

P15VG-xxxxE/Z4:1LF



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

PMNW-SERIES

Rev.08-2009

- ✓ 15 Watt
- ✓ 4:1 Wide Input
- ✓ 1" x 1" Case
- ✓ 1.6 kV DC I/O Isolation
- ✓ **Reg. Single and Dual Output**
- ✓ Remote ON/OFF Control
- ✓ Continuous Short Circuit Prot.

The PMNW series is a family of high performance 15W single & dual output DC-DC converters. These are encapsulated in nickel coated copper 1" x 1" case with non conductive base.

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

Input Specifications

Voltage Range	4:1 Wide Input (see table)
Input Filter	Pi-Type

Output Specifications

Voltage Accuracy	± 1%, max.
Short Circuit Protection	Indefinite (hiccup, automatic recovery)
Output Voltage Adjustable (trim)	± 10%, max. (only single output)
Cross Regulation ¹ (dual output)	± 5%
Line Regulation	± 0.2%, max.
Load Regulation (0% - 100%)	± 0.5%, max. (single) ± 1%, max. (dual)
Ripple and Noise (20Mhz bandwidth)	100 mV pk-pk, max.
Transient Recovery ²	250 us, typ.
Transient Response Deviation ²	± 3%, max.
Temperature Coefficient	± 0.02% / °C, max.

General Specifications

Efficiency	See Table
I/O Isolation Voltage (3 sec.)	1600 VDC
I/O Isolation Resistance	1000 MOhm, min.
Switching Frequency	375 kHz, typ.
Humidity	95% rel H
Reliability Calculated MTBF (MIL-HDBK-217F)	> 560 khrs

Physical Specifications

Case Material	Nickel Coated Copper
Weight	~ 18 g, typ.

Environment Specifications

Operating Temperature	-40 to +66 °C (for 100%)
Maximum Case Temperature	105 °C
Storage Temperature	-40 to +125 °C
Cooling	Free Air Convection (10 mm distance required)
RoHS Conform	Soldering 260 °C, max. (1.5mm from case 10s.)

Selection Guide

Single and Dual Output (If you need other specifications, please enquire)

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) ³
SINGLE OUTPUT								
P15VG-243R3E4:1LF	9-36	15	647	3.3	0	4000	86	1000
P15VG-2405E4:1LF	9-36	15	727	5	0	3000	87	1000
P15VG-2412E4:1LF	9-36	15	747	12	0	1300	88	330
P15VG-2415E4:1LF	9-36	15	710	15	0	1000	89	220
P15VG-483R3E4:1LF	18-75	10	331	3.3	0	4000	84	1000
P15VG-4805E4:1LF	18-75	10	368	5	0	3000	86	1000
P15VG-4812E4:1LF	18-75	10	378	12	0	1300	87	330
P15VG-4815E4:1LF	18-75	10	360	15	0	1000	88	220

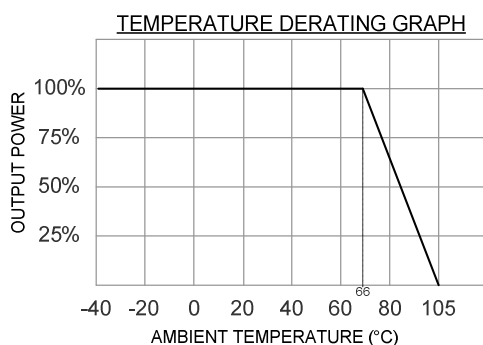
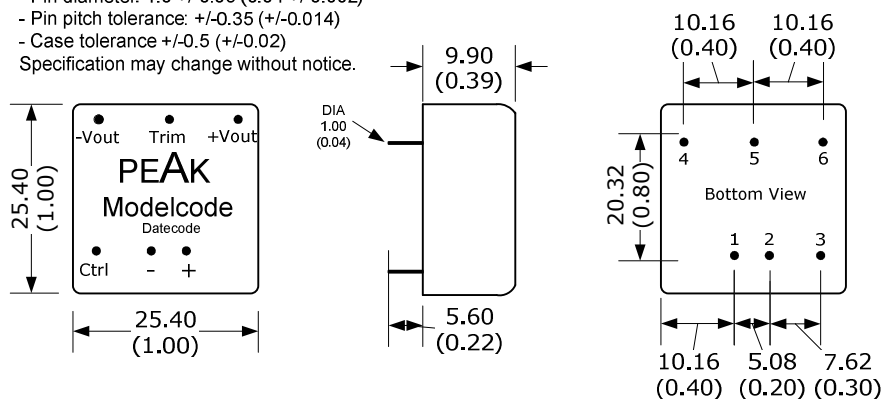
DUAL OUTPUT

P15VG-2405Z4:1LF	9-36	15	744	± 5	0	± 1500	85	± 470
P15VG-2412Z4:1LF	9-36	15	718	± 12	0	± 625	88	± 220
P15VG-2415Z4:1LF	9-36	15	710	± 15	0	± 500	89	± 100
P15VG-4805Z4:1LF	18-75	10	376	± 5	0	± 1500	84	± 470
P15VG-4812Z4:1LF	18-75	10	363	± 12	0	± 625	87	± 220
P15VG-4815Z4:1LF	18-75	10	359	± 15	0	± 500	88	± 100

Package / Pinning / Derating

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

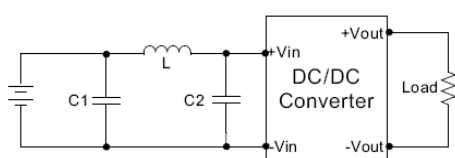
1" x 1" – METAL CASE



PIN CONNECTION		
#	SINGLE	DUAL
1	+Vin	+Vin
2	- Vin	- Vin
3	CTRL	CTRL
4	+Vout	+Vout
5	Trim	Common
6	- Vout	- Vout

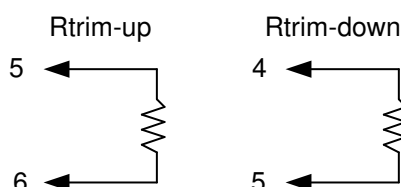
App Notes

- 1 = One load is 25% to 100% load, the other load is 100% load, the output voltage variable rate is within $\pm 5\%$.
 2 = Tested by nominal V_{in} and 25% load step change (75% - 50% - 25% of I_o)
 3 = Tested by minimal V_{in} and constant resistive load.
 4 = Input filter components (C1, C2, L) are used to help meet conducted emissions requirement for the module. These components should be mounted as close as possible to the module; all leads should be minimized to decrease radiated noise.
 5 = An external filter capacitor is required if the module has to meet EN61000-4-4 and EN61000-4-5



Part #	C1 / C2	L
P15VG-24xx	1210, 2.2uF/100V	12uH
P15VG-48xx	1210, 2.2uF/100V	12uH

EMC SPECIFICATIONS		
Radiated Emissions	EN 55022	CLASS A
Conducted Emissions ⁴	EN 55022	CLASS A
ESD	EN 61000-4-2	Perf. Criteria A
RS	EN 61000-4-3	Perf. Criteria A
EFT ⁵	EN 61000-4-4	Perf. Criteria A
Surge ⁵	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 (Zener diode clamp)	
3.3 Vout:	3.9 V
5 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.)	
24 Vin Models	Module ON/OFF 8.5V / 7V
48 Vin Models	Module ON/OFF 17V / 15V

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

Notes: