

## OWS SERIES - 25 WATT

### DESCRIPTION

OWS single output DC/DC converters provide up to 25 Watts of output power in an industry standard package and footprint. The OWS features excellent efficiency, six-sided shielding, and a fixed switching frequency. With 85°C case operation, the OWS is especially suited to telecom, networking, and industrial applications.



### FEATURES

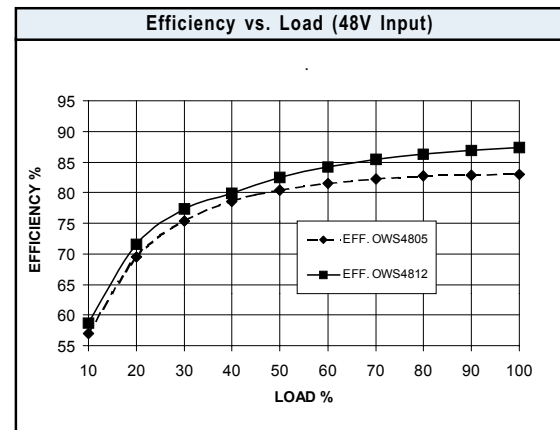
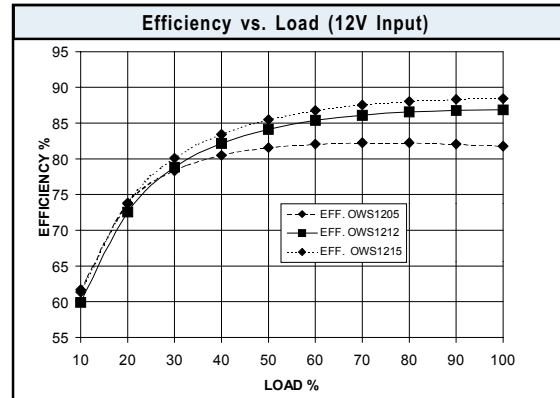
- Industry Standard Package
- 12V and 48V Input Versions
- 25W Output
- 85°C Case Operation
- Trim and Enable Pins
- Fixed Frequency
- 500V Isolation
- Wide Input Range

### TECHNICAL SPECIFICATIONS

Input	
Voltage Range	10 - 20 VDC
12 VDC Nominal	20 - 60 VDC
48 VDC Nominal	Shunt Diode
Input Reverse Voltage Protection	20% $I_{in}$ Max.
Input Ripple Current	100% $I_{in}$ Max.
Reverse Input Current	

Output	
Setpoint Accuracy	±1%
Line Regulation $V_{in}$ Min. - $V_{in}$ Max., $I_{out}$ Rated	±1% $V_{out}$
Load Regulation $I_{out}$ Min. - $I_{out}$ Max., $V_{in}$ Nom.	±1% $V_{out}$
Minimum Output Current	10%
Dynamic Regulation, Loadstep	25% $I_{out}$
Pk Deviation	1% $V_{out}$
Settling Time	500 $\mu$ s
Voltage Trim Range	±10%
Short Circuit / Overcurrent Protection	Continuous
Current Limit Threshold Range, % of $I_{out}$ Rated	110% - 130%

General	
Remote Shutdown	Positive
Remote Shutdown Reference	$V_{in}$ Negative
Switching Frequency	300 kHz
Isolation	
Input - Output	500 VDC
Temperature Coefficient	0.02%/°C
Case Temperature	
Operating Range	-25 To +85°C <sup>1</sup>
Storage Range	-40 To +125°C
Humidity Max., Non-Condensing	95%
Vibration, 3 Axes, 5 min. each	5 g, 10 - 55 Hz
MTBF† (Bellcore TR-NWT-000332)	1.8 X 10 <sup>6</sup> hrs
Safety	UL1950, CSA 22.2-950, EN60950
Weight (Approx.)	1.9 oz



Notes
<sup>1</sup> Industrial temperature range of -40 to +85°C available; add suffix -I to P/N.
† MTBF predictions may vary slightly from model to model.
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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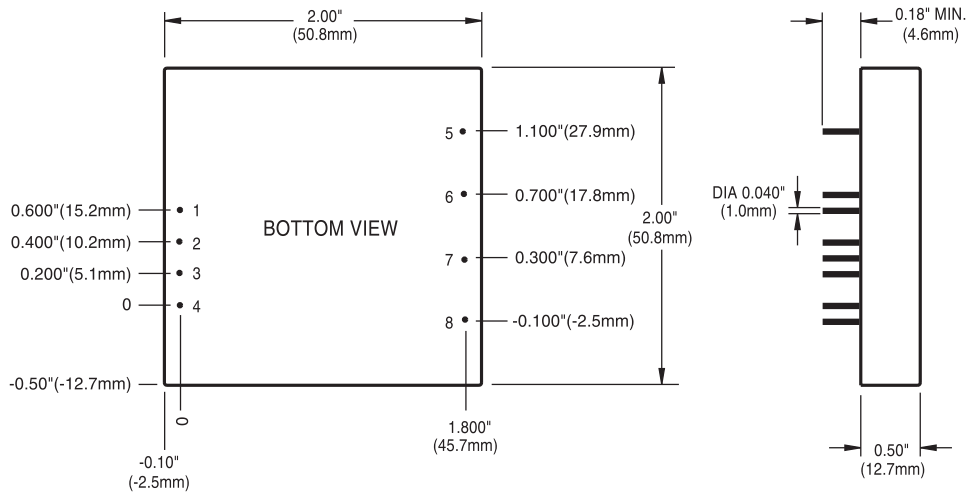
MODELS - (See the last page of Section for options.)

