



**Features**

- 300W standard full-brick
- Industry-standard footprint
- Open-frame packaging
- 100°C baseplate operation
- Planar magnetics
- Superior transient response
- 1500V isolation
- VWB booster modules available

**Description**

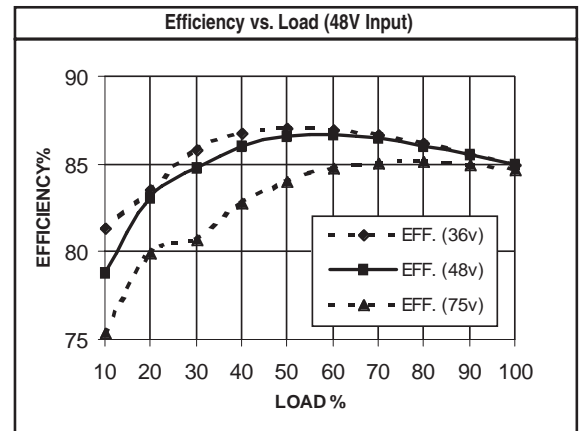
VWS DC/DC converters are industry-standard full-bricks. Featuring a fixed frequency design, the VWS offers excellent transient response and predictable EMI performance. The VWS can be combined with VWB booster modules to provide increased power. VWS converters use 100% surface-mount construction, along with planar magnetics, and are fully compatible with production board washing processes.

**Technical Specifications**

Input	
Voltage Range	
24 VDC Nominal	18 - 36 VDC
48 VDC Nominal	36 - 72 VDC
Input Reflected Ripple Current	50 mA Pk-Pk
Undervoltage Lockout - Turn on / Turn off	17-15 VDC /35-32 VDC

Output	
Setpoint Accuracy	±1%
Line Regulation $V_{in}$ min. - $V_{in}$ max., $I_{out}$ rated	0.2% $V_{out}$
Load Regulation $I_{out}$ min. - $I_{out}$ max., $V_{in}$ nom.	0.2% $V_{out}$
Remote Sense Headroom	0.5 VDC
Minimum Output Current	10 % $I_{out}$ Rated
Dynamic Regulation, Loadstep	25% $I_{out}$
Pk Deviation	4% $V_{out}$
Settling Time	500 ms
Voltage Trim Range	±10%
Current Limit Threshold Range, % of $I_{out}$ Rated	110 - 140%
OVP Trip Range	120 - 140% $V_{out}$ Nom.
OVP Type	Self Recovering
Short Circuit/Overcurrent Protection	Shutdown/Hiccup

General	
Turn-On Time	10 ms
Remote Shutdown	Positive Logic
Remote Shutdown Reference	$V_{in}$ Negative
Switching Frequency	500 kHz
Isolation	
Input - Output	1500 VDC
Input - Case	1050 VDC
Output - Case	500 VDC
Temperature Coefficient	0.03 %/°C
Case Temperature	
Operating Range	-40 To +100°C
Storage Range	-40 To +125°C
Thermal Shutdown Range	105 - 115°C
Vibration, 3 Axes, 5 Min Each	5 g, 10 - 55 Hz
MTBF† (Bellcore TR-NWT-000332)	Consult Factory
Safety	UL, cUL, TUV
Weight (Approx.)	6.0 oz



Notes
† 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.

### Model Selection

MODEL	INPUT VOLTAGE (VOLTS)	INPUT VOLTAGE RANGE (VOLTS)	MAXIMUM INPUT CURRENT (AMPS)*	OUTPUT VOLTAGE (VOLTS)	RATED OUTPUT CURRENT (AMPS)	RIPPLE & NOISE $\mu$ k-pk (mV)	TYPICAL EFFICIENCY**
VWS250YH-A	24	18-36	21.0	12	20.8	120	81%
VWS250YJ-A	24	18-36	21.0	15	16.7	150	81%
VWS250YK-A	24	18-36	21.0	24	10.4	200	82%
VWS250Y28-A	24	18-36	21.0	28	8.9	200	82%
VWS250YL-A	24	18-36	21.0	48	5.2	200	84%
VWS300ZH-A	48	36-72	10.5	12	25.0	120	85%
VWS300ZJ-A	48	36-72	10.5	15	20.0	150	84%
VWS300ZK-A	48	36-72	10.5	24	12.5	200	85%
VWS300Z28-A	48	36-72	10.5	28	10.7	200	86%

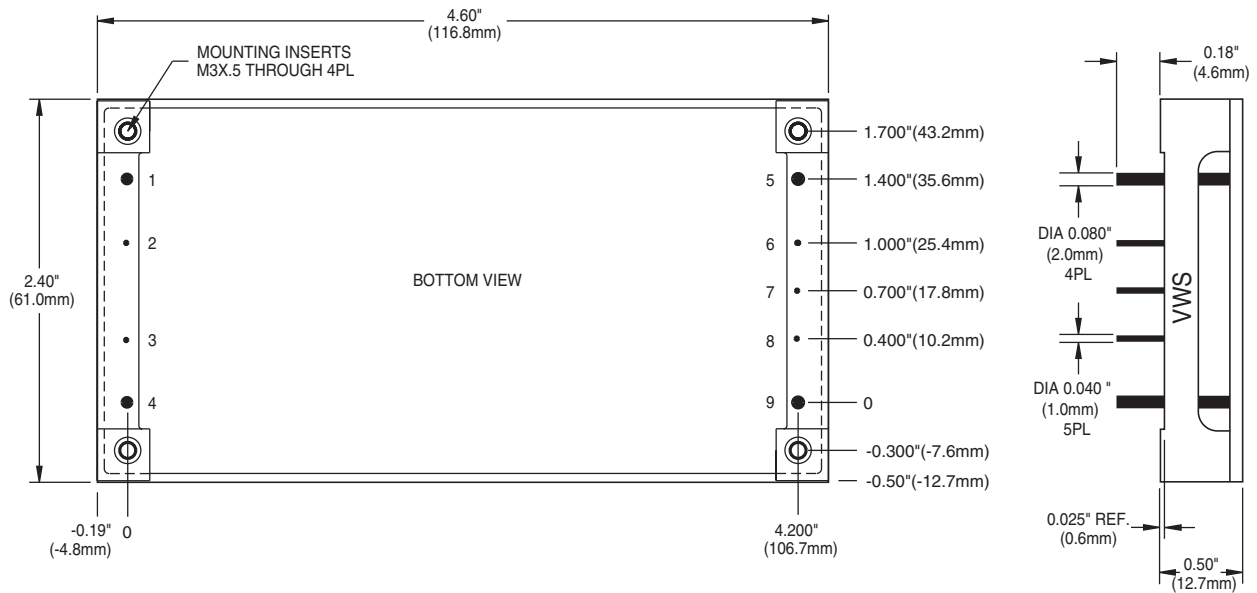
NOTES: ◆ Advanced product release - consult factory.

\* 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	5.4 °C/W
100 LFM	3.8 °C/W
200 LFM	2.5 °C/W
300 LFM	1.7 °C/W
400 LFM	1.6 °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	- $V_{in}$
2	Gate out
3	Gate in
4	+ $V_{in}$
5	- $V_{out}$
6	-Sense
7	Trim
8	+Sense
9	+ $V_{out}$

Tolerances	
Inches:	(Millimeters)
.XX ± 0.040	.X ± 0.5
.XXX ± 0.010	.XX ± 1.0
Pin:	
± 0.002	± 0.05
(Dimensions as listed unless otherwise specified.)	