DATA SHEET

VB SERIES

TO 3 WATTS

WALL INDUSTRIES, INC.

DC/DC CONVERTER
VB24D15-3
EXETER, NH 03833

- **Surface mount**
- **Efficiency up to 83%**
- **2/1 input range (9 to 75 Vin)**
- **1500VDC isolation**
- **Continuous short-circuit protection**
- **Tight line/load regulation**
- **Single and dual outputs**
- **MTBF > 1,000,000 hours minimum**
- **UL/CUL 1950 safety approval**
- **Water washable**

This economically priced dc/dc converter offers 3 wide input ranges of 9-18, 18-36, and 36-75VDC. It is suitable for telecom, process control, battery backup, and other applications where tight line/load regulation is required.

MODELS

INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	EFFICIENCY (%)	MODEL NUMBER	UL Approval[8]
12 (9 - 18)	3.3	700	75	VB12S3.3-2.3	UL/CUL 1950
	5	600	79	VB12S5-3	UL/CUL 1950
	12	250	82	VB12S12-3	UL/CUL 1950
	15	200	82	VB12S15-3	-
	±5	±300	78	VB12D5-3	-
	±12	±125	81	VB12D12-3	UL/CUL 1950
	±15	±100	81	VB12D15-3	UL/CUL 1950
24 (18 - 36)	3.3	700	76	VB24S3.3-2.3	UL/CUL 1950
	5	600	80	VB24S5-3	UL/CUL 1950
	12	250	83	VB24S12-3	UL/CUL 1950
	15	200	83	VB24S15-3	-
	±5	±300	79	VB24D5-3	-
	±12	±125	82	VB24D12-3	UL/CUL 1950
	±15	±100	82	VB24D15-3	UL/CUL 1950
48 (36 - 75)	3.3	700	76	VB48S3.3-2.3	UL/CUL 1950
	5	600	80	VB48S5-3	UL/CUL 1950
	12	250	83	VB48S12-3	UL/CUL 1950
	15	200	83	VB48S15-3	-
	±5	±300	79	VB48D5-3	-
	±12	±125	82	VB48D12-3	UL/CUL 1950
	±15	±100	82	VB48D15-3	UL/CUL 1950

10/23/2019

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Page 1 of 5

SPECIFICATIONS

All specifications apply at 25ºC unless otherwise noted.

SPECIFICATION	VALUE
INPUT	
Input Voltage Range	9-18, 18-36, 36-75
Input Filter	Pi Filter
OUTPUT	
Output Current	see model information table
Voltage Accuracy	±0.5% typ., 1.0% max.
Line Regulation (HL-LL)	±0.3% max.
Load Regulation (10-100% load)	±0.3% typ., 1.0% max.
Short Circuit Protection	continuous
Ripple/Noise (20MHz BW)	75 mV p-p max.
Transient Response	200 uS typ., 500uS max.
GENERAL	
Efficiency	see model information table
Isolation Voltage (input to output)	1500 VDC
Isolation Resistance (500 VDC)	1000 M Ohms
Switching Frequency	300 kHz typ.
ENVIRONMENTAL	
Operating Temperature (ambient)	-40°C to +71°C (case 90°C)
Storage Temperature	-40°C to +125°C
Humidity (non-condensing)	95% max.
Cooling	free air convection
PHYSICAL	
Dimensions	1.27 x 0.74 x 0.4 inches
Weight	5.75 grams
Case Material	non-conductive black plastic
Flammability	UL94V-0

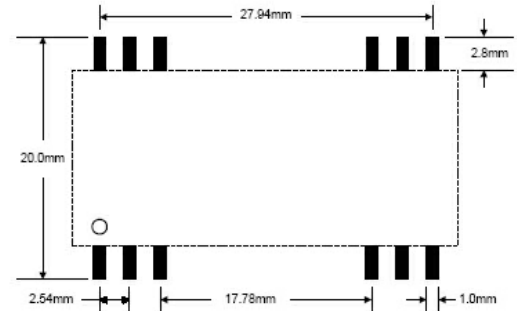*Due to advances in technology, specifications subject to change without notice.*

NOTES

1) Efficiency (%) measured at maximum load.
2) These converters require a minimum load to maintain specified regulation.
3) All dc/dc converters should be externally fused at the input side for protection, consult factory for more information.
4) Other input and output voltages may be available, please consult factory for more information.
5) Specifications subject to change without notice.
6) Operation under no-load conditions will NOT damage these converters however they may not meet all listed specifications under such conditions.
7) Transient recovery time is measured to within 1% error band for a step change in output load of 75% to 100%.
8) UL approval can be added to any products not currently listed if required.

WALL INDUSTRIES, INC.

Mechanical Dimensions

Tolerance	Millimeters	Inches
	X.X±0.25	X.XX±0.01
	X.XX±0.13	X.XXX±0.005
Pin	±0.05	±0.002

Connecting Pin Patterns
Top View (2.54 mm / 0.1 inch grids)

Pin Connections

Pin	Single Output	Dual Output
1	−Vin	−Vin
2	−Vin	−Vin
3	NC	NC
10	NC	Common
11	NC	NC
12	NC	−Vout
13	+Vout	+Vout
14	NC	NC
15	−Vout	Common
22	NC	NC
23	+Vin	+Vin
24	+Vin	+Vin

NC: No Connection

Physical Characteristics

|		
Case Size	:	32.3×14.8×10.2 mm 1.27×0.58×0.40 inches
Case Material	:	Non−Conductive Black Plastic
Weight	:	5.75g
Flammability	:	UL94V−0

Units are encapsulated in a low thermal resistance molding compound that has excellent resistance/electrical characteristics over a wide temperature range or in high humidity environments. The encapsulant and unit case are both rated to UL 94V-0 flammability specifications. Leads are tin plated for improved solderability.
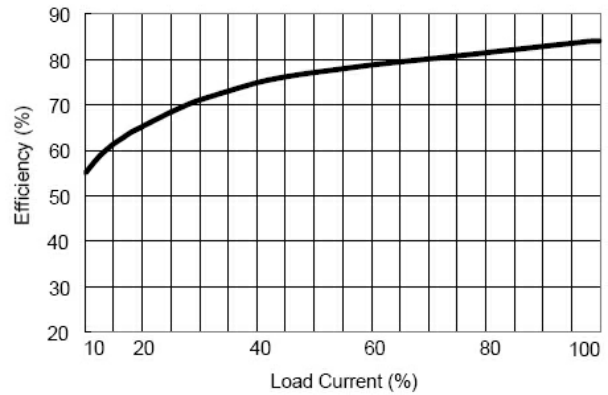
WALL INDUSTRIES, INC.
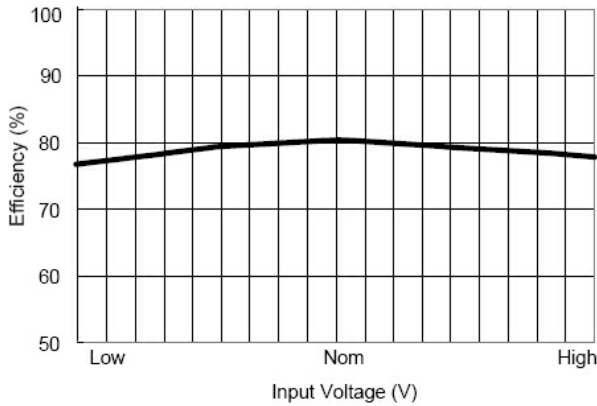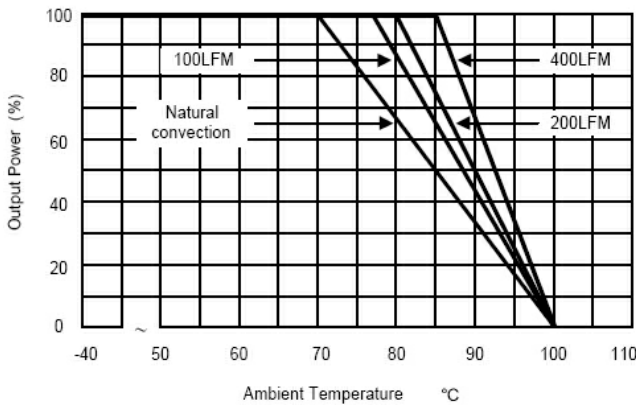

Efficiency vs Input Voltage (Single Output)
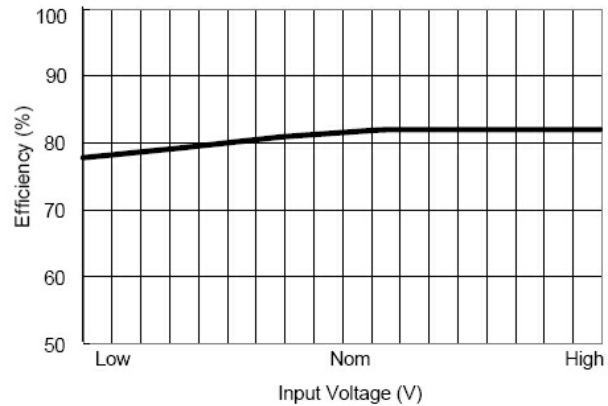
Efficiency vs Input Voltage (Dual Output)
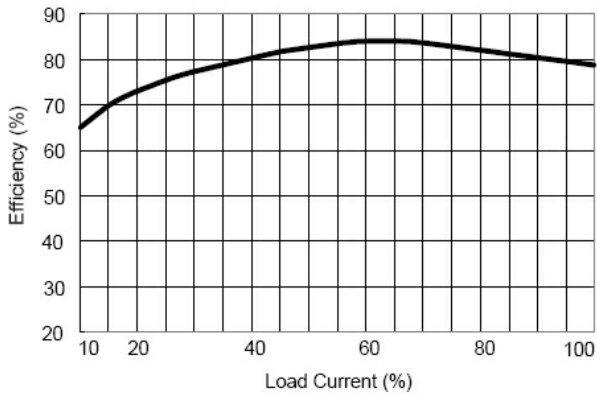
Efficiency vs Output Load (Single Output)


Efficiency vs Output Load (Dual Output)

Derating Curve

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Page 4 of 5

Input Fuse Selection Guide

12V Input Models	24V Input Models	48V Input Models
750mA Slow – Blow Type	350mA Slow – Blow Type	200mA Slow – Blow Type

Input Voltage Transient Rating
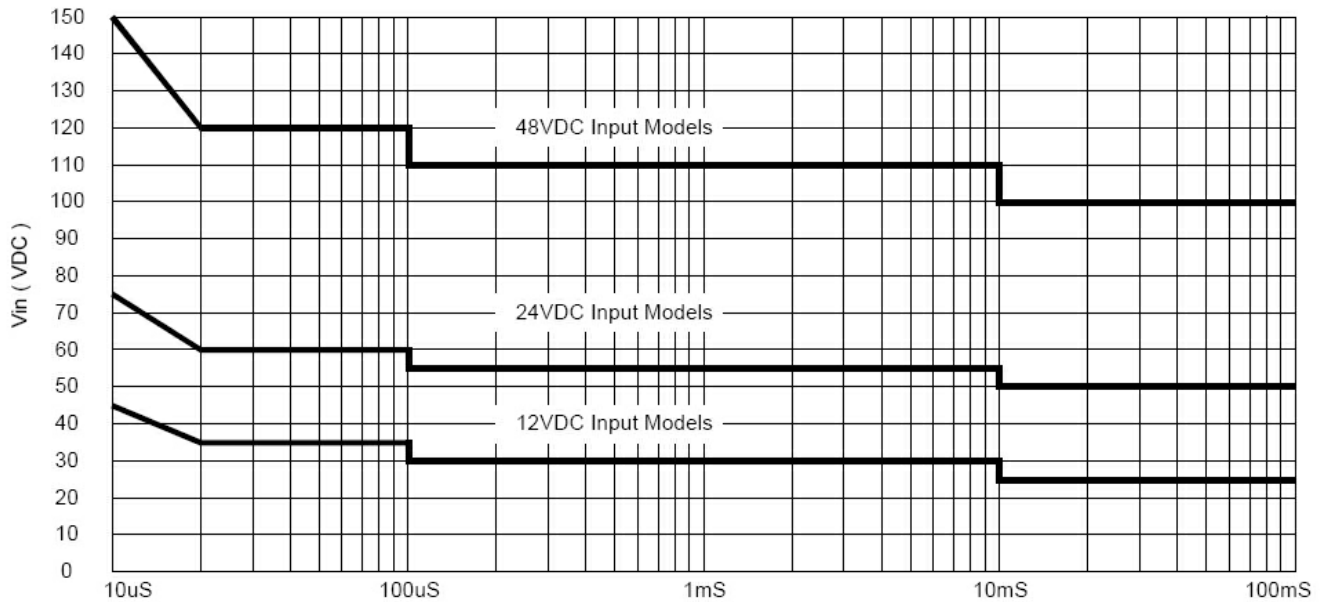
COMPANY INFORMATION

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: 2015 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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Page 5 of 5