Murata Power Solutions

WP06RC

5-6 Watt High Density, Wide Input Range DC/DC Converter



- RoHS Compliant
- 2:1 Input Voltage Range
- Operating Temperature Range: -40°C to +100°C
- Industrial Standard 24 Pin DIL
- Metal Case
- Low Profile 0.4 Inch
- Short Circuit Protection
- Temperature Shutdown

OBSOLETE
Contact us for replacement model

The WP06RC SERIES is a family of high performance DC/DC converters that offers regulated output power over three input voltage ranges of 9-18V, 18-36V, and 34-75V and over a wide operating temperature range of -40°C to +100°C without derating.

The 200kHz switching frequency and flyback converter topology provide optimum performance in a space-saving package. The design utilizes all surface mounted components, including magnetics, to provide enhanced reliability. All models will operate under no-load conditions, although a minimum load is specified for load regulation measurement purposes.

The converter is packaged in a metal case for improved EMI shielding and immunity, and for superior thermal performance.

Applications include: Telecommunications, Battery Powered Systems, Portable Instruments, Process Control Equipment, Transportation Equipment and Distributed Power Systems.

PRODUCT SELECTION CHART

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

MODEL*	NOMINAL INPUT VOLTAGE (VDC)	RATED OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)		INPUT CURRENT (mA)		EFFICIENCY (%)
			MIN LOAD	RATED LOAD	MIN LOAD	RATED LOAD	
WP06R12S05**C	12	5.0	100	1,000	75	540	75
~~WP06R12S12**C~~	~~12~~	~~12.0~~	~~42~~	~~416~~	~~75~~	~~520~~	~~77~~
~~WP06R12S15**C~~	~~12~~	~~15.0~~	~~33~~	~~333~~	~~75~~	~~520~~	~~77~~
WP06R12D05**C	12	+/-5.0	+/-50	+/-500	75	540	75
WP06R12D12**C	12	+/-12.0	+/-21	+/-208	75	520	77
~~WP06R12D15**C~~	~~12~~	~~+/-15.0~~	~~+/-17~~	~~+/-167~~	~~75~~	~~520~~	~~77~~
WP06R24S05**C	24	5.0	100	1,000	35	265	79
WP06R24S12**C	24	12.0	50	500	40	305	80
WP06R24S15**C	24	15.0	40	400	40	305	80
~~WP06R24D05**C~~	~~24~~	~~+/-5.0~~	~~+/-50~~	~~+/-500~~	~~35~~	~~265~~	~~79~~
WP06R24D12**C	24	+/-12.0	+/-25	+/-250	40	310	80
WP06R24D15**C	24	+/-15.0	+/-20	+/-200	40	310	80
WP06R48S05**C	48	5.0	100	1,000	18	130	80
~~WP06R48S12**C~~	~~48~~	~~12.0~~	~~50~~	~~500~~	~~22~~	~~150~~	~~81~~
~~WP06R48S15**C~~	~~48~~	~~15.0~~	~~40~~	~~400~~	~~22~~	~~150~~	~~81~~
~~WP06R48D05**C~~	~~48~~	~~+/-5.0~~	~~+/-50~~	~~+/-500~~	~~18~~	~~133~~	~~78~~
~~WP06R48D12**C~~	~~48~~	~~+/-12.0~~	~~+/-25~~	~~+/-250~~	~~22~~	~~151~~	~~81~~
WP06R48D15**C	48	+/-15.0	+/-20	+/-200	22	151	81

NOTES: Other input to output voltages may be available. Please consult factory.
* See page 2 for complete model number specifications.

