Wall Industries, Inc.

LANCW8 Series
Single and Dual Output
8 Watt DC/DC Converter
2:1 Wide Input Voltage Range

FEATURES
- 8 Watts Output Power
- Output Current up to 2A
- High Efficiency up to 85%
- Five-Sided Continuous Shield
- 2:1 Wide Input Voltage Range
- Fixed Switching Frequency (300KHz)
- Standard 1.25 x 0.8 x 0.4 Inch Package
- ISO9001 Certified Manufacturing Facilities
- Compliant to RoHS EU Directive 2002/95/EC
- Standard 24 Pin DIP Package & SMT Type Package

APPLICATIONS
- Measurement
- Wireless Network
- Telecom/Datacom
- Industry Control System
- Semiconductor Equipment

SPECIFICATIONS: *LANCW8 Series*

All specifications apply @ 25°C ambient unless otherwise noted

INPUT SPECIFICATIONS

Input Voltage Range	12V nominal input	9-18VDC
	24V nominal input	18-36VDC
	48V nominal input	36-75VDC
Input Filter		Pi Type
Input Surge Voltage (100ms max)	12V input	36VDC
	24V input	50VDC
	48V input	100VDC
Input Reflected Ripple Current (nominal Vin and full load)		20mAp-p
Start Up Time (nominal Vin and constant resistive load)		700ms max.
Remote ON/OFF (See Note 6)		
(Positive Logic)	DC-DC ON	Open or 3.5V < Vr < 12V
	DC-DC OFF	Short or 0V < Vr < 1.2V
Input Current of Remote Control Pin (nominal Vin)		-0.5mA ~ +0.5mA
Remote Off State Input Current (nominal Vin)		2.5mA

OUTPUT SPECIFICATIONS

Output Voltage		see table
Voltage Accuracy (nominal Vin and full load)		±1%
Output Current		see table
Output Power		8 watts max.
Line Regulation (LL to HL at FL)		±0.2%
Load Regulation (no load to full load)	Single Output (DIP)	±0.5%
	Single Output (SMT)	±1%
	Dual Output (SMT, DIP)	±1%
Cross Regulation (Dual) (Asymmetrical load 25% / 100% FL)		±5%
Minimum Load		0%
Ripple/Noise (20 MHz BW)		50mVp-p
Temperature Coefficient		±0.02% / °C max.
Transient Response Recovery Time (25% load step)		200us

PROTECTION SPECIFICATIONS

Over Load Protection (% of full load at nominal input)	150% max.
Short Circuit Protection.	Continuous, automatic recovery

GENERAL SPECIFICATIONS

Efficiency	see table
Switching Frequency	300KHz typ.

GENERAL SPECIFICATIONS (Continued)

Isolation Voltage		
	Input to Output	1600VDC min.
	Input (Output) to Case (DIP)	1600VDC min.
	Input (Output) to Case (SMT)	1000VDC min.
Isolation Resistance		10^9 ohms min.
Isolation Capacitance		300pF max.

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-40°C ~ +85°C (with derating)
Storage Temperature	-55°C ~ +105°C
Maximum Case Temperature	100°C
Relative Humidity (non-condensing)	5% to 95% RH
Thermal Impedance (Natural Convection)	20°C / Watt
Thermal Shock	MIL-STD-810F
Vibration	10~55Hz, 10G, 30 minutes along X, Y, and Z
MTBF (See Note 1)	3.053 x 10^6 hours

PHYSICAL SPECIFICATIONS

Weight	DIP Type	16g (0.55 oz)
	SMT Type	18g (0.62 oz)
Dimensions		1.25 x 0.80 x 0.40 inches (31.8 x 20.3 x 10.2 mm)
Case Material		Nickel-coated copper
Base Material		Non-conductive black plastic
Potting material		Epoxy (UL94-V0)
Shielding		five - sided

