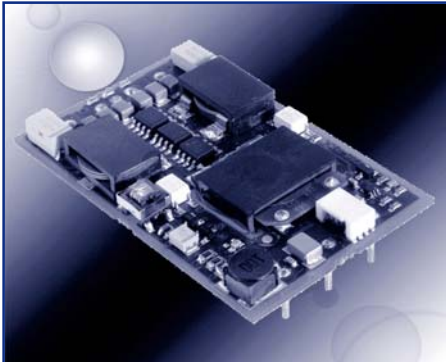


# WPA60 Series

## 60 Watt Dual Output Quarter Brick DC/DC Converter



- 2.3" x 1.45" x 0.40"  
(58.42mm x 36.83mm x 10.16mm)
- Dual Outputs - Output 1/Output 2 Vdc:  
1.0/1.5 1.2/1.8; 1.5/2.2; 1.8/2.5;  
1.2/3.3; 1.8/3.3; 2.5/3.3; 1.5/5.0;  
3.3/5.0
- Independently Regulated Outputs
- 36V - 75V Input Range
- Industry Standard Pinouts
- Input & Output Filtering
- Remote On/Off Function
- Meets Operational Insulation Requirements of EN60950
- UL/CUL 60950, VDE EN60950 Approved
- Fixed Frequency Operation
- No Minimum Load Requirements
- Hiccup Mode Current Limiting
- Self-resetting Over Voltage Protection
- C&D Technologies, Power Electronics Division is ISO9001:2000 Certified

The WPA60 Series are high performance DC/DC converters providing two independent regulated outputs. For maximum flexibility, power can be traded between outputs as required. The unit delivers high performance across all line and load conditions.

The WPA60 Series are assembled by a fully automated process using surface mount components for increased

reliability.

WPA DC-DC converter modules are certified to UL/CUL 60950, and VDE to EN60950. It meets CISPR22/EN55022/ FCC15J Class B specs for EMI levels with external filtering.

Other features include:

- Full Regulation Down to Zero Load
- Undervoltage Lock-Out
- Auto-Start

- Internal Temperature Shutdown
- Auto-Reset
- Soft Start
- Remote On/Off (Available in Positive or Negative Logic)
- Over Current Protection
- Overvoltage Protection
- Output Voltage Adjust on Both Outputs

### PRODUCT SELECTION CHART <sup>1</sup>

MODEL	NOMINAL INPUT VOLTAGE (Vdc)	OUTPUT #1	OUTPUT #2	OUTPUT CURRENT		TYPICAL EFFICIENCY (%)
				MIN LOAD(A)	MAX LOAD (A)	
WPA60R48D1510*	48	1.0	1.5	0.0	12.0	82
WPA60R48D1812*	48	1.2	1.8	0.0	12.0	82
WPA60R48D2215*	48	1.5	2.2	0.0	12.0	86
WPA60R48D2518*	48	1.8	2.5	0.0	12.0	86
WPA60R48D3312*	48	1.2	3.3	0.0	12.0	89
WPA60R48D3318*	48	1.8	3.3	0.0	12.0	89
WPA60R48D3325*	48	2.5	3.3	0.0	12.0	89
WPA60R48D0515*	48	1.5	5.0	0.0	12.0	89
WPA60R48D0533*	48	3.3	5.0	0.0	12.0	89

Input current at nominal input line = 1.45A (Output Power = 60W)

\*Models available with -1 option (positive logic)

<sup>1</sup>Total output power not to exceed 60 Watts

## SPECIFICATIONS, ALL MODELS

Specifications are at  $T_A = +25^\circ\text{C}$ , Airflow = 300LFM (1.5m/s) at nominal input voltage unless otherwise specified.

	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
INPUT	<b>INPUT</b>					
	Voltage Range	WPA60R48D315	36	48	75	VDC
	Reflected Ripple Current				675	mApk-pk
	<b>INPUT CONTROL</b>					
	Temperature Shutdown	PCB		120		$^\circ\text{C}$
	Temperature Hysteresis			5		$^\circ\text{C}$
	Quiescent Standby Current	$V_{in} = 48\text{VDC}$		8	10	mA
	Undervoltage Lockout			32.5		V
	Undervoltage Shutdown			2		V

## SPECIFICATIONS

Specifications are at  $T_A = +25^\circ\text{C}$ , Airflow = 300LFM (1.5m/s) at nominal input voltage unless otherwise specified.

	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS	
GENERAL	<b>ISOLATION</b>						
	Rated Voltage		2000			VDC	
	Resistance			10		$\text{M}\Omega$	
	Capacitance			1000		pF	
	Leakage Current	240 VAC		90		$\mu\text{Arms}$	
	<b>OUTPUT</b>						
	Rated Power					60	W
	Voltage Setpoint Accuracy					$\pm 1.5$	%
	Temperature Coefficient				$\pm 0.005$		$\%/^\circ\text{C}$
	Output Voltage (Over all conditions of I/P voltage load & temperature)	V1 v2				2 8	% of Nom % of Nom
	Ripple & Noise (NOTE 1)	BW = 5Hz to 20MHz				90	mVp-p
	Output Adjust Range						
	Trim Up					10	%
	Trim Down					10	%
	Short Circuit and Overcurrent Protection				120		%
	Max Capacitive Load					10,000	$\mu\text{F}$
	Overvoltage Protection				15		%
	<b>GENERAL</b>						
	Switching Frequency				350		KHz
	MTTF per ML-HDBK-217 Ground Benign	Circuit Stress Method $T_A = +25^\circ$ Unmodified Database			1,000,000		Hr
	Package Weight				30		g
	<b>TEMPERATURE</b>						
	Operation/Specification	PCB Temperature		-40		+100	$^\circ\text{C}$
	Storage	PCB Temperature		-55		+125	$^\circ\text{C}$
	Shutdown Temperature	PCB Temperature			+120		$^\circ\text{C}$

