



Features

- Industry-standard DIP package
- Industry-standard pinout
- 85°C case operation
- Wide-range input
- Input pi filter
- 500V isolation
- Short-circuit protection

Description

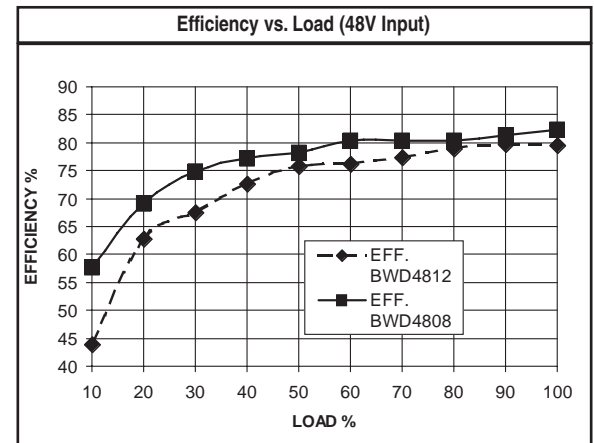
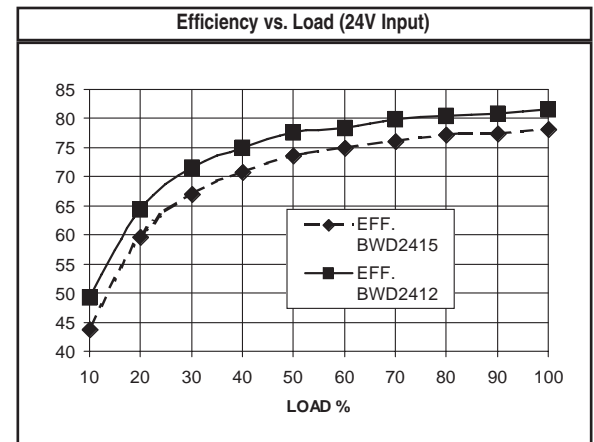
BWD dual-output dc-dc converters offer excellent regulation and isolation in an industry-standard DIP package. With several input voltage ranges, the BWD is ideal for industrial, telecom, and networking applications. The BWD features short-circuit protection, a low profile, and 500 VDC isolation. Please see the BWS Series for single-output applications.

Technical Specifications

Input	
Voltage Range	4.5 - 9 VDC
5 VDC Nominal	9 - 18 VDC
12 VDC Nominal	19 - 36 VDC
24 VDC Nominal	36 - 72 VDC
48 VDC Nominal	20% I_{in} Max.
Reflected Ripple	100% I_{in} Max.
Reverse Input Current	

Output	
Setpoint Accuracy	±1%
Line Regulation V_{in} Min. - V_{in} Max., I_{out} Rated	±1.5% V_{out}
Load Regulation I_{out} Min. - I_{out} Max., V_{in} Nom.	±2.5% V_{out}
Minimum Output Current	10% I_{out} Rated
Dynamic Regulation, 1/4 to Full Load Step	25% I_{out}
PK Deviation	4% V_{out}
Settling Time	500 μ s
Temperature Coefficient	0.02%/°C
Ripple and Noise, 20 MHz BW	150 mV
Short Circuit Protection ¹	Continuous Auto-restart
Current Limit	180%

General	
No Load Input Power	0.7 W
Switching Frequency	200 kHz
Isolation	
Input - Output	500 VDC
Input - Case	500 VDC
Output - Case	500 VDC
Isolation Resistance - Input to Output	10^9 Ohms
Isolation Capacitance - Input to Output	80 pF
Case Temperature	
Standard Operating Range	-25 to +85°C
Storage Range	-40 to +125°C
Humidity Max., Non-Condensing	95%
Vibration, 3 Axes, 5 Min Each	5 g, 10 - 55 Hz
Safety	UL, cUL, TUV
Weight (Approx.)	0.7 oz



Notes
¹ Continuous short circuit protection is provided. Long-term continuous operation in this mode is not recommended. Converter will auto-restart once fault has been removed. Specifications typically at 25°C, normal line, and full load, unless otherwise stated.
Soldering Conditions: I/O pins, 260°C, ten seconds; fully compatible with commercial wave-soldering equipment.
Safety: Agency approvals may vary from model to model. Please consult factory for specific model information.



