

**FEATURES**

- High Efficiency up to 88%
- RoHS Directive Compliant
- Fixed Switching Frequency
- Six-Sided Continuous Shield
- Standard 2" x 2" x 0.4" Package
- Options: Negative Remote ON/OFF
- 4:1 Ultra Wide Input Voltage Range
- ISO9001 Certified Manufacturing Facilities
- UL60950-1, EN60950-1, and IEC60950-1 Licensed
- CE Mark Meets 2006/95/EC, 93/68/EEC, and 2004/108/EC

**APPLICATIONS**

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



**DESCRIPTION**

The DBW series of DC/DC converters offers 40 Watts of output power in a 2 x 2 x 0.4 inch package. The DBW series has a 4:1 ultra wide input range of 9-36VDC or 18-75VDC. This series also offers single and dual output models. Some features include 1600VDC isolation, positive or negative remote on/off, and six-sided shielding. All models are short circuit, over voltage, over load, and over temperature protected. Heatsinks are also available, please call factory for ordering details.

**SPECIFICATIONS: DBW Series**

*All specifications apply @ 25°C ambient unless otherwise noted*

**INPUT SPECIFICATIONS**

Input Voltage Range.....	24V nominal input .....	9 - 36VDC
	48V nominal input .....	18 - 75VDC
Input Filter.....	Pi Type	
Input Surge Voltage (100ms max) .....	24V input .....	50VDC
	48V input.....	100VDC
Input Reflected Ripple Current (nominal Vin and FL).....	20mA <sub>p-p</sub>	
Start Up Time (nominal Vin and constant resistive load)		
Power Up.....	20ms, max.	
Remote ON/OFF .....	20ms, max.	
Start-Up Voltage.....	24V nominal input .....	9VDC
	48V nominal input .....	18VDC
Shutdown Voltage.....	24V nominal input .....	8VDC
	48V nominal input .....	16VDC
Remote ON/OFF ( <i>See Note 10</i> )		
Positive Logic .....	DC-DC ON .....	Open or 3V < Vr < 12V
	DC-DC OFF .....	Short or 0V < Vr < 1.2V
Negative Logic.....	DC-DC ON .....	Short or 0V < Vr < 1.2V
	DC-DC OFF .....	Open or 3V < Vr < 12V
Input Current of Remote Control Pin (nominal Vin).....	-0.5mA~+0.5mA	
Remote Off State Input Current.....	24V nominal input.....	10mA
	48V nominal input.....	5mA

**OUTPUT SPECIFICATIONS**

Output Voltage .....	see table	
Voltage Accuracy (nom Vin and full load) .....	±1%	
Voltage Adjustability ( <i>See Note 7</i> ) .....	±10%	
Output Current .....	see table	
Output Power .....	40 watts, max.	
Line Regulation (LL to HL at FL).....	±0.2%	
Load Regulation ( <i>See Note 8</i> ) .....	Single Output.....	±0.5%
(min. load to full load)	Dual Output.....	±1%
Load Cross Regulation ( <i>See Note 9</i> ) .....	Dual Output.....	±5%
Minimum Load ( <i>See Note 6</i> ).....	see table	
Ripple/Noise ( <i>See Note 4</i> ).....	see table	
Transient Response Recovery Time.....	250µs	
(25% load step change)		

**PROTECTION SPECIFICATIONS**

Over Voltage Protection .....	3.3V Output.....	3.9V
(Zener diode clamp)	5V Output.....	6.2V
	12V Output.....	15V
	15V Output.....	18V
	±12V Output.....	±15V
	±15V Output.....	±18V
Over Load Protection (% of FL at nominal input).....	150%, max.	
Short Circuit Protection .....	Hiccup, automatic recovery	
Over Temperature Protection.....	110°C, typ.	

**GENERAL SPECIFICATIONS**

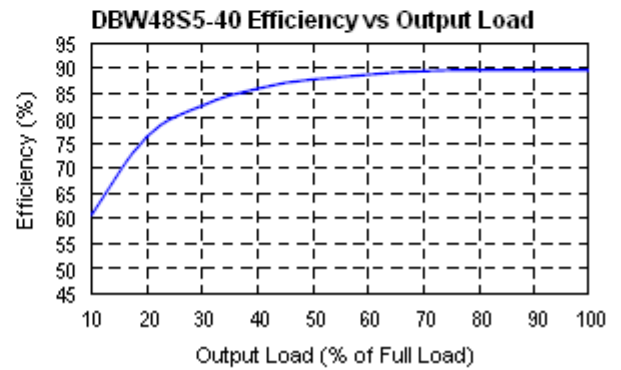
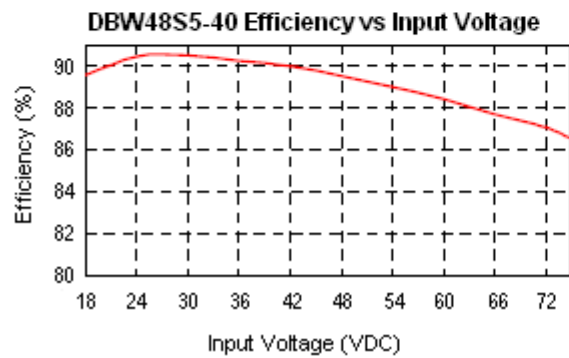
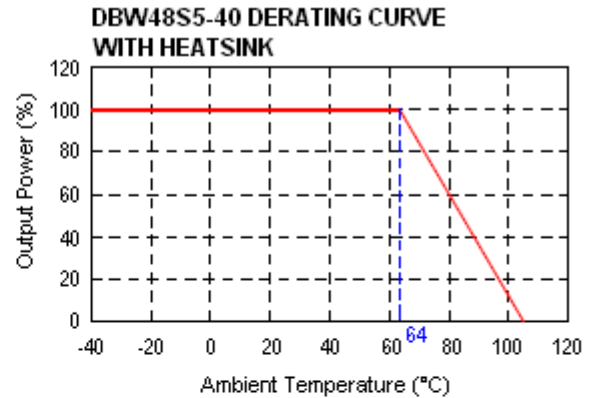
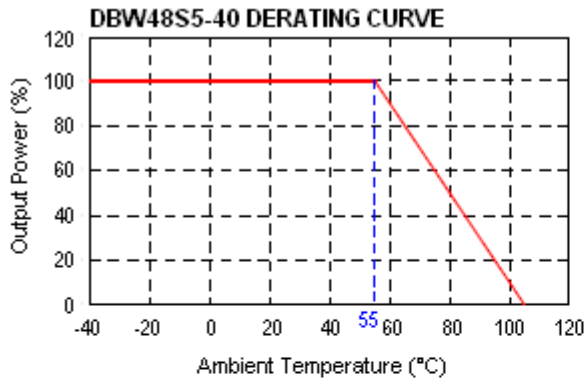
Efficiency .....	see table	
Switching Frequency.....	300KHz, typ.	
Isolation Voltage		
Input to Output .....	1600VDC, min.	
Input to Case.....	1600VDC, min.	
Output to Case.....	1600VDC, min.	
Case Grounding.....	connect case to -Vin with decoupling Y cap	
Isolation Resistance.....	10 <sup>9</sup> Ω, min.	
Isolation Capacitance.....	2500pF, max.	

**ENVIRONMENTAL SPECIFICATIONS**

Operating Ambient Temperature .....	-40°C to +50°C (without derating)	
	+50°C to +105°C (with derating)	
Storage Temperature .....	-55°C ~ +125°C	
Maximum Case Temperature .....	+105°C	
Relative Humidity .....	5% to 95% RH	
Temperature Coefficient.....	±0.02% / °C, max.	
Thermal Impedance ( <i>See Note 11</i> )		
Without Heat-Sink .....	9.2°C / Watt	
With Heat-Sink .....	7.6°C / Watt	
Thermal Shock.....	MIL-STD-810F	
Vibration.....	MIL-STD-810F	
MTBF ( <i>See Note 1</i> ).....	Bellcore TR-NWT-000332.....	1.105 x 10 <sup>6</sup> hrs
	MIL-STD-217F.....	1.511 x 10 <sup>5</sup> hrs

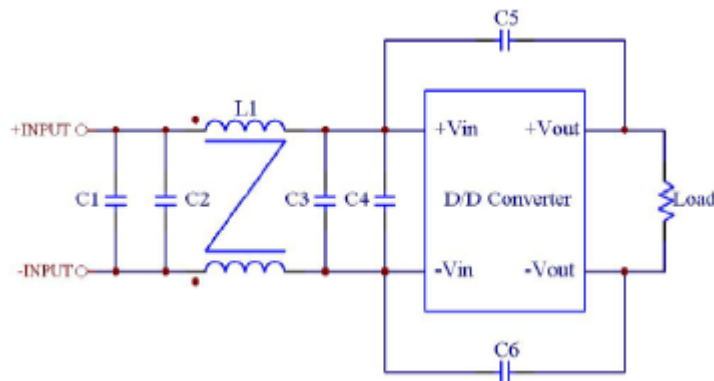


**DERATING CURVES & EFFICIENCY GRAPHS**



**Figure 1**

**Recommended Filter for EN55022 Class B Compliance**

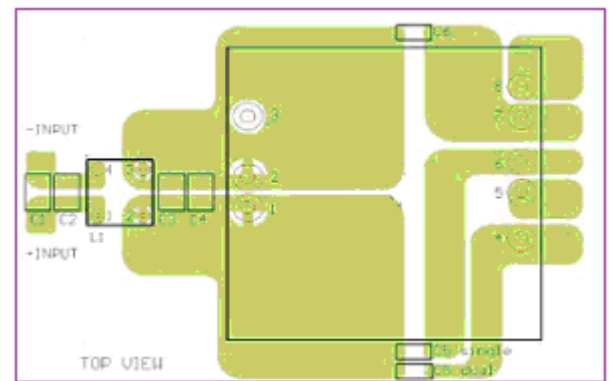


The components used in the above figure are as follows:

