2:1LF	18-36	25	992	5	0	4000	84	3300
P20PG-247R2E2:1LF	18-36	25	992	7.2	0	2777	84	2200
P20PG-2409E2:1LF	18-36	25	968	9	0	2222	86	1000
P20PG-2412E2:1LF	18-36	25	957	12	0	1666	87	1000
P20PG-2415E2:1LF	18-36	25	957	15	0	1333	87	680
P20PG-2418E2:1LF	18-36	25	957	18	0	1111	87	470
P20PG-2424E2:1LF	18-36	25	957	24	0	833	87	470
P20PG-483R3E2:1LF	36-72	20	343	3.3	0	4000	80	3300
P20PG-4805E2:1LF	36-72	20	502	5	0	4000	83	3300
P20PG-487R2E2:1LF	36-72	20	490	7.2	0	2777	85	2200
P20PG-4809E2:1LF	36-72	20	478	9	0	2222	87	1000
P20PG-4812E2:1LF	36-72	20	478	12	0	1666	87	1000
P20PG-4815E2:1LF	36-72	20	478	15	0	1333	87	680
P20PG-4818E2:1LF	36-72	20	478	18	0	1111	87	470
P20PG-4824E2:1LF	36-72	25	478	24	0	833	87	470

If you need other specifications, please enquire.

Notes:

