

HIGH DENSITY 5-6 WATT WIDE INPUT RANGE DC/DC CONVERTER

WP06R



FEATURES

- 2:1 INPUT VOLTAGE RANGE
- OPERATING TEMPERATURE RANGE: -40° TO +100°C
- INDUSTRY STANDARD 24-PIN DIL
- METAL CASE
- LOW PROFILE 0.4 INCH
- SHORT CIRCUIT PROTECTION
- TEMPERATURE SHUTDOWN
- OVERVOLTAGE PROTECTION

DESCRIPTION

The WP06R 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.

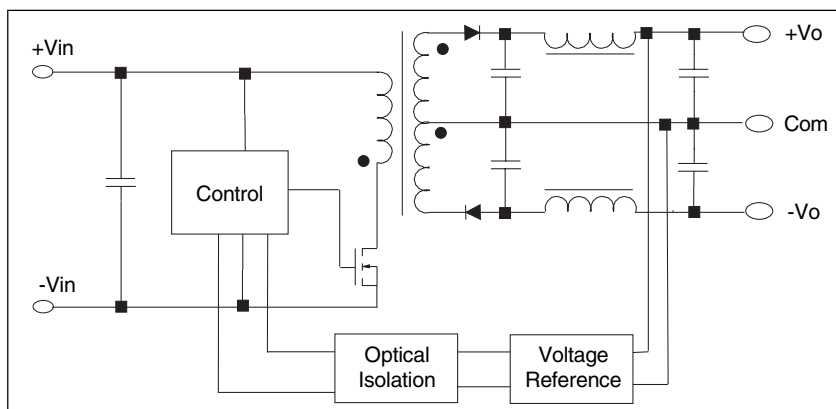
The 200kHz switching frequency and flyback converter topology provide optimum performance in a space-saving package. The design utilizes all surface mounted components, including magnetics, to provide enhanced reliability. All models will operate under no-load conditions, although a minimum load is specified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

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

SIMPLIFIED CIRCUIT SCHEMATIC



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ELECTRICAL SPECIFICATIONS

Specifications typical 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	12	5.0	100	1,000	75	540	75
WP06R12S12	12	12.0	42	416	75	520	77
WP06R12S15	12	15.0	33	333	75	520	77
WP06R12D05	12	±5.0	±50	±500	75	540	75
WP06R12D12	12	±12.0	±21	±208	75	520	77
WP06R12D15	12	±15.0	±17	±167	75	520	77
WP06R24S05	24	5.0	100	1,000	35	265	79
WP06R24S12	24	12.0	50	500	40	305	80
WP06R24S15	24	15.0	40	400	40	305	80
WP06R24D05	24	±5.0	±50	±500	35	265	79
WP06R24D12	24	±12.0	±25	±250	40	310	80
WP06R24D15	24	±15.0	±20	±200	40	310	80
WP06R48S05	48	5.0	100	1,000	18	130	80
WP06R48S12	48	12.0	50	500	22	150	81
WP06R48S15	48	15.0	40	400	22	150	81
WP06R48D05	48	±5.0	±50	±500	18	133	78
WP06R48D12	48	±12.0	±25	±250	22	151	81
WP06R48D15	48	±15.0	±20	±200	22	151	81

NOTE: Other input to output voltages may be available. Please consult factory.

1. A "P" at the end of the part number indicates positive ground option. "N" indicates negative ground option — this designator is mandatory.

2. An additional "R" at the end of the part number indicates that remote on/off is required — this designator is optional.

COMMON SPECIFICATIONS

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

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

ABSOLUTE MAXIMUM RATINGS

Output Short-Circuit Protection (At $T_a + 25^\circ\text{C}$, nominal input voltage)	Continuous
Internal Power Dissipation	1.5W
Lead Temperature (Soldering, 10s Max)	+300°C
Max Case Temperature	+100°C

ORDERING INFORMATION

Device Family WP06R XXYYZZ P/N R
 5-6W regulated DC/DC
 Model Number
 xx = Input Voltage
 y = Number of Outputs (S=single; D=dual)
 zz = Output Voltage
 Ground Connection (Specify N=Neg. or P=Pos.)
 Remote On/Off (Optional)

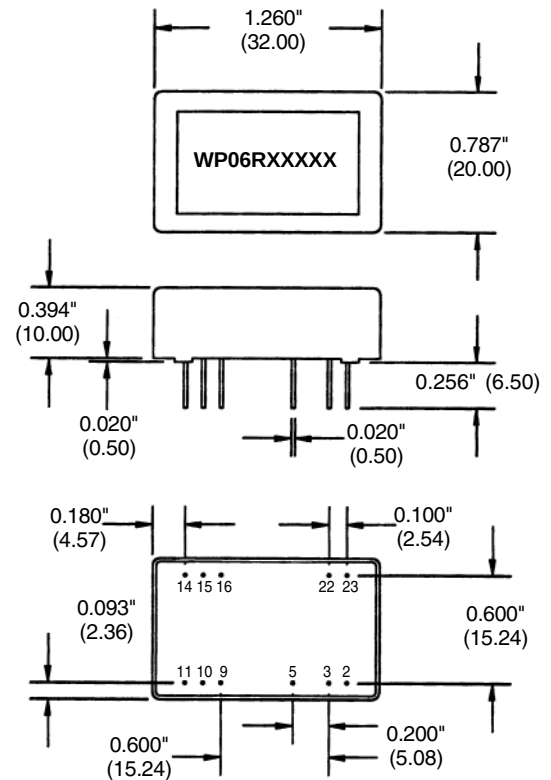
REMOTE ON/OFF CONTROL

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

PINOUTS

Pin Number	Pin Function	
	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

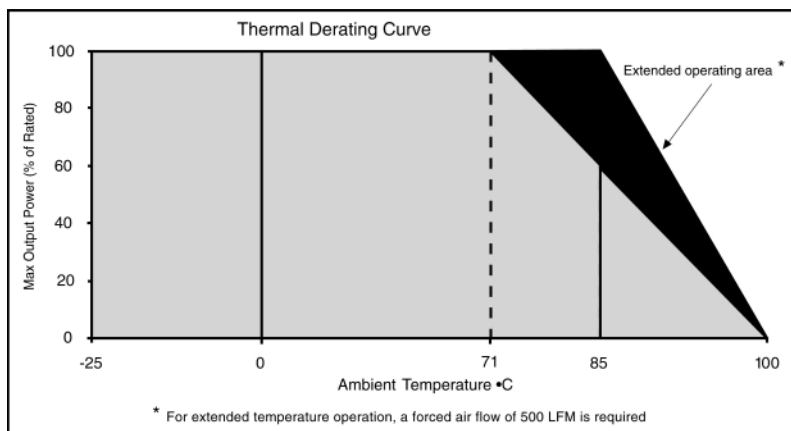
MECHANICAL INFORMATION



NOTES:

- 1) All dimensions in inches (mm)
- 2) Case is metal and lead material is brass with a solder plated surface to allow ease of solderability.

THERMAL DERATING



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