Model Selection

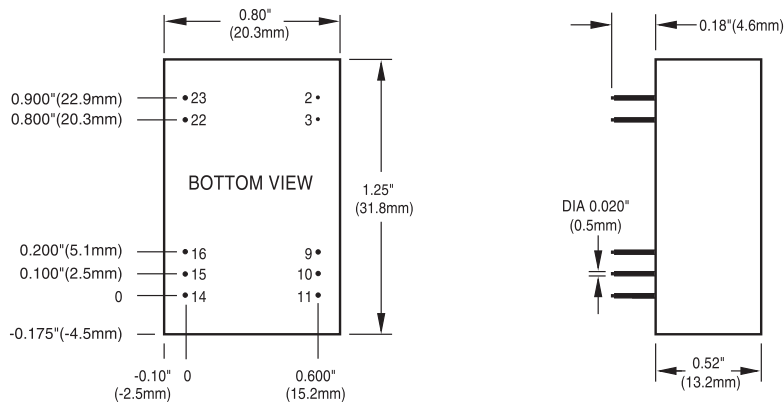
MODEL	INPUT VOLTAGE (VOLTS)	INPUT VOLTAGE RANGE (VOLTS)	MAXIMUM INPUT CURRENT (AMPS)*	OUTPUT VOLTAGE (VOLTS)	RATED OUTPUT CURRENT (AMPS)	RIPPLE & NOISE pk-pk (mV)	TYPICAL EFFICIENCY**
BWD512	5	4.5 - 9	0.92	±12	±0.125	150	79%
BWD515	5	4.5 - 9	0.93	±15	±0.100	150	73%
BWD1205	12	9 - 18	0.42	±5	±0.250	150	73%
BWD1212	12	9 - 18	0.46	±12	±0.125	150	79%
BWD1215	12	9 - 18	0.46	±15	±0.100	150	79%
BWD2405	24	18 - 36	0.46	±5	±0.250	150	79%
BWD2412	24	18 - 36	0.23	±12	±0.125	150	79%
BWD2415	24	18 - 36	0.23	±15	±0.100	150	78%
BWD4805	48	36 - 72	0.10	±5	±0.250	150	76%
BWD4812	48	36 - 72	0.11	±12	±0.125	150	79%
BWD4815	48	36 - 72	0.11	±15	±0.100	150	79%

NOTES: * Maximum input current at minimum input voltage, maximum rated output power.

** At nominal V_{in} , rated output.

Model numbers highlighted in yellow or shaded are not recommended for new designs.

Mechanical Drawing



Thermal Impedance	
Natural Convection	2.5 °C/W
100 LFM	2.1 °C/W
200 LFM	1.7 °C/W
300 LFM	1.3 °C/W

Note:
Thermal impedance data is dependent on many environmental factors. The exact thermal performance should be validated for specific application.

Pin	Function
1 & 24	No Pin
2 & 23	- V_{in} / + V_{in}
3 & 22	- V_{in} / + V_{in}
4 & 21	No Pin
5 & 20	No Pin
6 & 19	No Pin
7 & 18	No Pin
8 & 17	No Pin
9 & 16	Common
10 & 15	No Conn.
11 & 14	- V_{out} / + V_{out}
12 & 13	No Pin

Tolerances	
Inches:	(Millimeters)
.XX ± 0.020	.X ± 0.5
.XXX ± 0.010	.XX ± 0.25
Pin:	
± 0.002	± 0.05

(Tolerances as listed unless otherwise specified.)

NUCLEAR AND MEDICAL APPLICATIONS - Power-One products are not designed, intended for use in, or authorized for use as critical components in life support systems, equipment used in hazardous environments, or nuclear control systems without the express written consent of the respective divisional president of Power-One, Inc.

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