



Features

- RoHS lead-solder exemption compliant
- Industry-standard package
- 24 and 48 V input versions
- 25 W output power
- 100 °C baseplate operation
- Trim and enable pins
- Fixed frequency
- 1500 V isolation
- 6-sided shielding

Description

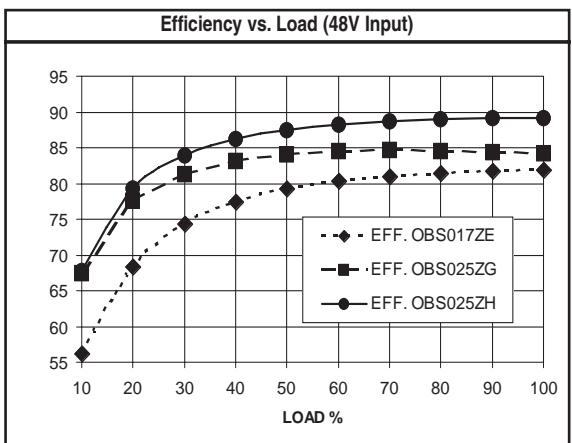
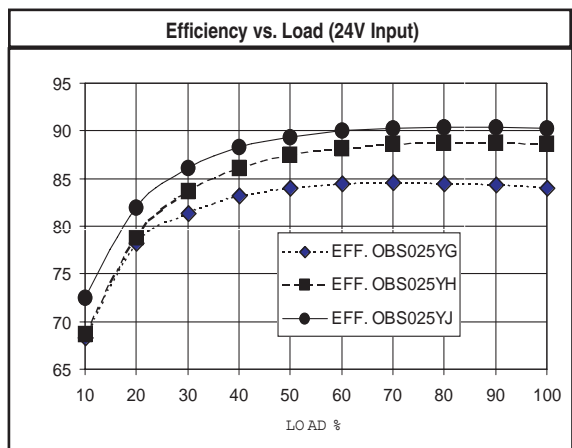
OBS single output dc-dc converters provide up to 25 watts of output power in an industry-standard package and footprint. The OBS units feature excellent efficiency, six-sided shielding, and fixed switching frequency. With 100 °C case operation, the OBS converters are especially suited to telecom, networking, and industrial applications. These units are 100% surface-mount construction and fully-compatible with production board washing processes.

Technical Specifications

Input	
Voltage Range	18 - 36 VDC
24 VDC Nominal	34 - 75 VDC
48 VDC Nominal	
Reflected Ripple	25 mA
Input Reverse Voltage Protection	Shunt Diode

Output	
Setpoint Accuracy	±1%
Line Regulation $V_{in} \text{ Min.} - V_{in} \text{ Max.}, I_{out} \text{ Rated}$	0.2% V_{out}
Load Regulation $I_{out} \text{ Min.} - I_{out} \text{ Max.}, V_{in} \text{ Nom.}$	0.5% V_{out}
Minimum Output Current	10% $I_{out} \text{ Rated}$
Dynamic Regulation, Loadstep	25% I_{out}
Pk Deviation	4% V_{out}
Settling Time	500 μs
Voltage Trim Range	±10% $I_{out} \text{ Rated}$
Short Circuit / Overcurrent Protection	Hiccup
Current Limit Threshold Range, % of $I_{out} \text{ Rated}$	110 - 140%
OVP Trip Range	115 - 140% $V_{out} \text{ Nom.}$
OVP	Hiccup

General	
Turn-On Time: 24 & 48V _{in}	10 ms
Remote Shutdown	Positive
Remote Shutdown Reference	V_{in} Negative
Switching Frequency	400 kHz
Isolation	
Input - Output	1500 VDC
Input - Case (24 V _{in} units)	500 VDC
Output - Case (48 V _{in} units)	500 VDC
Temperature Coefficient	0.03%/°C
Case Temperature	
Operating Range	-40 to +100 °C
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 ⁶ hrs
Safety	UL, cUL, TUV
Weight (Approx.)	1.9 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.

Units are water-washable and fully compatible with commercial spray or immersion post wave-solder washing equipment.

Model Selection

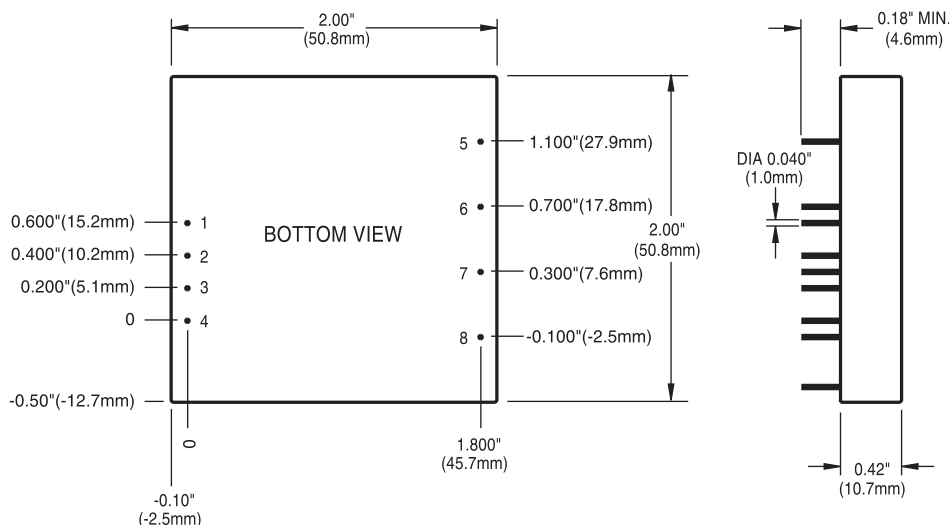
MODEL	INPUT VOLTAGE (VOLTS)	INPUT VOLTAGE RANGE (VOLTS)	MAXIMUM INPUT CURRENT (AMPS)*	OUTPUT VOLTAGE (VOLTS)	RATED OUTPUT CURRENT (AMPS)	RIPPLE & NOISE pk-pk (mV)	TYPICAL EFFICIENCY**
OBS025YH	24	18-36	1.90	12	2.1	120	88%
OBS025YJ	24	18-36	1.90	15	1.7	150	87%
OBS017ZE	48	34-75	0.60	3.3	5.0	75	81%
OBS025ZG	48	34-75	0.94	5	5.0	75	83%
OBS025ZH	48	34-75	0.92	12	2.1	120	88%
OBS025ZJ	48	34-75	0.92	15	1.7	150	88%

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	10.3 °C/W
100 LFM	7.7 °C/W
200 LFM	6.3 °C/W
300 LFM	5.1 °C/W
400 LFM	4.0 °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	-V _{in}
3	No Conn.
4	Enable
5	No Pin
6	+V _{out}
7	-V _{out}
8	Trim

Tolerances	
Inches:	(Millimeters)
.XX ± 0.020	.X ± 0.5
.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.)

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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