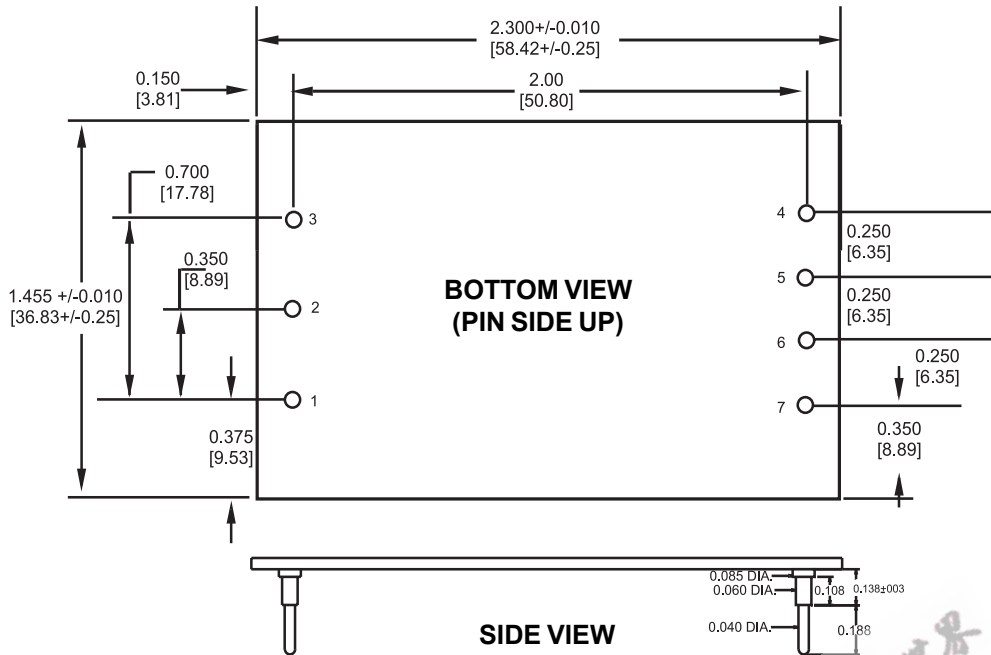
NOTE 1: Measured at 20 MHz bandwidth across a  $6\mu\text{f}$  multi layer ceramic capacitor located approximately 1" from output terminals.

## PERFORMANCE CURVES

Rev B of the WPA60 Datasheet will include extensive performance curves and graphs.

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## MECHANICAL



PIN CONNECTIONS	
#	Function
1	+Vin
2	On/Off
3	-Vin
4	+Vout1
5	RTN (-Vout1 and -Vout2)
6	Trim
7	+Vout2

### NOTES:

All dimensions are in inches (millimeters).

All through hole pins are  $\emptyset$  0.040" [1.02] with  $\emptyset$  0.078" [1.98] shoulder

Pin placement tolerance:  $\pm$ 0.10

Pin material: Brass

Pin Finish: Tin/Lead over Nickel

Converter weight: [30g]

Max height 12.5mm

## ORDERING INFORMATION

### To Find Model Number

**WPA60R48D**      **yz**      -

Device Family \_\_\_\_\_  
60 Watt, Dual Output,  
Quarter Brick, 48VDC Input Range  
Model Number \_\_\_\_\_

Selected from Product Selection Chart (above)

y = 15 = 1.5V, 18 = 1.8V, 22 = 2.2V, 25 = 2.5V,

33 = 3.3V, 05 = 5.0V,

z = 10 = 1.0V, 12 = 1.2V, 15 = 1.5V, 18 = 1.8V

25 = 2.5V, 33 = 3.3V

Remote On/Off Logic \_\_\_\_\_

Positive Logic - No Number

Negative Logic - 1

### Model Numbers

### Part Numbers

WPA60R48D1510	6064965
WPA60R48D1812	6064957
WPA60R48D2215	6064956
WPA60R48D2518	6064955
WPA60R48D3312	6064953
WPA60R48D3318	6064952
WPA60R48D3325	6064951
WPA60R48D0515	6064966
WPA60R48D0533	6064954
WPA60R48D1510-1	6064993
WPA60R48D1812-1	6064992
WPA60R48D2215-1	6064991
WPA60R48D2518-1	6064990
WPA60R48D3312-1	6064989
WPA60R48D3318-1	6064988
WPA60R48D3325-1	6064987
WPA60R48D0515-1	6064994
WPA60R48D0533-1	6064986

**Power Electronics Division, Americas**  
3400 E Britannia Drive, Tucson, Arizona 85706  
Tel: 800.547.2537 Fax: 520.295.4197

**C&D Technologies, EMEA/Asia/Pacific**  
Milton Keynes MK14 5BU UK  
Tel: +44 (0)1908 615232 Fax: +44 (0)1908 617545

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