RoHS COMPLIANT 2002/95/EC

For full details go to www.murata-ps.com/rohs

ISO9001 CERTIFIED

SPECIFICATIONS, ALL MODELS

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

	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
INPUT	**INPUT**					
	Voltage Range		9	12	18	V_{DC}
			18	24	36	V_{DC}
			34	48	75	V_{DC}
	Reflected Ripple Current			20		mAp-p
OUTPUT	**OUTPUT**					
	Rated Power	12V Input Models			5.0	W
		5V Output Models			5.0	W
		All Other Models			6.0	W
	Voltage Setpoint Accuracy				±1.5	%
	Temperature Coefficient			±0.02		%/°C
	Line Regulation - Singles	Low Line to High Line			±0.25	%
	Line Regulation - Duals				±1.0	%
	Load Regulation - Singles	Min. Load to Rated Load			±0.5	%
	Load Regulation - Duals				±2.0	%
	Ripple & Noise	BW = 5Hz to 20MHz		30	50	mVp-p
GENERAL	**GENERAL**					
	ISOLATION					
	Rated Voltage		1500			V_{DC}
	Test Voltage	60 Hz, 10 Seconds	1500			VPK
	Resistance			10		GΩ
	Capacitance			200		pF
	Leakage Current	V_{ISO} = 240VAC, 60Hz		15		µArms
	Switching Frequency			200		KHz
	MTTF per MIL-HDBK-217, Rev. F	Circuit Stress Method				
	Ground Benign	T_A = +25°C		1200		KHr
	Package Weight			15		g
	TEMPERATURE					
	Specification (Ambient)		-40		+71	°C
	Operation (Case)	Derate linearly from 71°C	-40		+100	°C
	Storage		-55		+125	°C

REMOTE ON/OFF CONTROL

Logic Compatibility ..... CMOS or Open Collector TTL
EC On ..... Open Circuit or > 3VDC
EC Off..... < 1VDC
Shutdown Idle Current..... 1mA
Control Common ..... -Vin

ABSOLUTE MAXIMUM RATINGS

Output Short-Circuit Protection
(At T_A+25°C, nominal input voltage) ..... Continuous
Internal Power Dissipation 1.5W
Max Case Temperature ..... +100°C

ORDERING INFORMATION

WP06R XXYZZ P/N R C

Device Family
5-6W regulated DC/DC

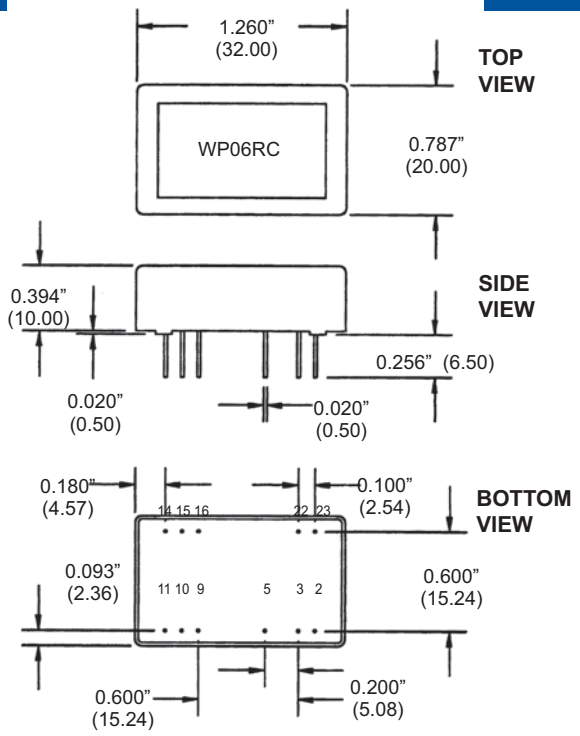
Model Number
xx = Input Voltage
y = Number of Outputs (S=single; D=dual)
zz = Output Voltage

Case Connection (Specify N=Neg. or P=Pos.)
P = Positive InputConnection
N = Negative Input Connection

Remote On/Off (Optional)