SAFETY & EMC

Approvals and Standards	IEC60950-1, UL60950-1, EN60950-1			
EMI (Note 7)	EN55022	Class A		
ESD	EN61000-4-2	Air	± 8KV	Perf. Criteria B
		Contact	± 6KV	
Radiated Immunity	EN61000-4-3	10V/m		Perf. Criteria A
Fast Transient	EN61000-4-4	±2KV		Perf. Criteria B
Surge (See Note 8)	EN61000-4-5	±1KV		Perf. Criteria B
Conducted Immunity	EN61000-4-6	10 Vrms		Perf. Criteria A

Due to advances in technology, specifications subject to change without notice

Wall Industries, Inc. 5 Watson Brook Road Exeter, NH 03833
603-778-2300 www.wallindustries.com Fax 603-778-9797

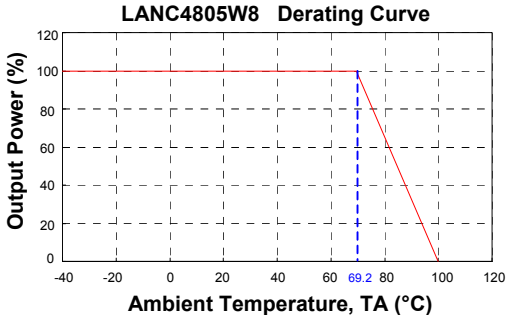
OUTPUT VOLTAGE / CURRENT RATING CHART

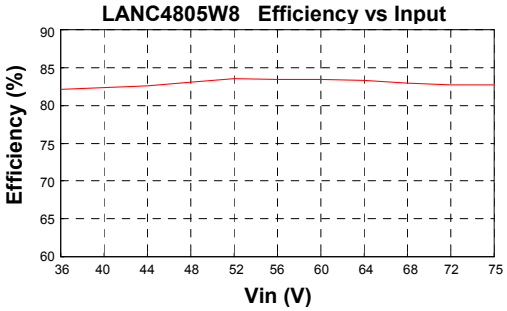
Model Number	Input Range	Output Voltage	Output Current		Output [4] Ripple & Noise	Input Current		Efficiency [4]	Capacitor [5] Load max
			Min. load	Full load		No load [3]	Full load [2]		
LANC123.3W8	12 VDC (9 – 18 VDC)	3.3 VDC	0mA	2000mA	50mVp-p	10mA	724mA	80%	3300uF
LANC1205W8		5 VDC	0mA	1500mA	50mVp-p	15mA	791mA	83%	1600uF
LANC1212W8		12 VDC	0mA	666mA	50mVp-p	13mA	792mA	88%	350uF
LANC1215W8		15 VDC	0mA	533mA	50mVp-p	20mA	802mA	87%	240uF
LANC1205DW8		±5 VDC	0mA	±800mA	50mVp-p	15mA	843mA	83%	±1000uF
LANC1212DW8		±12 VDC	0mA	±333mA	50mVp-p	20mA	802mA	87%	±160uF
LANC1215DW8		±15 VDC	0mA	±267mA	50mVp-p	20mA	824mA	85%	±100uF
LANC243.3W8	24 VDC (18 – 36 VDC)	3.3 VDC	0mA	2000mA	50mVp-p	10mA	362mA	80%	3300uF
LANC2405W8		5 VDC	0mA	1500mA	50mVp-p	30mA	396mA	83%	1600uF
LANC2412W8		12 VDC	0mA	666mA	50mVp-p	13mA	406mA	86%	350uF
LANC2415W8		15 VDC	0mA	533mA	50mVp-p	15mA	411mA	85%	240uF
LANC2405DW8		±5 VDC	0mA	±800mA	50mVp-p	15mA	427mA	82%	±1000uF
LANC2412DW8		±12 VDC	0mA	±333mA	50mVp-p	15mA	406mA	86%	±160uF
LANC2415DW8		±15 VDC	0mA	±267mA	50mVp-p	13mA	411mA	85%	±100uF
LANC483.3W8	48 VDC (36 – 75 VDC)	3.3 VDC	0mA	2000mA	50mVp-p	7mA	181mA	80%	3300uF
LANC4805W8		5 VDC	0mA	1500mA	50mVp-p	8mA	198mA	83%	1600uF
LANC4812W8		12 VDC	0mA	666mA	50mVp-p	10mA	203mA	86%	350uF
LANC4815W8		15 VDC	0mA	533mA	50mVp-p	10mA	203mA	86%	240uF
LANC4805DW8		±5 VDC	0mA	±800mA	50mVp-p	8mA	205mA	85%	±1000uF
LANC4812DW8		±12 VDC	0mA	±333mA	50mVp-p	8mA	200mA	87%	±160uF
LANC4815DW8		±15 VDC	0mA	±267mA	50mVp-p	7mA	201mA	87%	±100uF