	C1	C2	C3	C4	C5 & C6	L1
DBW24Sxx-xx	4.7µF/50V 1812MLCC	N/A	4.7µF/50V 1812MLCC	N/A	1000pF/2KV MLCC	450µH Common Choke PMT-048
DBW48Sxx-xx	2.2µF/100V 1812 MLCC	2.2µF/100V 1812 MLCC	2.2µF/100V 1812 MLCC	2.2µF/100V 1812 MLCC	1000pF/2KV MLCC	830µH Common Choke PMT-053

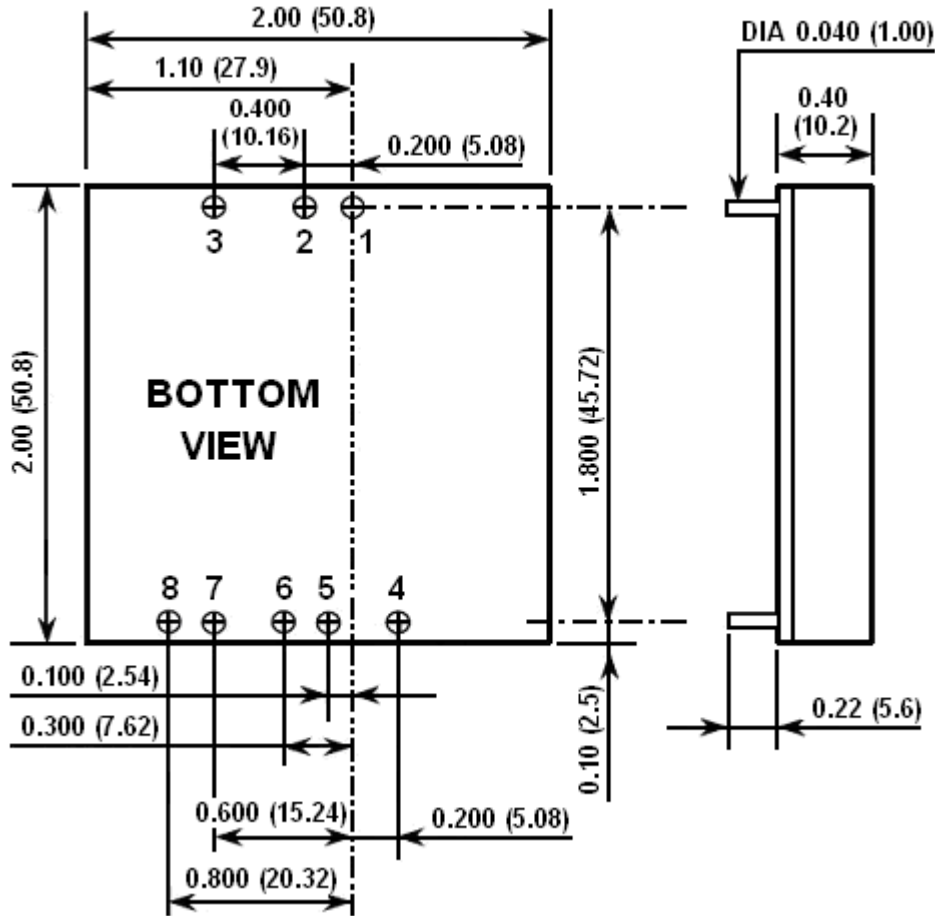
**Figure 2**

**Recommended EN55022 Class B Filter Circuit Layout**



**MECHANICAL DRAWING**

Unit: inches (mm)



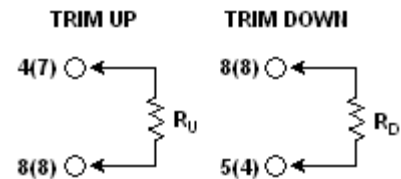
PIN CONNECTION		
PIN	SINGLE	DUAL
1	+Input	+Input
2	-Input	-Input
3	CTRL	CTRL
4	-Sense	+Output
5	+Sense	COM
6	+Output	COM
7	-Output	-Output
8	Trim	Trim

**Notes**

1. 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)
3. Pin dimension tolerance: ±0.004 (0.1)

**EXTERNAL OUTPUT TRIMMING**

Output can be externally trimmed by using the method shown below.  
( ) for Dual output trim





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**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 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.

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