

Product Data Sheet

3 WATT REGULATED WIDE INPUT RANGE DC/DC CONVERTER

WPC03R



FEATURES

- 1 Low Cost, High Performance
- 1 Small DIP Package
- 1 Full Power to +85°C
- 1 Extended Temperature Range: -40°C to +85°C
- 1 Industry Standard Pinouts
- 1 Full Short Circuit Protection
- 1 High Capacitive Loading Capability
- 1 Protected Against High Input Voltage

DESCRIPTION

The WPC03R is a family of high performance DC/DC converters that offers regulated outputs over input voltage ranges of 9-18V, 18-36V and 34-72V while offering a wide operating temperature range of -40°C to $+85^{\circ}\text{C}$ without derating.

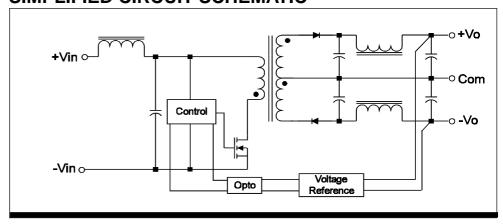
Each WPC03R contains input filtering to minimize conducted noise. The design utilizes surface mounted components, including magnetics, to provide enhanced reliability.

The converter is designed to meet the requirements of EN60950 with the "L" pinout having 1,500 VDC isolation. All WPC03R converters are designed to withstand input voltage transients to 200% of nominal input voltage. An additional feature is the ability of the WPC03R to drive high capacitive loads.

APPLICATIONS

- 1 Telecommunications
- 1 Battery Powered Systems
- 1 Portable Instruments
- 1 Transportation Equipment
- Distributed Power Systems

SIMPLIFIED CIRCUIT SCHEMATIC



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WPC03R 2/99 REV A Page 1

ABSOLUTE MAXIMUM RATINGS

Output Short Circuit Protection Continuous	
Internal Power Dissipation 1.5W	
Lead Temp (soldering, 10s Max)+300°C	
Max Case Temperature++100°C	

ELECTRICAL SPECIFICATIONS

Specifications typical at T_A =25°C, nominal input voltage, rated output current unless otherwise stated.

	Nominal Input	Rated Output	Output Current (mA)		· · ·		Efficiency	
Model	Voltage (Volts)	Voltage (Volts)	Min Load (See Note 1)	Rated Load	(mA) Rated Load	Load (μF)	%	
WPC03R12S05	12	5.0	60	600	448	600	77	
WPC03R12S12	12	12.0	24	250	445	250	80	
WPC03R12S15	12	15.0	20	200	445	200	81	
WPC03R12D05	12	<u>+</u> 5.0	<u>+</u> 30	<u>+</u> 300	470	<u>+</u> 300	74	
WPC03R12D12	12	<u>+</u> 12.0	<u>+</u> 12	<u>+</u> 125	47 5	±125	76	
WPC03R12D15	12	<u>+</u> 15.0	<u>+</u> 10	<u>+</u> 100	475	<u>+</u> 100	77	
WPC03R24S05	24	5.0	60	600	230	600	74	
WPC03R24S12	24	12.0	24	250	230	250	75	
WPC03R24S15	24	15.0	20	200	225	200	76	
WPC03R24D05	24	<u>+</u> 5.0	<u>+</u> 30	<u>+</u> 300	240	<u>+</u> 300	73	
WPC03R24D12	24	<u>+</u> 12.0	<u>+</u> 12	<u>+</u> 125	235	<u>+</u> 125	74	
WPC03R24D15	24	<u>+</u> 15.0	<u>+</u> 10	<u>+</u> 100	230	<u>+</u> 100	75	
WPC03R48S05	48	5.0	60	600	120	600	74	
WPC03R48S12	48	12.0	24	250	118	250	75	
WPC03R48S15	48	15.0	20	200	116	200	76	
WPC03R48D05	48	<u>+</u> 5.0	<u>+</u> 30	<u>+</u> 300	120	<u>+</u> 300	75	
WPC03R48D12	48	<u>+</u> 12.0	<u>+</u> 12	<u>+</u> 125	118	<u>+</u> 125	76	
WPC03R48D15	48	<u>+</u> 15.0	<u>+</u> 10	<u>+</u> 100	116	<u>+</u> 100	77	

NOTE 1: Although minimum load specifications are indicated for load measurement purposes, all models will operate under no-load conditions.