Vin (Volts)	Vin Range (Volts)	Iin Max* (Amps)	Vout (Volts)	Iout Rated (Amps)	Ripple & Noise Pk-Pk (mV)	Efficiency Typ. **	Model
12	10 - 20	3.50	5	5.00	50	80%	OWS1205
12	10 - 20	3.50	12	2.10	120	83%	OWS1212
12	10 - 20	3.50	15	1.65	150	84%	OWS1215
48	20 - 60	1.80	5	5.0	50	80%	OWS4805
48	20 - 60	1.80	12	2.10	120	86%	OWS4812

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

\*\* At nominal Vin, rated output.

### MECHANICAL DRAWING



Thermal Impedance	
Natural Convection	9.7 °C/W
100 LFM	7.3 °C/W
200 LFM	5.9 °C/W
300 LFM	4.8 °C/W
400 LFM	3.8 °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	+V <sub>in</sub>
2	-V <sub>in</sub>
3	No Conn
4	Enable
5	No Pin
6	+V <sub>out</sub>
7	-V <sub>out</sub>
8	Trim

Tolerances	
Inches:	(Millimeters)
.XX ± 0.040	.X ± 1.0
.XXX ± 0.010	.XX ± 0.25
Pin:	
± 0.002	± 0.05
Case:	
+ 0.04, - 0.00	+ 1.0, - 0.00

(Dimensions as listed unless otherwise specified.)



## OPTIONS

### Powering Communications and Technology

When ordering equipment options, use the following suffix information. Select the option(s) that you prefer and add them to the model number. Example ordering options are located below the options table.

OPTIONS	SUFFIX	APPLICABLE SERIES	REMARKS
Negative Logic	N	HAS, HBD, HBS, HES, HLS, LES, QBS, QES, QLS, TES, TQD	TTL "Low" Turns Module ON TTL "High" Turns Module OFF
Lucent Compatible Trim	T	HAS, HBD, HBS, HES, HLS, QBS, QES, QLS	
Terminal Strip	TS	XWS, XWD, XWT	
Trim	1	IAS, LES	
Enable	2	IAD, IAS, LES, SMS	
Trim and Enable	3	IAS, LES	
Current Share	4	SMS	
Headerless	Y	Encapsulated EWS, IWS, OWS	
<b>PIN LENGTH AND HEATSINK OPTIONS</b>			Standard Pin Length is 0.180" (4.6mm)
0.110" (2.8mm) Pin Length	8	All Units (Except SMS)	
0.150" (3.8mm) Pin Length	9	All Units (Except SMS)	
0.24" (6.1mm) Horizontal Heatsink	1H	All Units (Except DIP, HLS, HLD, QLS, SIP, SM TLD, and TKD Packages)	Includes Thermal Pad
0.24" (6.1mm) Vertical Heatsink	1V	All Units (Except DIP, HLS, HLD, QLS, SIP, SM TLD, and TKD Packages)	Includes Thermal Pad
0.45" (11.4mm) Horizontal Heatsink	2H	All Units (Except DIP, HLS, HLD, QLS, SIP, SM TLD, and TKD Packages)	Includes Thermal Pad
0.45" (11.4mm) Vertical Heatsink	2V	All Units (Except DIP, HLS, HLD, QLS, SIP, SM TLD, and TKD Packages)	Includes Thermal Pad
0.95" (24.1mm) Horizontal Heatsink	3H	All Units (Except DIP, HLS, HLD, QLS, SIP, SM TLD, and TKD Packages)	Includes Thermal Pad
0.95" (24.1mm) Vertical Heatsink	3V	All Units (Except DIP, HLS, HLD, QLS, SIP, SM TLD, and TKD Packages)	Includes Thermal Pad

#### Example Options:

HBS050ZG-ANT3V = HBS050ZG-A with negative logic, Lucent compatible trim, and 0.95" vertical heatsink.

LES015YJ-3N = LES015YJ with optional trim and enable, negative logic.

QBS066ZG-AT8 = QBS066ZG-A with Lucent compatible trim and 0.110" pin length.

**NUCLEAR AND MEDICAL APPLICATIONS** - Power-One products are not 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 President of Power-One, Inc.

**TECHNICAL REVISIONS** - The appearance of products, including safety agency certifications pictured on labels, may change depending on the date manufactured. Specifications are subject to change without notice.