

P42WG-xxxxE/Z2:1(H35)LF



PEAK
electronics

Mainzer Straße 151–153
D-55299 Nackenheim
Tel. +49 6135 7026-0
Fax: +49 6135 931070
www.peak-electronics.de
peak@peak-electronics.de

PM7-SERIES

Rev.03-2009

- ✓ 10 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 P42WG-xxxxE/Z2:1(H35)LF is a family of cost effective 10W, 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	500 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 +85 °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 (uF) ²
SINGLE OUTPUT								
P42WG-123R3E2:1LF	9-18	30	705	3.3	200	2000	78	2200
P42WG-1205E2:1LF	9-18	30	1016	5	200	2000	82	2200
P42WG-127R2E2:1LF	9-18	30	1004	7.2	138	1388	83	1000
P42WG-1209E2:1LF	9-18	30	1004	9	111	1111	83	1000
P42WG-1212E2:1LF	9-18	30	992	12	83	833	84	680
P42WG-1215E2:1LF	9-18	30	992	15	66	666	84	470
P42WG-1218E2:1LF	9-18	30	980	18	55	555	85	470
P42WG-1224E2:1LF	9-18	30	980	24	41	416	85	330
P42WG-243R3E2:1LF	18-36	25	352	3.3	200	2000	78	2200
P42WG-2405E2:1LF	18-36	25	508	5	200	2000	82	2200
P42WG-247R2E2:1LF	18-36	25	502	7.2	138	1388	83	1000
P42WG-2409E2:1LF	18-36	25	496	9	111	1111	84	1000
P42WG-2412E2:1LF	18-36	25	496	12	83	833	84	680
P42WG-2415E2:1LF	18-36	25	490	15	66	666	85	470
P42WG-2418E2:1LF	18-36	25	490	18	55	555	85	470
P42WG-2424E2:1LF	18-36	25	484	24	41	416	86	330
P42WG-483R3E2:1LF	36-72	20	176	3.3	200	2000	78	2200
P42WG-4805E2:1LF	36-72	20	251	5	200	2000	83	2200
P42WG-487R2E2:1LF	36-72	20	251	7.2	138	1388	83	1000
P42WG-4809E2:1LF	36-72	20	248	9	111	1111	84	1000
P42WG-4812E2:1LF	36-72	20	248	12	83	833	84	680
P42WG-4815E2:1LF	36-72	20	248	15	66	666	84	470
P42WG-4818E2:1LF	36-72	20	245	18	55	555	85	470
P42WG-4824E2:1LF	36-72	20	245	24	41	416	86	330

If you need other specifications, please enquire.

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

→ Example: P42WG-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 (uF) ²
DUAL OUTPUT								
P42WG-123R3Z2:1LF	9-18	30	1068	± 3.3	± 100	± 1000	78	± 1000
P42WG-1205Z2:1LF	9-18	30	1016	± 5	± 100	± 1000	82	± 1000
P42WG-127R2Z2:1LF	9-18	30	1004	± 7.2	± 69	± 694	83	± 680
P42WG-1209Z2:1LF	9-18	30	992	± 9	± 55	± 555	84	± 470
P42WG-1212Z2:1LF	9-18	30	992	± 12	± 41	± 416	84	± 470
P42WG-1215Z2:1LF	9-18	30	980	± 15	± 33	± 333	85	± 330
P42WG-1218Z2:1LF	9-18	30	980	± 18	± 27	± 277	85	± 220
P42WG-1224Z2:1LF	9-18	30	980	± 24	± 20	± 208	85	± 220
P42WG-243R3Z2:1LF	18-36	25	352	± 3.3	± 100	± 1000	78	± 1000
P42WG-2405Z2:1LF	18-36	25	508	± 5	± 100	± 1000	82	± 1000
P42WG-247R2Z2:1LF	18-36	25	502	± 7.2	± 69	± 694	83	± 680
P42WG-2409Z2:1LF	18-36	25	502	± 9	± 55	± 555	83	± 470
P42WG-2412Z2:1LF	18-36	25	496	± 12	± 41	± 416	84	± 470
P42WG-2415Z2:1LF	18-36	25	496	± 15	± 33	± 333	84	± 330
P42WG-2418Z2:1LF	18-36	25	490	± 18	± 27	± 277	85	± 220
P42WG-2424Z2:1LF	18-36	25	490	± 24	± 20	± 208	85	± 220
P42WG-483R3Z2:1LF	36-72	20	176	± 3.3	± 100	± 1000	78	± 1000
P42WG-4805Z2:1LF	36-72	20	254	± 5	± 100	± 1000	82	± 1000
P42WG-487R2Z2:1LF	36-72	20	248	± 7.2	± 69	± 694	84	± 680
P42WG-4809Z2:1LF	36-72	20	248	± 9	± 55	± 555	84	± 470
P42WG-4812Z2:1LF	36-72	20	245	± 12	± 41	± 416	85	± 470
P42WG-4815Z2:1LF	36-72	20	245	± 15	± 33	± 333	85	± 330
P42WG-4818Z2:1LF	36-72	20	242	± 18	± 27	± 277	86	± 220
P42WG-4824Z2:1LF	36-72	20	242	± 24	± 20	± 208	86	± 220