RoHS Compliant

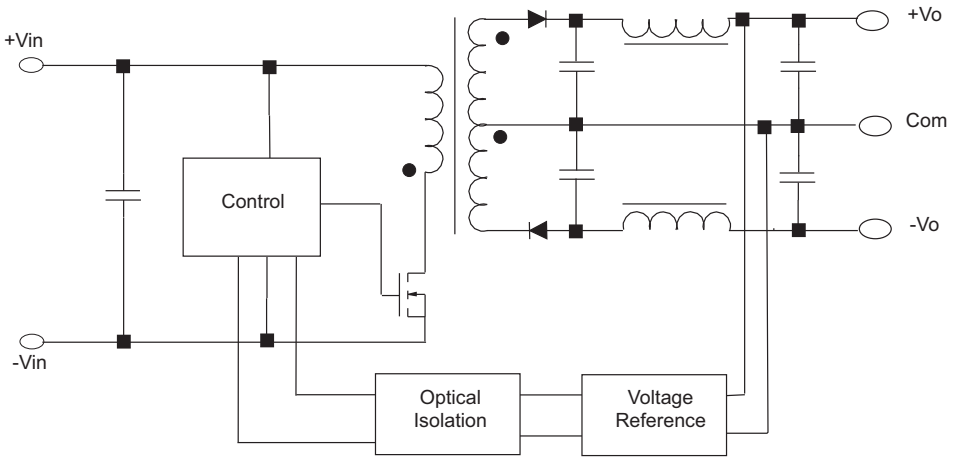
MECHANICAL



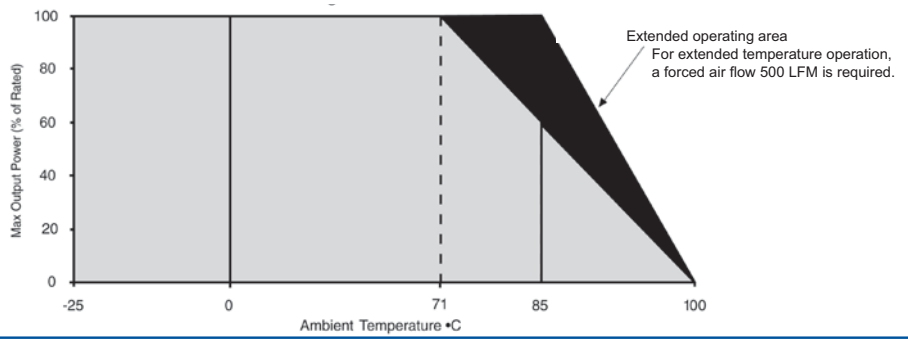
PIN CONNECTIONS		
	Pin Function	
Number	Singles	Duals
2	-Vin	-Vin
3	-Vin	-Vin
5	On/Off (Optional)	On/Off (Optional)
9	No Connection	Com
10	No Connection	No Connection
11	No Connection	-Vout
14	+Vout	+Vout
15	No Connection	No Connection
16		-Vout Com
22	+Vin	+Vin
23	+Vin	+Vin

NOTES:
1) All dimensions in inches (mm).
2) MATERIAL: Units are encapsulated in 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 of the unit have UL94V-0 ratings. Lead material is UNS C36000 brass plated with matte tin 100 micro-inches min., over nickel, 40-80 micro-inches.

SIMPLIFIED CIRCUIT SCHEMATIC



THERMAL DERATING CURVE



THROUGH-HOLE SOLDERING INFORMATION

These devices are intended for wave soldering or manual soldering.
They are not intended to be subject to surface mount processes under any circumstances.

The normal wave soldering process can be used with these devices where the device is subjected to a maximum wave temperature of 260°C for a period of no more than 10 seconds. Within this time and temperature range, the integrity of the device's body will not be compromised and internal temperatures within the converter will not exceed 175°C. Care should be taken to control manual soldering limits identical to that of wave soldering.

Murata Power Solutions

Murata Power Solutions, Inc.
11 Cabot Boulevard, Mansfield, MA 02048-1151 U.S.A.
Tel: (508) 339-3000 (800) 233-2765 Fax: (508) 339-6356
www.murata-ps.com email: sales@murata-ps.com ISO 9001 REGISTERED

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04/16/08

USA: Mansfield (MA), Tel: (508) 339-3000, email: sales@murata-ps.com
Canada: Toronto, Tel: (866) 740-1232, email: toronto@murata-ps.com
UK: Milton Keynes, Tel: +44 (0)1908 615232, email: mk@murata-ps.com
France: Montigny Le Bretonneux, Tel: +33 (0)1 34 60 01 01, email: france@murata-ps.com
Germany: München, Tel: +49 (0)89-544334-0, email: munich@murata-ps.com
Japan: Tokyo, Tel: 3-3779-1031, email: sales_tokyo@murata-ps.com
Osaka, Tel: 6-6354-2025, email: sales_osaka@murata-ps.com
Website: www.murata-ps.jp
China: Shanghai, Tel: +86 215 027 3678, email: shanghai@murata-ps.com
Guangzhou, Tel: +86 208 221 8066, email: guangzhou@murata-ps.com