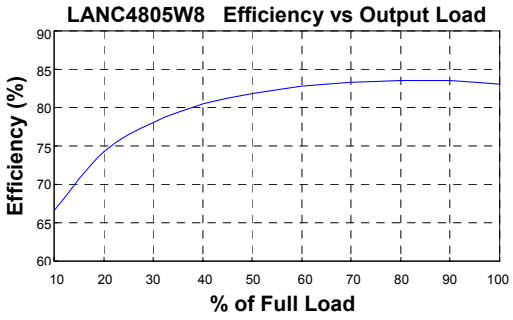
NOTES

1. BELLCORE TR-NWT-000332. Case I: 50% Stress, Temperature at 40ºC. (Ground fixed and controlled environment).
2. Maximum value at nominal input voltage and full load of standard type.
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. The ON/OFF control pin voltage is referenced to –Vin.
7. The LANCW8 Series can meet EN55022 Class A with an external capacitor in parallel with the input pins.
   Recommended: 12Vin: 4.7µF/25V
   24Vin: N/A.
   48Vin: N/A.
8. An external filter capacitor is required if the module has to meet EN61000-4-5. The filter capacitor Wall Industries suggests: Nippon chemi-con KY Series, 220µF/100V, ESR 48mΩ.

DERATING CURVE & EFFICIENCY GRAPHS



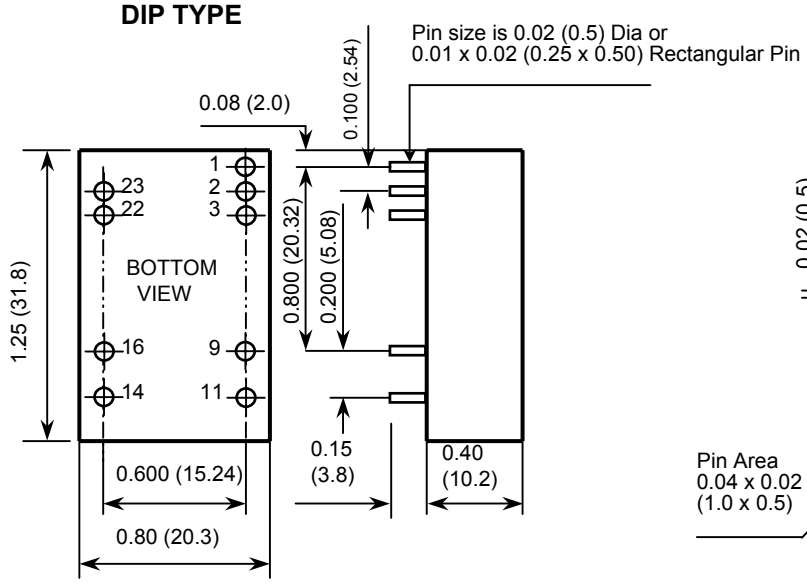




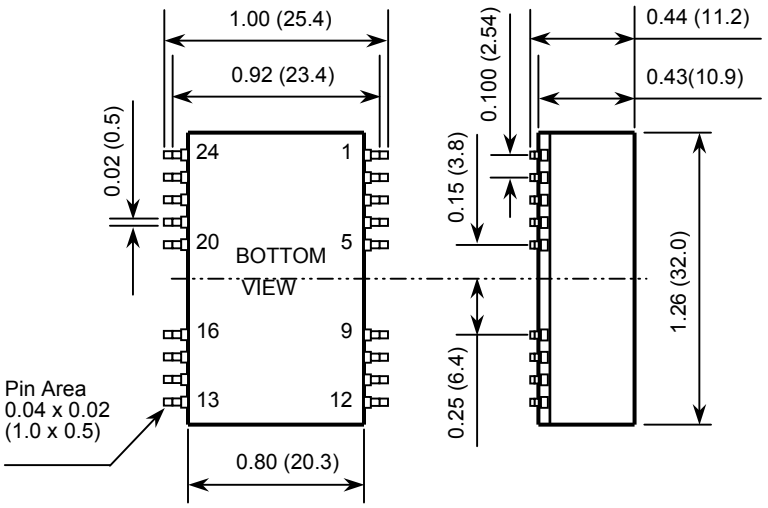
MECHANICAL DRAWING

1. All dimensions are in inches (mm)
