

# .5 - 1.0 WATT DUAL-IN-LINE REGULATED DC/DC CONVERTER PWR59XX



## DESCRIPTION

The PWR59XX Series offers an extensive selection of input and output voltage combinations to choose from, including a 9V output for Cheapernet local area networking. Both single and dual output voltages are available. These miniature, regulated DC/DC converters come in a 24-pin dual-in-line package for applications where space is a concern. The small size is possible through the use of surface mounted devices and manufacturing technologies. SMT processes and components also make it possible to offer the Series with no power derating over an extended temperature range of  $-25^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ .

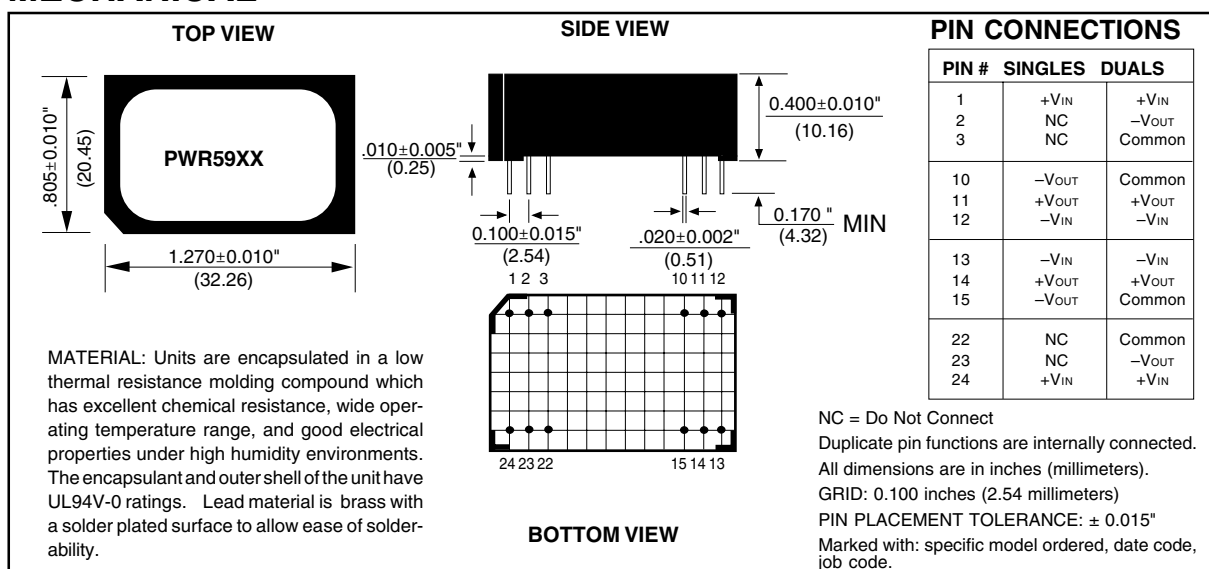
A push-pull input stage ensures fixed frequency, non-saturating operation of the oscillator section of the PWR59XX Series. MOSPOWER transistors are used as high speed switching elements. These rugged devices provide higher frequency to 500kHz operation, and uncomplicated drive circuitry. Reduced component count means higher reliability. High frequency operation means smaller magnetics. Higher isolation voltages are possible, due to the section wound transformer. Higher frequency operation also means less noise generation within the system's bandwidth.

Linear regulators, used in the output stage, output voltage variations due to line and load changes, also provide short-circuit current limiting and thermal overload protection.

## FEATURES

- High Reliability
- 24-Pin DIP Package
- Internal Input and Output Filtering
- Short-Circuit Current Limiting
- Thermal Overload Protection
- Built-In Standoffs
- Industry Standard Pinout

## MECHANICAL



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# ELECTRICAL SPECIFICATIONS

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

MODEL	NOMINAL INPUT VOLTAGE (V <sub>DC</sub> )	RATED OUTPUT VOLTAGE (V <sub>DC</sub> )	RATED OUTPUT CURRENT (mA)	INPUT CURRENT		REFLECTED RIPPLE CURRENT (mAp-p)	EFFICIENCY (%)	RATED OUTPUT POWER (mW)
				NO LOAD (mA)	RATED LOAD (mA)			
PWR5900	5	5	100	40	175	10	57	500
PWR5901	5	9	111	40	345	10	57	1000
PWR5902	5	12	83	40	345	10	57	1000
PWR5903	5	15	67	40	345	10	57	1000
PWR5904	5	±5	±50	40	175	10	57	500
PWR5905	5	±12	±42	40	345	10	57	1000
PWR5906	5	±15	±33	40	345	10	57	1000
PWR5907	12	5	100	35	100	30	42	500
PWR5908	12	9	111	35	170	30	49	1000
PWR5909	12	12	83	35	150	30	55	1000
PWR5910	12	15	67	35	150	30	55	1000
PWR5911	12	±5	±50	35	76	30	55	500
PWR5912	12	±12	±42	35	150	30	55	1000
PWR5913	12	±15	±33	35	150	30	55	1000
PWR5914	15	5	100	30	76	20	44	500
PWR5915	15	9	111	30	135	20	50	1000
PWR5916	15	12	83	30	120	20	55	1000
PWR5917	15	15	67	30	120	20	55	1000
PWR5918	15	±5	±50	30	60	20	55	500
PWR5919	15	±12	±42	30	120	20	55	1000
PWR5920	15	±15	±33	30	120	20	55	1000
PWR5921	24	5	100	15	43	10	48	500
PWR5922	24	9	111	15	83	10	50	1000
PWR5923	24	12	83	15	73	10	55	1000
PWR5924	24	15	67	15	73	10	55	1000
PWR5925	24	±5	±50	15	40	10	55	500
PWR5926	24	±12	±42	15	73	10	60	1000
PWR5927	24	±15	±33	15	73	10	60	1000

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

## COMMON SPECIFICATIONS

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

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
INPUT					
Input Voltage Range		4.75	5	5.25	V <sub>DC</sub>
		11.4	12	12.6	V <sub>DC</sub>
		14.25	15	15.75	V <sub>DC</sub>
		22.8	24	25.2	V <sub>DC</sub>
ISOLATION					
Rated Voltage	60 Hz, 10 Seconds	750			V <sub>DC</sub>
Test Voltage		750			V <sub>pk</sub>
Resistance			10		GW
Capacitance			50		pF
Leakage Current	V <sub>ISO</sub> = 240V <sub>AC</sub> , 60Hz		4		μArms
OUTPUT					
Voltage Setpoint Accuracy	Rated Load, Nominal V <sub>IN</sub>			±5	%
Temperature Coefficient			±0.02		%/°C
Ripple & Noise (BW = DC to 20MHz)	No External Components		50		mVp-p
	10μF Across Each Output		5		mVrms
	10μF Across Each Output		10	20	mVp-p
Line Regulation			±0.3		%
Load Regulation	No Load to Rated Load		±0.4		%
GENERAL					
Switching Frequency	All Models Except 24V <sub>IN</sub> 24V <sub>IN</sub> Models		500 200		kHz kHz
MTTF per MIL-HDBK-217, Rev. E*			900		kHr
Package Weight			11		g
TEMPERATURE					
Specification		-25	+25	+85	°C
Operation		-40		+100	°C
Storage		-40		+110	°C

## ABSOLUTE MAXIMUM RATINGS

Output Short-Circuit Duration .....	Continuous
Internal Power Dissipation .....	1.5W
Lead Soldering Temperature (10seconds, max) .....	+300°C

## ORDERING INFORMATION

Device Family	PWR 59XX	/H
PWR Indicates DC/DC Converter		
Model Number		
Selected from Table of Electrical Characteristics		
Screening Option		

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