Murata Power Solutions

OBSOLETE PRODUCT

Contact Factory for Replacement Model

Product Data Sheet

.5 - 1.0 Watt Dual-In-Line Regulated DC/DC Converter

PWR59XXC

DESCRIPTION

The PWR59XXC 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°C to +85°C.

A push-pull input stage ensures fixed frequency, non-saturating operation of the oscillator section of the PWR59XXC 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**

RoHS COMPLIANT 2002/95/EC

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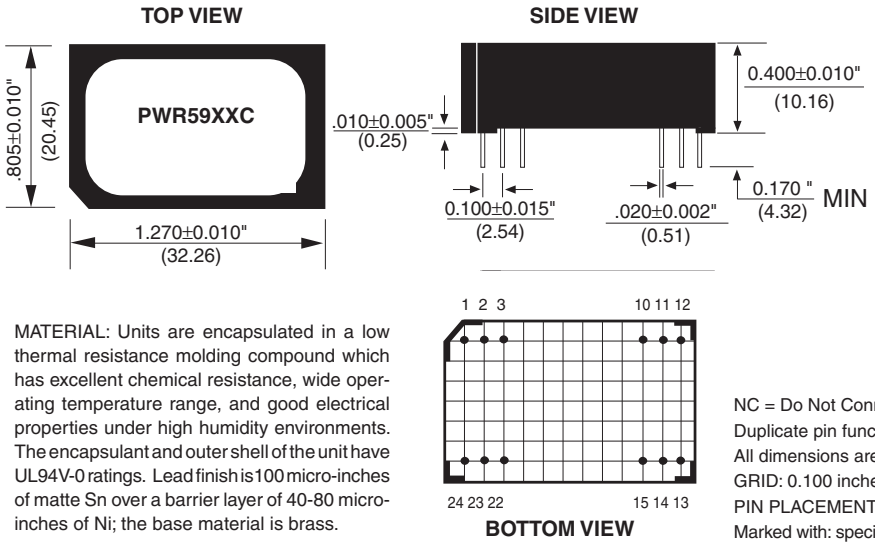
For full details go to www.murata-ps.com/rohs

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 plastic 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.



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 finish is 100 micro-inches of matte Sn over a barrier layer of 40-80 micro-inches of Ni; the base material is brass.

PIN CONNECTIONS

PIN #	SINGLES	DUALS
1	+VIN	+VIN
2	NC	–VOUT
3	NC	Common
10	–VOUT	Common
11	+VOUT	+VOUT
12	–VIN	–VIN
13	–VIN	–VIN
14	+VOUT	+VOUT
15	–VOUT	Common
22	NC	Common
23	NC	–VOUT
24	+VIN	+VIN

NC = Do Not Connect
Duplicate pin functions are internally connected.
All dimensions are in inches (millimeters).
GRID: 0.100 inches (2.54 millimeters)
PIN PLACEMENT TOLERANCE: ± 0.015"
Marked with: specific model ordered, date code, job code.

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ELECTRICAL SPECIFICATIONS ① ②

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

MODEL	NOMINAL INPUT VOLTAGE (VDC)	RATED OUTPUT VOLTAGE (VDC)	RATED OUTPUT CURRENT (mA)	INPUT CURRENT NO LOAD (mA)	INPUT CURRENT RATED LOAD (mA)	REFLECTED RIPPLE CURRENT (mAp-p)	EFFICIENCY (%)	RATED OUTPUT POWER (mW)
PWR5900C	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~~
PWR5904C	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~~

Notes: ① Other input to output voltages may be available. Please consult factory.
② Strikethrough font denotes discontinued models.

ABSOLUTE MAXIMUM RATINGS

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

COMMON SPECIFICATIONS

Specifications typical at T_A = +25°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	VDC
		11.4	12	12.6	VDC
		14.25	15	15.75	VDC
		22.8	24	25.2	VDC
ISOLATION					
Rated Voltage		750			VDC
Test Voltage	60 Hz, 10 Seconds	750			Vpk
Resistance			10		GW
Capacitance			50		pF
Leakage Current	V_{ISO} = 240VAC, 60Hz		4		µArms
OUTPUT					
Voltage Setpoint Accuracy	Rated Load, Nominal V_{IN}			±5	%
Temperature Coefficient			±0.02		%/°C
Ripple & Noise	No External Components		50		mVp-p
(BW = DC to 20MHz)	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_{IN}		500		kHz
	24V_{IN} Models		200		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

ORDERING INFORMATION

PWR 59XX C

- Device Family: PWR Indicates DC/DC Converter
- Model Number: Selected from Table of Electrical Characteristics
- RoHS Compliant

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