

P47WG-xxxxE/Z2:1(H35)LF



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PM7-SERIES

Rev.03-2009

- ✓ 15 Watt
- ✓ 2:1 Wide Input
- ✓ 2" x 1" Case
- ✓ 1.5 - 3.5 kV DC I/O Isolation
- ✓ Regulated Output
- ✓ **Single** and **Dual** Output
- ✓ Continuous Short Circuit Prot.

The PM7 series P47WG-xxxxE/Z2:1(H35)LF is a family of cost effective 15W, single & 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: 1500VDC up to 3500VDC input/output isolation voltage, continuous short circuit protection with automatic restart and tight line / load regulation, high efficiency operation 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 (10% - 100%)	$\pm 0.5\%$
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 (3000 VDC optional)*
I/O Isolation Capacitance	470 pF, typ.
I/O Isolation Resistance	1000 M Ohm
Switching Frequency	200 kHz, typ.
Humidity	95% rel H
Reliability Calculated MTBF (MIL-HDBK-217F)	> 1.121 Mhrs

Physical Specifications

Case Material	Nickel Coated Brass
Potting Material	Epoxy (UL94V-0 rated)
Weight	~ 30g, typ.

Environment Specifications

Operating Temperature	-40 to +71 °C (ambient)
Maximum Case Temperature	100 °C
Storage Temperature	-40 to +125 °C
Cooling	Free Air Convection
RoHS Conform	Soldering 260 °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 (µF)
SINGLE OUTPUT								
P47WG-123R3E2:1LF	9-18	30	1031	3.3	300	3000	80	3300
P47WG-1205E2:1LF	9-18	30	1524	5	300	3000	82	3300
P47WG-127R2E2:1LF	9-18	30	1506	7.2	208	2083	83	2200
P47WG-1209E2:1LF	9-18	30	1470	9	166	1666	85	1000
P47WG-1212E2:1LF	9-18	30	1470	12	125	1250	85	1000
P47WG-1215E2:1LF	9-18	30	1470	15	100	1000	85	680
P47WG-1218E2:1LF	9-18	30	1470	18	83	833	85	470
P47WG-1224E2:1LF	9-18	30	1453	24	62	625	86	470
P47WG-243R3E2:1LF	18-36	25	515	3.3	300	3000	80	3300
P47WG-2405E2:1LF	18-36	25	744	5	300	3000	84	3300
P47WG-247R2E2:1LF	18-36	25	744	7.2	208	2083	84	2200
P47WG-2409E2:1LF	18-36	25	735	9	166	1666	85	1000
P47WG-2412E2:1LF	18-36	25	735	12	125	1250	85	1000
P47WG-2415E2:1LF	18-36	25	726	15	100	1000	86	680
P47WG-2418E2:1LF	18-36	25	726	18	83	833	86	470
P47WG-2424E2:1LF	18-36	25	718	24	62	625	87	470
P47WG-483R3E2:1LF	36-72	20	257	3.3	300	3000	80	3300
P47WG-4805E2:1LF	36-72	20	372	5	300	3000	84	3300
P47WG-487R2E2:1LF	36-72	20	372	7.2	208	2083	84	2200
P47WG-4809E2:1LF	36-72	20	367	9	166	1666	85	1000
P47WG-4812E2:1LF	36-72	20	363	12	125	1250	86	1000
P47WG-4815E2:1LF	36-72	20	359	15	100	1000	87	680
P47WG-4818E2:1LF	36-72	20	359	18	83	833	87	470
P47WG-4824E2:1LF	36-72	20	359	24	62	625	87	470

If you need other specifications, please enquire.

*** For optional 3.5kV DC I/O Isolation, please add “H35” before LF!**

→ Example: P47WG-2409E2:1H35LF for 3.5kV

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 (µF)
DUAL OUTPUT								
P47WG-123R3Z2:1LF	9-18	30	1562	± 3.3	± 150	± 1500	80	± 1000
P47WG-1205Z2:1LF	9-18	30	1524	± 5	± 150	± 1500	82	± 1000
P47WG-127R2Z2:1LF	9-18	30	1506	± 7.2	± 104	± 1041	83	± 680
P47WG-1209Z2:1LF	9-18	30	1488	± 9	± 83	± 833	84	± 470
P47WG-1212Z2:1LF	9-18	30	1488	± 12	± 62	± 625	84	± 470
P47WG-1215Z2:1LF	9-18	30	1488	± 15	± 50	± 500	84	± 330
P47WG-1218Z2:1LF	9-18	30	1470	± 18	± 41	± 416	85	± 220
P47WG-1224Z2:1LF	9-18	30	1470	± 24	± 31	± 312	85	± 220
P47WG-243R3Z2:1LF	18-36	25	515	± 3.3	± 150	± 1500	80	± 1000
P47WG-2405Z2:1LF	18-36	25	753	± 5	± 150	± 1500	83	± 1000
P47WG-247R2Z2:1LF	18-36	25	744	± 7.2	± 104	± 1041	84	± 680
P47WG-2409Z2:1LF	18-36	25	735	± 9	± 83	± 833	85	± 470
P47WG-2412Z2:1LF	18-36	25	726	± 12	± 62	± 625	86	± 470
P47WG-2415Z2:1LF	18-36	25	726	± 15	± 50	± 500	86	± 330
P47WG-2418Z2:1LF	18-36	25	718	± 18	± 41	± 416	87	± 220
P47WG-2424Z2:1LF	18-36	25	718	± 24	± 31	± 312	87	± 220
P47WG-483R3Z2:1LF	36-72	20	257	± 3.3	± 150	± 1500	80	± 1000
P47WG-4805Z2:1LF	36-72	20	372	± 5	± 150	± 1500	84	± 1000
P47WG-487R2Z2:1LF	36-72	20	372	± 7.2	± 104	± 1041	84	± 680
P47WG-4809Z2:1LF	36-72	20	367	± 9	± 83	± 833	85	± 470
P47WG-4812Z2:1LF	36-72	20	363	± 12	± 62	± 625	86	± 470
P47WG-4815Z2:1LF	36-72	20	359	± 15	± 50	± 500	87	± 330
P47WG-4818Z2:1LF	36-72	20	359	± 18	± 41	± 416	87	± 220
P47WG-4824Z2:1LF	36-72	20	359	± 24	± 31	± 312	87	± 220