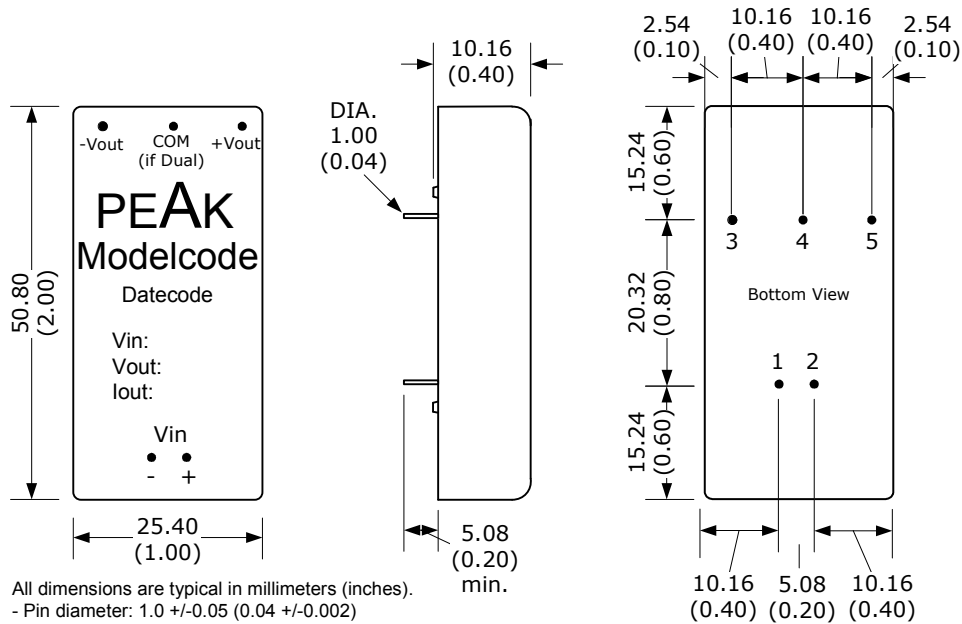
If you need other specifications, please enquire.

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

→ Example: P42WG-2409Z2:1H35LF for 3.5kV

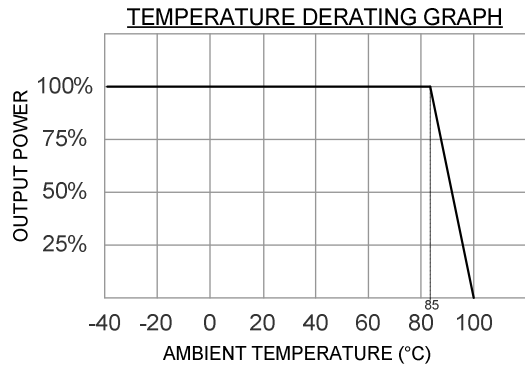
Notes:

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	+Vout	+Vout
4	Omitted	Common
5	- Vout	- Vout

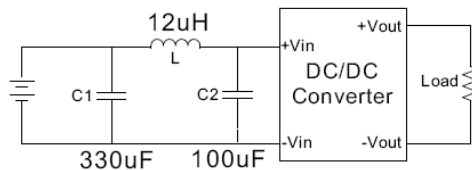
same Pinning for 3.5 kV Isolation

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 (EN 55022 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