

P20VG-xxxxE/Z4:1LF



PMNW-SERIES

Rev.11-2012

- ✓ 20 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 20W 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%
Short Circuit Protection	Indefinite (hiccup, automatic recovery)
Output Voltage Adjustable (trim)	± 10%, max. (only single output)
Cross Regulation ¹ (dual output)	± 5%
Line Regulation	± 0.5%, max.
Load Regulation (0% - 100%)	± 0.5%, max. (single) ± 1%, max. (dual)
Ripple and Noise (20Mhz bandwidth)	3.3 & 5.0 V: 75mV pk-pk, max Other modules: 100 mV pk-pk, max.
Transient Recovery ²	250 us, typ.
Transient Response Deviation ²	± 3%, max.
Temperature Coefficient	± 0.02% / °C

General Specifications

Efficiency	See Table
I/O Isolation Voltage (3 sec.)	1600 VDC
I/O Isolation Resistance	1000 MOhm, min.
Switching Frequency	330 kHz, typ.
Humidity	95% rel H
Reliability Calculated MTBF (MIL-HDBK-217F)	> 560 khrs

Physical Specifications

Case Material	Nickel Coated Copper
Weight	~ 19 g, typ.

Environment Specifications

Operating Temperature	-40 to +55 °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)

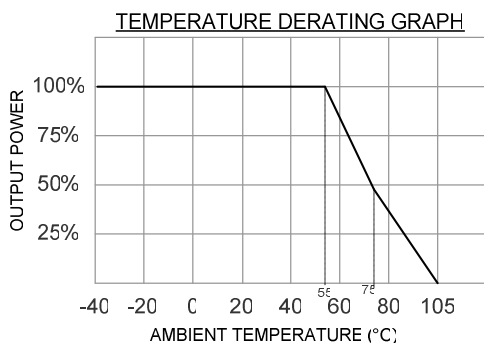
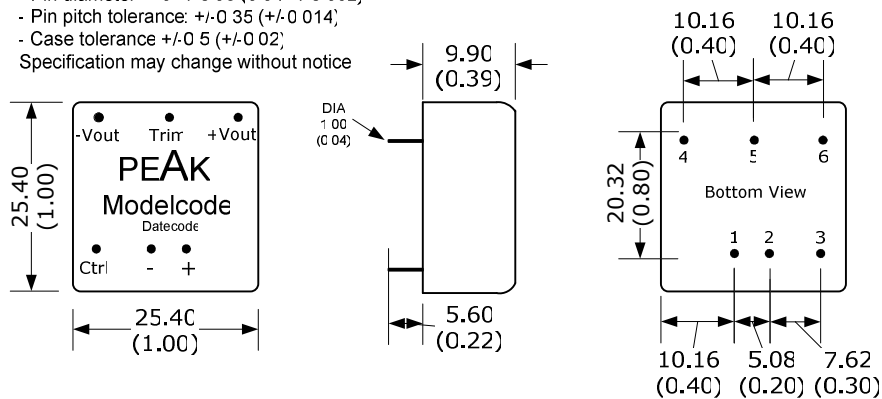
Order #	Input Voltage (VDC)	Input Current No Load (mA)	Input Current Full Load (mA)	Output Voltage (VDC)	Output Current Min. Load (mA)	Output Current Full Load (mA)	Efficiency (%)	Capacitor Load (uF) ³
SINGLE OUTPUT								
P20VG-243R3E4:1LF	9-36	50	703	3.3	0	4500	88	10000
P20VG-2405E4:1LF	9-36	50	936	5	0	4000	89	5000
P20VG-2412E4:1LF	9-36	22	936	12	0	1670	89	850
P20VG-2415E4:1LF	9-36	22	936	15	0	1330	89	700
P20VG-483R3E4:1LF	18-75	30	352	3.3	0	4500	88	10000
P20VG-4805E4:1LF	18-75	30	468	5	0	4000	89	5000
P20VG-4812E4:1LF	18-75	15	468	12	0	1670	89	850
P20VG-4815E4:1LF	18-75	15	468	15	0	1330	89	700
DUAL OUTPUT								
P20VG-2412Z4:1LF	9-36	25	936	± 12	0	± 833	89	± 470
P20VG-2415Z4:1LF	9-36	25	936	± 15	0	± 667	89	± 330
P20VG-4812Z4:1LF	18-75	15	468	± 12	0	± 833	89	± 470
P20VG-4815Z4:1LF	18-75	15	468	± 15	0	± 667	89	± 330

Package / Pinning / Derating

All dimensions are typical in millimeters (inches)

- Pin diameter ± 0.05 (0.04 ± 0.002);
 - Pin pitch tolerance: ± 0.35 (± 0.014);
 - Case tolerance ± 0.5 (± 0.02);
- Specification may change without notice

1" x 1" – METAL CASE

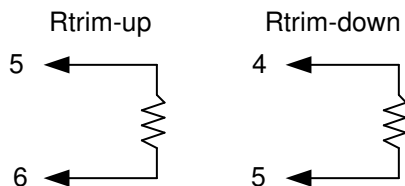


PIN CONNECTION		
#	SINGLE	DUAL
1	+Vin	+Vin
2	- Vin	- Vin
3	CTRL	CTRL
4	+Vout	+Vout
5	Trim	Common
6	- Vout	- Vout

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 meets EN 55022 Class A without external components.
- 5 = An external filter capacitor is required if the module has to meet EN61000-4-4 and EN61000-4-5

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
± 5 Vout	± 6.2 V
± 12 Vout	± 15 V
± 15 Vout	± 18 V

Under Input Voltage Lockout (typ.)	
24 Vin Models	Module ON/OFF 8.6V / 7.9V
48 Vin Models	Module ON/OFF 17.8V / 15.5V

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: