

Wall Industries, Inc.

LANCUW15 SERIES

4:1 Wide Input Voltage Range
Single and Dual Outputs
24 Pin DIP Package
15 Watt DC/DC Power Converters



APPLICATIONS

- Wireless Networks
- Telecom / Datacom
- Measurement Equipment
- Industry Control Systems
- Semiconductor Equipment

FEATURES

- Single and Dual Outputs
- Low Profile
- High Power Density with 15 Watts Output Power
- 4:1 Wide Input Voltage Range
- High Efficiency up to 90%
- 1600VDC I/O Isolation
- Output Current up to 4A
- Positive Logic Remote ON/OFF
- Fixed Switching Frequency
- Over Voltage, Over Load, and Short Circuit Protection
- Low Standby Power Dissipation
- Input Under Voltage Lockout
- Six-Sided Continuous Shield
- Standard 24 Pin DIP Package
- UL60950-1, EN60950-1, and IEC60950-1 Safety Approvals
- Compliant to RoHS EU Directive 2002/95/EC

DESCRIPTION

The LANCW15 series of DC/DC power converters provides 15 watts of output power in a 1.25 x 0.80 x 0.40 inch DIP package. This series has single and dual output models with 4:1 wide input voltage ranges of 9-36VDC and 18-75VDC. Some features include high efficiency, 1600VDC I/O isolation, six-sided shielding, and positive logic remote ON/OFF. These converters are also protected against over voltage (single outputs only), over load, and short circuit conditions. All models are RoHS compliant and have UL60950-1, EN60950-1, and IEC60950-1 safety approvals. This series is best suited for use in wireless networks, telecom/datacom, measurement equipment, industry control systems, and semiconductor equipment.

SPECIFICATIONS: LANC UW15 Series							
All specifications are based on 25°C, Nominal Input Voltage, and Maximum Output Current unless otherwise noted. We reserve the right to change specifications based on technological advances.							
SPECIFICATION	TEST CONDITIONS		Min	Nom	Max	Unit	
INPUT SPECIFICATIONS							
Input Voltage Range	24VDC nominal input models		9	24	36	VDC	
	48VDC nominal input models		18	48	75		
Input Surge Voltage (1 sec max)	24VDC nominal input models				50	VDC	
	48VDC nominal input models				100		
Start-Up Voltage	24VDC nominal input models				9	VDC	
	48VDC nominal input models				18		
Shutdown Voltage	24VDC nominal input models			8		VDC	
	48VDC nominal input models			16			
Input Reflected Ripple Current	Nominal Vin and full load			20		mAp-p	
Input Filter						Pi type	
OUTPUT SPECIFICATIONS							
Output Voltage						See Table	
Line Regulation	Low line to high line at full load	Single Output	-0.2		+0.2	%	
		Dual Output	-0.5		+0.5		
Load Regulation	No load to full load	Single Output	-0.5		+0.5	%	
		Dual Output	-1		+1		
Cross Regulation (Dual Outputs)	Asymmetrical load 25% to 100% full load		-5		+5	%	
Voltage Accuracy	Full load an nominal Vin		-1.0		+1.0	%	
Output Power						15	W
Output Current						See Table	
Ripple & Noise (See Note 6)	20MHz Bandwidth			85		mVp-p	
Transient Response Recovery Time	25% load step change			250		µs	
Start-Up Time	Nominal Vin and constant resistive load	Power Up			30	ms	
Minimum Load						0	%
Temperature Coefficient						-0.02	%/°C
PROTECTION							
Over Load Protection	% of full load at nominal input			150		%	
Short Circuit Protection						Hiccup, automatic recovery	
Over Voltage Protection (Single Outputs only)						See Table	
GENERAL SPECIFICATIONS							
Efficiency	Nominal Vin and full load					See Table	
Switching Frequency				330		KHz	
Isolation Voltage	Input to Output		1600			VDC	
	Input to Case		1600				
	Output to Case		1600				
Isolation Resistance						10	GΩ
Isolation Capacitance						2000	pF
REMOTE ON/OFF							
Positive Logic (See Note 7)	DC/DC ON					Open or 3.0V < Vr < 12V	
	DC/DC OFF					Short or 0V < Vr < 1.2V	
Input Current of Remote Control Pin	Nominal Vin		-0.5		+0.5	mA	
Remote Off State Input Current	Nominal Vin			2.5		mA	
ENVIRONMENTAL SPECIFICATIONS							
Operating Ambient Temperature	With derating		-40		+100	°C	
Maximum Case Temperature						+105	°C
Storage Temperature						+105	°C
Relative Humidity						5	% RH
Thermal Shock						MIL-STD-810F	
Vibration						MIL-STD-810F	
Thermal Impedance	Natural Convection			20		°C/Watt	
MTBF (See Note 1)	BELLCORE TR-NWT-000332					3,374,000 hours	
	MIL-HDBK-217F					413,500 hours	
PHYSICAL SPECIFICATIONS							
Weight						0.51oz (14.4g)	
Case Material						Nickel-coated copper	
Base Material						FR4 PCB	
Potting Material						Epoxy (UL94-V0)	
Dimensions (L x W x H)						1.25 x 0.80 x 0.40 inches (31.8 x 20.3 x 10.2 mm)	
SAFETY & EMC CHARACTERISTICS							
Safety Approvals						IEC60950-1, UL60950-1, EN60950-1	
EMI (See Note 8)	EN55022					Class A	
	EN55022					Class B	
ESD	EN61000-4-2		Air	±8KV		Perf. Criteria A	
			Contact	±6KV			
Radiated Immunity	EN61000-4-3		10 V/m			Perf. Criteria A	
Fast Transient (See Note 9)	EN61000-4-4		±2KV			Perf. Criteria A	
Surge (See Note 9)	EN61000-4-5		±1KV			Perf. Criteria A	
Conducted Immunity	EN61000-4-6		10 Vrms			Perf. Criteria A	