Selection Guide

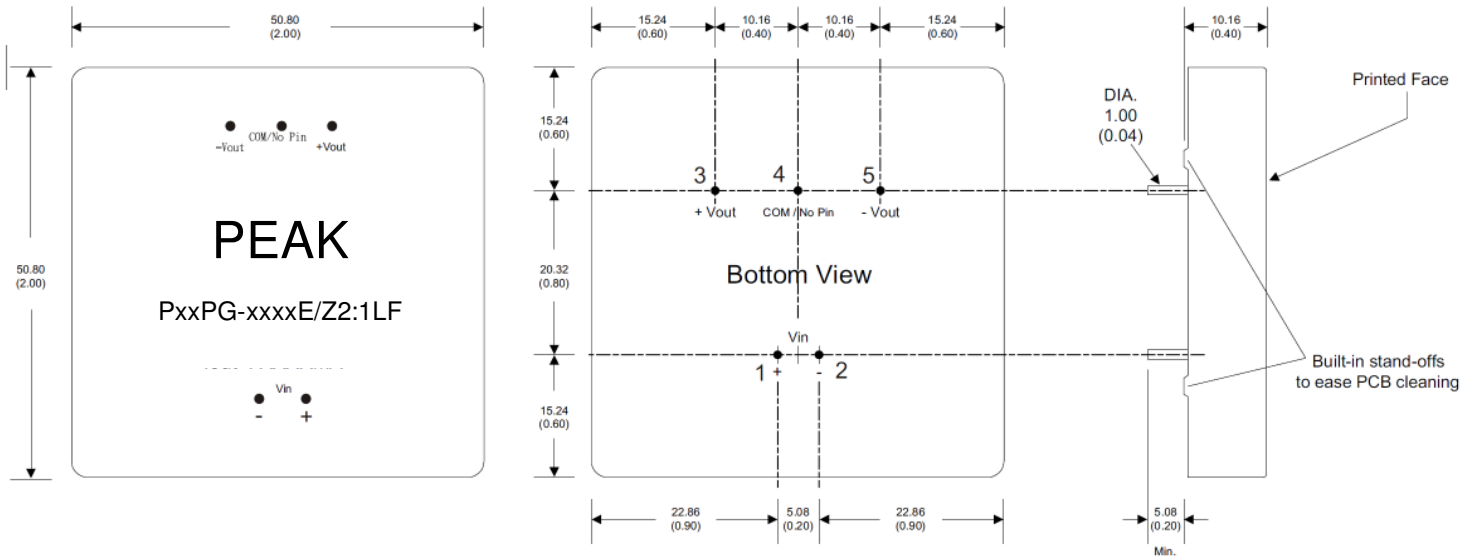
Dual Output

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
DUAL OUTPUT								
P20PG-123R3Z2:1LF	9-18	20	1375	± 3.3	0	± 2000	80	± 1000
P20PG-1205Z2:1LF	9-18	20	2032	± 5	0	± 2000	82	± 1000
P20PG-127R2Z2:1LF	9-18	25	2008	± 7.2	0	± 1388	83	± 680
P20PG-1209Z2:1LF	9-18	25	1984	± 9	0	± 1111	84	± 470
P20PG-1212Z2:1LF	9-18	30	1984	± 12	0	± 833	84	± 330
P20PG-1215Z2:1LF	9-18	30	1960	± 15	0	± 666	85	± 330
P20PG-1218Z2:1LF	9-18	35	1960	± 18	0	± 555	85	± 330
P20PG-1224Z2:1LF	9-18	35	1960	± 24	0	± 416	85	± 330
P20PG-243R3Z2:1LF	18-36	25	687	± 3.3	0	± 2000	80	± 1000
P20PG-2405Z2:1LF	18-36	25	992	± 5	0	± 2000	84	± 1000
P20PG-247R2Z2:1LF	18-36	25	992	± 7.2	0	± 1388	84	± 680
P20PG-2409Z2:1LF	18-36	25	957	± 9	0	± 1111	87	± 470
P20PG-2412Z2:1LF	18-36	25	957	± 12	0	± 833	87	± 330
P20PG-2415Z2:1LF	18-36	25	957	± 15	0	± 666	87	± 330
P20PG-2418Z2:1LF	18-36	25	957	± 18	0	± 555	87	± 330
P20PG-2424Z2:1LF	18-36	30	957	± 24	0	± 416	87	± 330
P20PG-483R3Z2:1LF	36-72	20	343	± 3.3	0	± 2000	80	± 1000
P20PG-4805Z2:1LF	36-72	20	496	± 5	0	± 2000	84	± 1000
P20PG-487R2Z2:1LF	36-72	20	490	± 7.2	0	± 1388	85	± 680
P20PG-4809Z2:1LF	36-72	20	478	± 9	0	± 1111	87	± 470
P20PG-4812Z2:1LF	36-72	20	478	± 12	0	± 833	87	± 330
P20PG-4815Z2:1LF	36-72	20	478	± 15	0	± 666	87	± 330
P20PG-4818Z2:1LF	36-72	20	478	± 18	0	± 555	87	± 330
P20PG-4824Z2:1LF	36-72	20	478	± 24	0	± 416	87	± 330

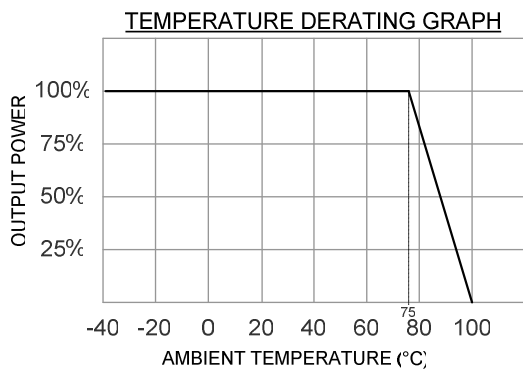
If you need other specifications, please enquire.

Notes:

Package / Pinning / Derating



All Dimensions are typical in mm (inch). Pin diameter 1.0 +/-0.05 (0.04 +/-0.002)
 Pin pitch tolerance: +/-0.35 (+/-0.014) Case tolerance +/-0.5 (+/-0.02)



PIN CONNECTIONS		
#	SINGLE	DUAL
1	+Vin	+Vin
2	- Vin	- Vin
3	+Vout	+Vout
4	Omitted	Common
5	- Vout	- Vout

App Notes:

¹ = Measured Input reflected ripple current with a simulated source inductance of 12uH.
² = Tested by minimal Vin and constant resistive load.

- Operation under no-load conditions will not damage these devices, but they will not observe the listed specifications.