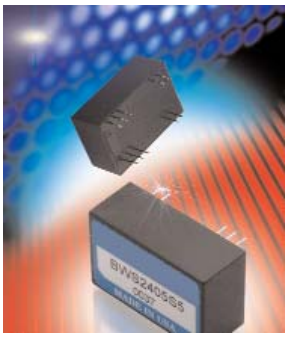
power-one™
Changing the Shape of Power



Features

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

Description

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

Technical Specifications

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

Output	
Setpoint Accuracy	±5%
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, Loadstep	25% I_{out}
Pk Deviation	1% V_{out}
Settling Time	500 ms
Temperature Coefficient	0.02%/°C
Ripple And Noise, 20 MHz BW	150 mV
Short Circuit Protection [1]	Continuous
Current Limit	180%

General	
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
No Load Input Power	0.70 W
Case Temperature	
Standard Operating Range	-25 to +85°C
Industrial Range (Add -I to p/n)	-40 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.)	0.6 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.

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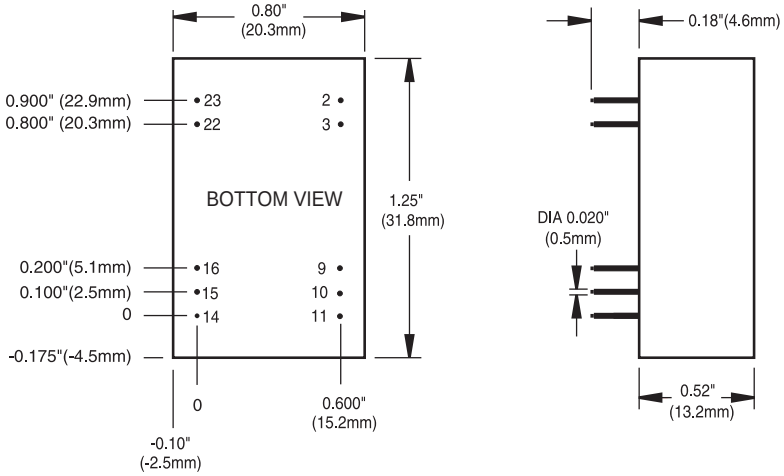
Model Selection

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**
BWS505	5	4.5 - 9	0.85	5	0.5	150	71%
BWS512	5	4.5 - 9	0.95	12	0.25	150	79%
BWS1205	12	9 - 18	0.45	5	0.5	150	70%
BWS1212	12	9 - 18	0.5	12	0.25	150	79%
BWS1215	12	9 - 18	0.5	15	0.2	150	79%
BWS4805	48	36 - 72	0.10	5	0.5	150	74%

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	23.6 °C/W
100 LFM	16.7 °C/W
200 LFM	13.1 °C/W
300 LFM	9.4 °C/W
400 LFM	8.5 °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	NC / $-V_{out}$
10 & 15	NC / NC
11 & 14	NC / $+V_{out}$
12 & 13	No Pin

Tolerances

Inches:	(Millimeters)
.XX ± 0.040	.X ± 1.0
.XXX ± 0.010	.XX ± 0.25

Pin:
± 0.002 ± 0.05

(Dimensions as listed unless otherwise specified.)

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