MODEL SELECTION TABLES

SINGLE OUTPUT MODELS										
Model Number	Input Voltage Range	Output Voltage	Output Current		Input Current		Over Voltage Protection	Output Power	Efficiency ⁽⁴⁾	Maximum ⁽⁵⁾ Capacitive Load
			Min. Load	Full Load	No Load ⁽³⁾	Full Load ⁽²⁾				
LANC2433UW15	24 VDC (9 – 36 VDC)	3.3 VDC	0mA	4000mA	6mA	654mA	3.9 VDC	13.2W	88%	4700µF
LANC2451UW15		5.1 VDC	0mA	3000mA	6mA	741mA	6.2 VDC	15W	90%	3300µF
LANC2412UW15		12 VDC	0mA	1250mA	6mA	726mA	15 VDC	15W	90%	600µF
LANC2415UW15		15 VDC	0mA	1000mA	6mA	726mA	18 VDC	15W	90%	400µF
LANC4833UW15	48 VDC (18 – 75 VDC)	3.3 VDC	0mA	4000mA	4mA	323mA	3.9 VDC	13.2W	89%	4700µF
LANC4851UW15		5.1 VDC	0mA	3000mA	4mA	375mA	6.2 VDC	15W	89%	3300µF
LANC4812UW15		12 VDC	0mA	1250mA	4mA	363mA	15 VDC	15W	90%	600µF
LANC4815UW15		15 VDC	0mA	1000mA	4mA	363mA	18 VDC	15W	90%	400µF

DUAL OUTPUT MODELS										
Model Number	Input Voltage Range	Output Voltage	Output Current		Input Current		Output ⁽⁶⁾ Ripple & Noise	Output Power	Efficiency ⁽⁴⁾	Maximum ⁽⁵⁾ Capacitive Load
			Min. Load	Full Load	No Load ⁽³⁾	Full Load ⁽²⁾				
LANC2405DUW15	24 VDC (9 – 36 VDC)	±5 VDC	0mA	±1500mA	6mA	762mA	85mVp-p	15W	86%	±1500µF
LANC2412DUW15		±12 VDC	0mA	±625mA	6mA	735mA	85mVp-p	15W	89%	±288µF
LANC2415DUW15		±15 VDC	0mA	±500mA	6mA	726mA	85mVp-p	15W	90%	±200µF
LANC4805DUW15	48 VDC (18 – 75 VDC)	±5 VDC	0mA	±1500mA	4mA	381mA	85mVp-p	15W	86%	±1500µF
LANC4812DUW15		±12 VDC	0mA	±625mA	4mA	368mA	85mVp-p	15W	89%	±288µF
LANC4815DUW15		±15 VDC	0mA	±500mA	4mA	363mA	85mVp-p	15W	90%	±200µF

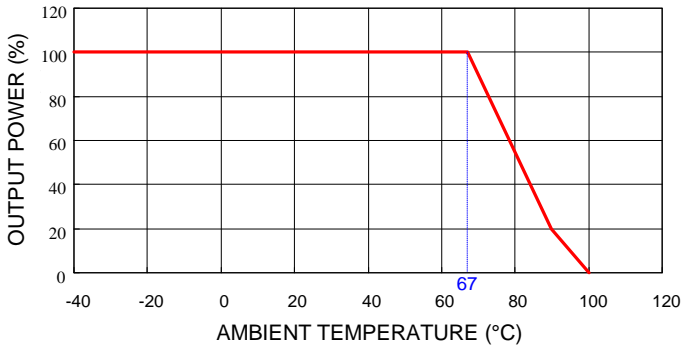
NOTES

1. BELLCORE TR-NWT-000332. Case 1: 50% Stress, Temperature at 40°C. MIL-HDBK-217F Notice2 @Ta=25°C, Full load (Ground, Benign, controlled environment).
2. Maximum value at nominal input voltage and full load.
3. Typical value at nominal input voltage and no load.
4. Typical value at nominal input voltage and full load.
5. Test by minimum Vin and constant resistive load.
6. Ripple and Noise is measured with a 1µF ceramic capacitor in parallel with the output pins.
7. The ON/OFF control pin voltage is referenced to -Vin.
8. The LANCUW15 series can meet EN55022 Class B with an external filter on the input pins to the converter. Please call factory for more detailed information.
9. An external input filter capacitor is required if the module has to meet EN61000-4-4, EN61000-4-5. The filter capacitor suggested is Nippon chemi-con KY series, 220µF/100V.

CAUTION: This power module is not internally fused. An input line fuse must always be used.
Due to advances in technology, specifications subject to change without notice.