ORDERING INFORMATION

WPC03R xxyzz E
Device Family
Indicates wide input power 3W regulated DC/DC
Model Number
Selected from Table of Electrical Characteristics
xx=input voltage
y=number of outputs: S=single, D=dual
zz=output voltage
Pinout option E or L

Page 2 WPC03R 2/99 REV A

COMMON SPECIFICATIONS

Specifications typical at T_A =25°C, nominal input voltage, rated output current unless otherwise stated.

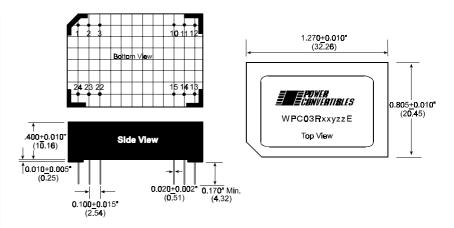
Parameter	Conditions	Min	Тур	Max	Units
Input					
Voltage Range		9	12	18	Vdc
		18	24	36	Vdc
		34	48	72	Vdc
Reflected Ripple Current			50		mA p-p
Isolation					
Safety Standards	Designed to meet requirements of				
	EN60950, EN41003 & UL1950				
Rated Voltage	"L" Pinout	1500			Vdc
	"E" Pinout	1000			Vdc
Test Voltage—60 Hz, 10 secs	"L" Pinout	1500			Vpk
	"E" Pinout	1000			Vpk
Resistance			10		GΩ
Capacitance			220		pF
Leakage Current	V _{iso} =240Vac, 60 Hz		30		μArms
Output	36	34	-2-		
Rated Power	2 3 7			3	W
Voltage Setpoint Accuracy	v _{iso} -240 vac, 00 Hz	Mir.		<u>+</u> 3.0	%
Temperature Coefficient	C		<u>+</u> 0.02		%/°C
Line Regulation-singles	Low line to high line			<u>+</u> 1.5%	%
Line Regulation-duals	Low line to high line			<u>+</u> 1.5%	%
Load Regulation-singles	Min load to rated load			<u>+</u> 2%	%
Load Regulation-duals	Min load to rated load			<u>+</u> 2%	%
Ripple & Noise	BW=5 Hz to 20 MHz		50	100	mV p-p
General					
MTTF per MIL-HDBK-217, Rev F	T _A =25°		1,000,000		Hours
Temperature					
Operation		-40		+85	°C
Storage		-55		+125	°C

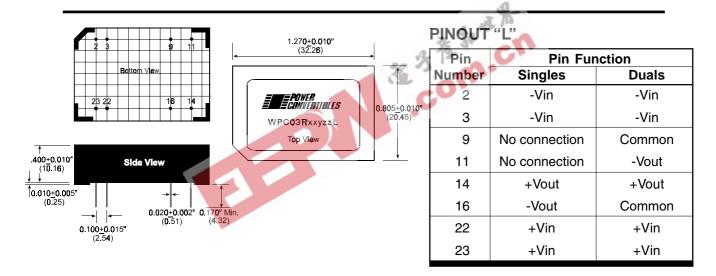
WPC03R 2/99 REV A Page 3

MECHANICAL SPECIFICATIONS

PINOUT "E"

Pin	Pin Function			
Number	Singles	Duals		
1	+Vin	+Vin		
2	No connection	-Vout		
3	No connection	Common		
10	-Vout	Common		
11	+Vout	+Vout		
12	-Vin	-Vin		
13	-Vin	-Vin		
14	+Vout	+Vout		
15	-Vout	Common		
22	No connection	Common		
23	No connection	-Vout		
24	+Vin	+Vin		





TECHNICAL INFORMATION

Notes:

- 1. All dimensions in inches and (millimeters).
- Units are encapsulated with a low thermal resistance molding compound which has excellent chemical resistance, wide operating temperature range and good electrical properties under high humidity environments. The encapsulant and outer shell have UL94V-0 ratings. Lead material is brass with a solder plated surface to allow ease of solderability.
- 3. GRID: 0.100 inches, (2.54 mm).
- 4. Pin Placement Tolerance: ±0.015", (±.381 mm).

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Page 4 WPC03R 2/99 REV A