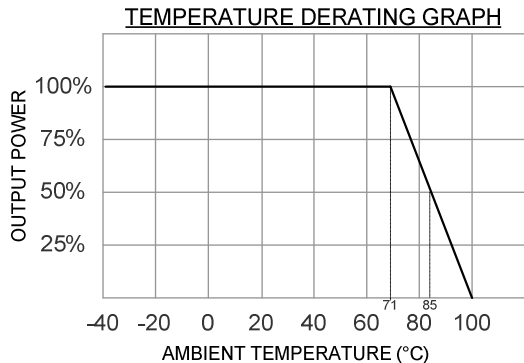
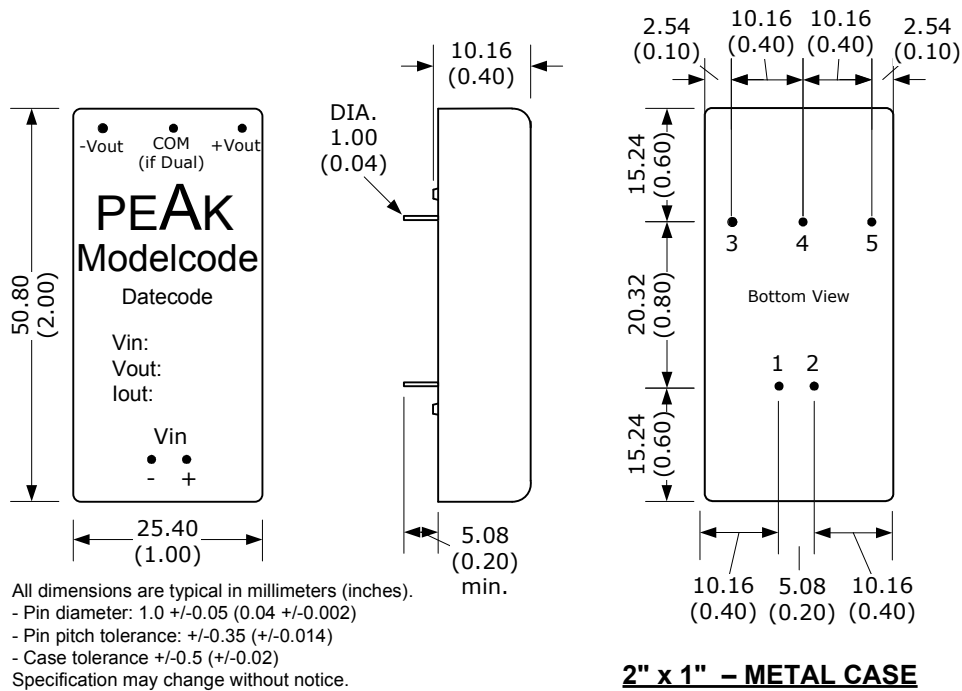
If you need other specifications, please enquire.

* For optional 3.5kV DC I/O Isolation, please add “H35” before LF!

→ Example: P47WG-2409Z2:1H35LF for 3.5kV

Notes:

Package / Pinning / Derating



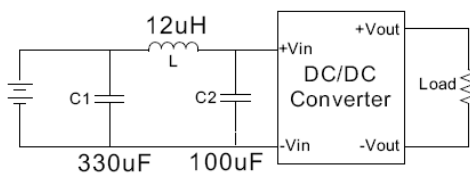
PIN CONNECTIONS		
#	SINGLE	DUAL
1	+Vin	+Vin
2	- Vin	- Vin
3	+Vout	+Vout
4	Omitted	Common
5	- Vout	- Vout

same Pinning for 3.5 kV Isolation

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.
- Suggest adding input external filter (C1 , C2 , L) to meet conducted emissions (En55022 class A).



EMC SPECIFICATIONS		
Radiated Emissions	EN 55022 FCC 47CFR Part 15/A	CLASS A CLASS A
ESD	IEC 61000-4-2	Perf. Criteria B
RS	IEC 61000-4-3	Perf. Criteria A