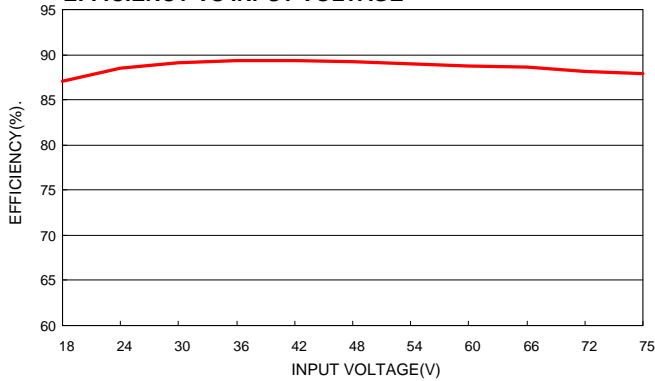
DERATING CURVE

LANC4851UW15 DERATING CURVE

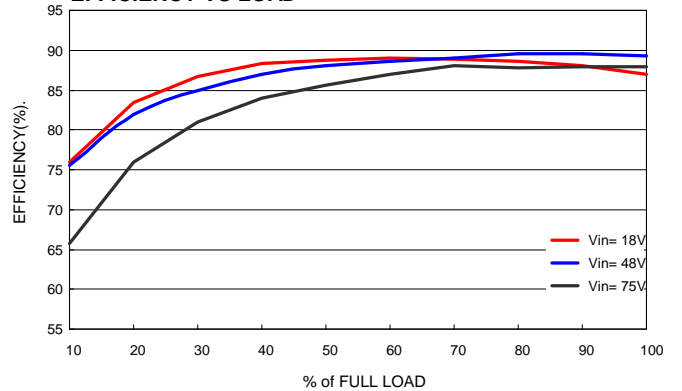


CHARACTERISTICS

LANC4851UW15
EFFICIENCY VS INPUT VOLTAGE



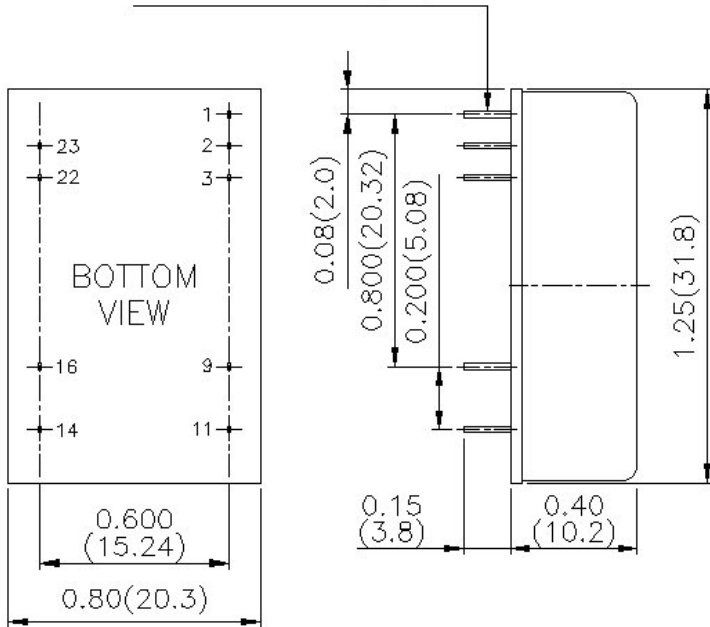
LANC4851UW15
EFFICIENCY VS LOAD



MECHANICAL DRAWING

Unit: inches (mm)

Pin size is 0.02(0.5) Dia



PIN CONNECTIONS

PIN	SINGLE	DUAL	PIN	SINGLE	DUAL
1	CTRL	CTRL			
2	-INPUT	-INPUT	23	+INPUT	+INPUT
3	-INPUT	-INPUT	22	+INPUT	+INPUT
9	NC	COMMON	16	-OUTPUT	COMMON
11	NC	-OUTPUT	14	+OUTPUT	+OUTPUT

- Tolerance: x.xx±0.02 (x.x±0.5)
x.xxx±0.01 (x.xx±0.25)
- Pin Pitch Tolerance: ±0.01 (0.25)
- Pin Material: Copper
- Pin Foundation Plating / Thickness: nickel / 1-3µm
- Pin Surface / Thickness: Tin / 3-5µm
- Pin Finishing: Matte

COMPANY INFORMATION

Wall Industries, Inc. has created custom and modified units for over 50 years. Our in-house research and development engineers will provide a solution that exceeds your performance requirements on-time and on budget. Our ISO9001-2008 certification is just one example of our commitment to producing a high quality, well-documented product for our customers.

Our past projects demonstrate our commitment to you, our customer. Wall Industries, Inc. has a reputation for working closely with its customers to ensure each solution meets or exceeds form, fit and function requirements. We will continue to provide ongoing support for your project above and beyond the design and production phases. Give us a call today to discuss your future projects.

Contact **Wall Industries** for further information:

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