   Tolerance: X.XX±0.02 (X.X±0.5)
   X.XXX±0.01 (X.XX±0.25)
2. Pin pitch tolerance ±0.01 (0.25)

DIP TYPE



SMT TYPE
(add suffix "S")



(DIP) PIN CONNECTION					
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

(SMT) PIN CONNECTION					
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
Others	NC	NC	Others	NC	NC

FIGURE 1

Recommended Filter for EN55022 Class B Compliance

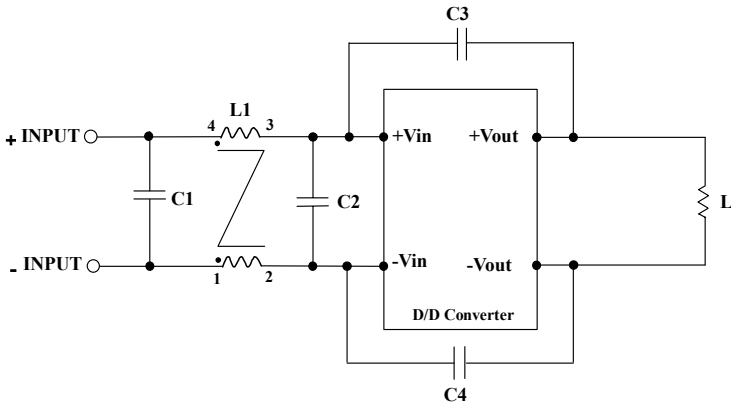
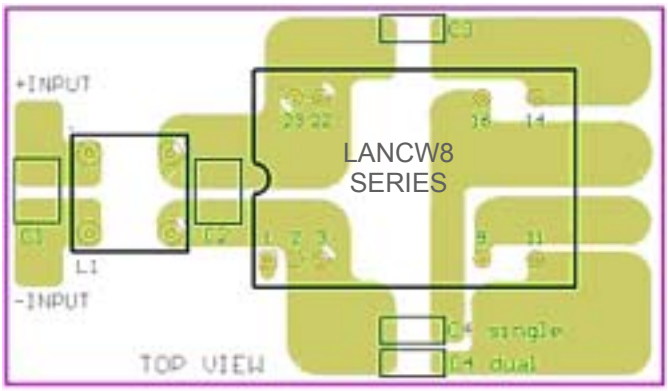


FIGURE 2

Recommended EN55022 Class B Filter Circuit Layout



The components used in the Figure 1, together with the manufacturers' part numbers for these components, are as follows:

	C1	C2	C3	C4	L1
LANC12xxW8	4.7uF/50V	N/A	1000pF/2KV	1000pF/2KV	325uH Common Choke
LANC24xxW8	6.8uF/50V	N/A	1000pF/2KV	1000pF/2KV	325uH Common Choke
LANC48xxW8	2.2uF/100V	2.2uF/100V	1000pF/2KV	1000pF/2KV	325uH Common Choke