

Product Data Sheet

2:1 Wide Input Range DC/DC Converter

WPC10R



FEATURES

- SAFETY APPROVALS (cULus, CE)
- MEETS EN55022 LEVEL A & B FOR CONDUCTED EMISSIONS WITH A 10 MFD EXTERNAL CAPACITOR
- OPERATING TEMPERATURE RANGE: -40°C TO +100°C
- INDUSTRY STANDARD PINOUTS
- INDUSTRY STANDARD PACKAGE
- LOW PROFILE 0.4 INCH (10MM)
- SHORT CIRCUIT PROTECTION
- TEMPERATURE SHUTDOWN
- REMOTE ON/OFF (OPTIONAL)
- LOW RADIATED EMISSIONS

APPLICATIONS

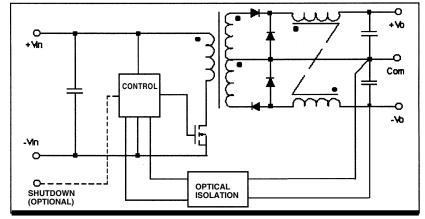
- TELECOMMUNICATION APPLICATIONS
- BATTERY POWERED SYSTEMS
- PORTABLE INSTRUMENTS
- PROCESS CONTROL EQUIPMENT
- TRANSPORTATION EQUIPMENT
- DISTRIBUTED POWER SYSTEMS

DESCRIPTION

The WPC10R is a family of high performance DC/DC converters that offer regulated outputs over two input voltage ranges of 18 - 36 and 28 - 75V and over a wide operating temperature range of -40°C to +100°C without derating.

The 350kHz switching frequency and forward converter topology provide optimum performance in a spacesaving package. The design uses all surface mounted components, including magnetics, to provide enhanced reliability. All models will operate even under no-load conditions, although a minimum load is specified for load regulation measurement purposes. A metal package is utilized for decreased radiated noise and an optional remote enable feature allows low power standby operation.

SIMPLIFIED CIRCUIT DIAGRAM





Internet: http://www.cdpowerelectronics.com

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ELECTRICAL SPECIFICATIONS

Specifications typical at $T_A = +25^{\circ}$ C, nominal input voltage, rated output current unless otherwise specified.

MODEL	NOMINAL INPUT VOLTAGE (VDC)	RATED OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT		VOLTAGE REGULATION			
			MIN LOAD (mA)	RATED LOAD (mA)	LINE (±)	LOAD (±)	NOISE (mVpp)	EFFICIENCY (%)
WPC10R24S03	24	3.3	300	3000	0.5%	1%	75	75
WPC10R24S05	24	5	200	2000	0.5%	1%	75	77
WPC10R24S12	24	12	83	833	0.5%	1%	75	78
WPC10R24S15	24	15	67	666	0.5%	1%	75	79
WPC10R24D05	24	±5	±100	±1000	0.5%	2%	75	77
WPC10R24D12	24	±12	±42	±417	0.5%	2%	75	78
WPC10R24D15	24	±15	±33	±333	0.5%	2%	75	79
WPC10R48S03	48	3.3	300	3000	0.5%	1%	75	77
WPC10R48S05	48	5	200	2000	0.5%	1%	75	79
WPC10R48S12	48	12	83	833	0.5%	1%	75	80
WPC10R48S15	48	15	67	666	0.5%	1%	75	81
WPC10R48D05	48	±5	±100	±1000	0.5%	2%	75	79
WPC10R48D12	48	±12	±42	±417	0.5%	2%	75	80
WPC10R48D15	48	±15	±33	±333	0.5%	2%	75	81

COMMON SPECIFICATIONS

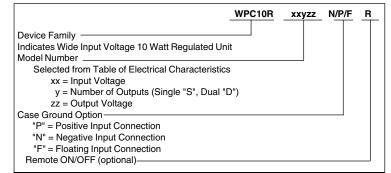
Specifications typical at T_A = +25°C, nominal input voltage, rated output current unless otherwise specified.

PARAMETER	CONDITIONS	MIN	ТҮР	MAX	UNITS
INPUT					
Voltage Range		18	24	36	VDC
	VIN=34-75 for 3.3Vout	28	48	75	VDC
Reflected Ripple Current			20	50	mAp-p
ISOLATION					
Test Voltage	60 Hz, 10 Seconds	1500			Vpk
Resistance			10		GΩ
Capacitance			1500		pF
Leakage Current	V _{ISO} = 240VAC, 60Hz		100		mArms
OUTPUT					
Rated Power				10	Watts
Voltage Setpoint Accuracy			±1		%
Temperature Coefficient			±0.02		%/°C
Line Regulation	Low Line to High Line				
Singles			±0.2		%
Duals			±0.2		%
Load Regulation	Min Load to Rated Load				
Singles			±0.2		%
Duals			±0.5		%
Ripple & Noise	BW = 5 Hz to 20 MHz			75	mVp-p
GENERAL Switching Frequency			350		kHz
MTTF per MIL-HDBK-217, Rev F	Circuit Stress Method,		000		KI IZ
Ground Benign	$T_A = +25^{\circ}C$		933		khr
Package Weight			35		g
TEMPERATURE					
Specification (ambient)		-25		+71	°C
Specification (case)		-25		+100	°Č
Operation (case)		-40		+100	°Č
Storage		-55		+125	°Č

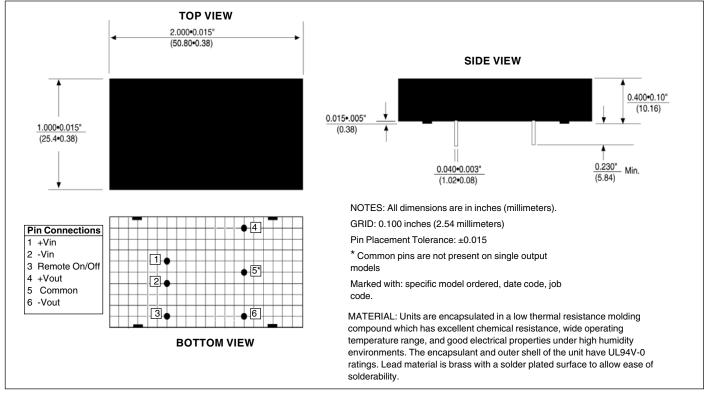
ABSOLUTE MAXIMUM RATINGS

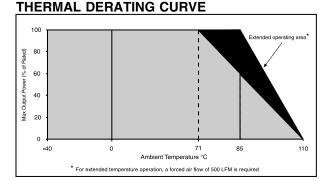
Output Short Circuit Protection (at $T_A = 25^{\circ}$ C, nominal input voltage) Internal Power Dissipation 2.5W Lead Temperature (soldering 10seconds, max) +300°C Maximum Case Temperature

ORDERING INFORMATION



MECHANICAL





REMOTE ON/OFF CONTROL

Logic Compatibility CMC	OS or Open Collector TTL
EC On	Open Circuit or > 2VDC
EC Off	< 1.3VDC
Shutdown Idle Current	<<10mA
Control Common	Vin

Hiweise:

- Ein-und Ausgang des Converters muessen mit dem Schutzleiter verbunden werden

Geraet wird mit einer 2A Sicherung abgesichert

Eingangspannung muss SELV oder TNV nach

EN60950, IEC60950 entsprechen

- Power supply must be fused with a 2A fuse or current limited to 2A max
- Input must be SELV or TNV according to EN60950/ IEC950
- One input and output pin must be tied to safety earth ground

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