

OBD SERIES - DUAL OUTPUT, 25 WATT

DESCRIPTION

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



FEATURES

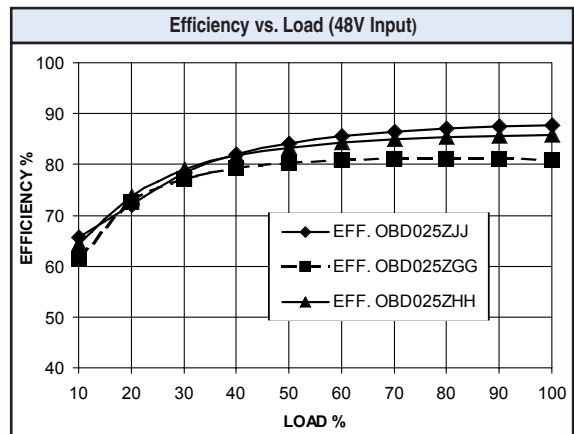
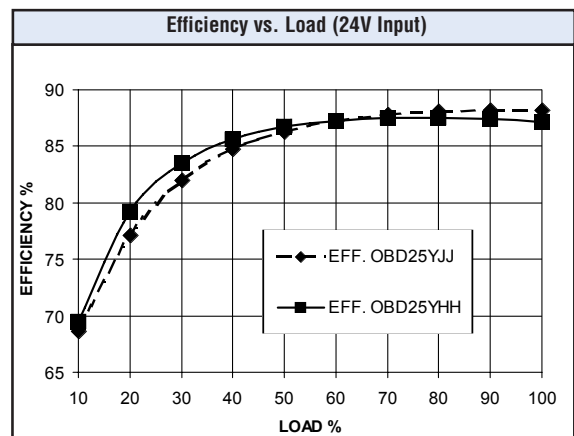
- Industry Standard Package
- 48V Input
- Fixed-Frequency Design
- 100°C Case Operation
- Trim and Enable Pins
- 6-Sided Shielding
- 1500V Isolation

TECHNICAL SPECIFICATIONS

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

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.	0.5% V_{out}
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%
Short Circuit / Overcurrent Protection	Hiccup
Current Limit Threshold Range, % of I_{out} Rated	110 - 140%
OVP Trip Range	115 - 140% V_{out} Nom.
OVP and UVP Type	Second Control Loop

General	
Turn-On Time: 24 & 48V Input	10 ms
Remote Shutdown	Positive
Remote Shutdown Reference	V_{in} Negative
Switching Frequency	400 kHz
Isolation	
Input - Output	1500 VDC
Input - Case (12 V_{in} and 24 V_{in} units)	1050 VDC
Output - Case (48 V_{in} units)	500 VDC
Temperature Coefficient	0.03%/°C
Case Temperature	
Operating Range (12V Input Max. Temp +85°C)	-40 to +100°C
Storage Range	-40 to +125°C
Vibration, 3 Axes, 5 Min. Each	5 g, 10 - 55 Hz
MTBF† (Bellcore TR-NWT-000332)	1.9 x 10 ⁶ hrs
Safety	UL, cUL, TUV
Weight (Approx.)	1.4 oz



Notes
† MTBF predictions may vary slightly from model to model.
†† Industrial temp range available.
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.

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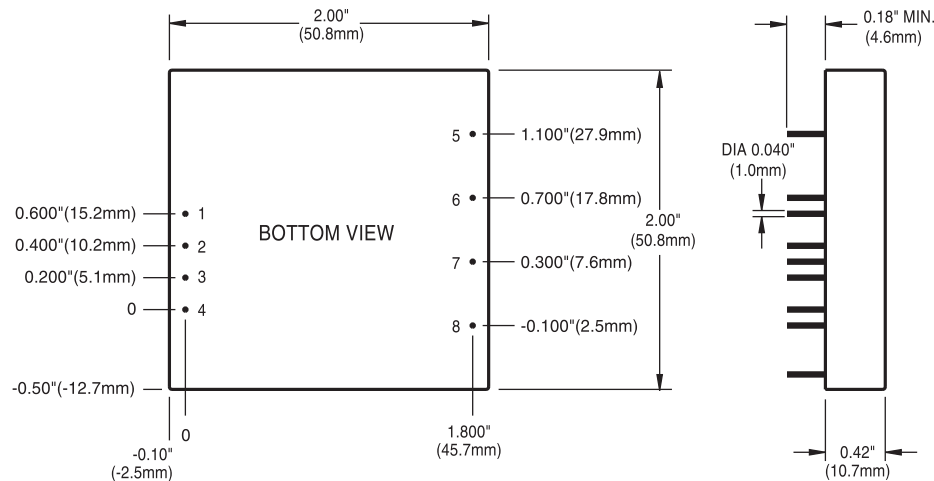
MODELS - (See the last page of section for options.)

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**
OBD025YHH	24	18 - 36	1.7	±12	±1.0	120	86%
OBD025YJJ	24	18 - 36	1.7	±15	±0.85	150	88%
OBD025ZGG	48	34 - 75	0.93	±5	±2.5	75	80%
OBD025ZHH	48	34 - 75	0.91	±12	±1.0	120	86%
OBD025ZJJ	48	34 - 75	0.91	±15	±0.85	150	88%

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

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

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	4.1 °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	+V _{out}
6	Common
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, - 0.0
(Tolerances as listed unless otherwise specified.)	

OPTIONS

This page is offered as a reference. Consult factory for actual availability of options. When ordering equipment options, use the following suffix information. Select preferred option(s) and add the suffix to the model number. Ordering option examples are located below the options table.

OPTION	SUFFIX	APPLICABLE SERIES	REMARKS
Negative Logic	N	HAS, HBD, HBS, HES, HLS, HLD, 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	
Trim	1	IAS, LES	
Enable	2	IAD, IAS, LES, SMS	
Trim and Enable	3	IAS, LES	
Pin Length and Heatsink Options			Standard Pin Length is 0.180" (4.6mm)
0.110" (2.8mm) Pin Length	8	All Leaded Models	
0.150" (3.8mm) Pin Length	9	All Leaded Models	
0.24" (6.1mm) Horizontal Heatsink	1H	All 1/4-Bricks, 1/2-Bricks, 3/4-Bricks, Full-Bricks (Except HLS, HLD, QLS, TLD, and TKD Packages)	Includes Thermal Pad
0.24" (6.1mm) Vertical Heatsink	1V	All 1/4-Bricks, 1/2-Bricks, 3/4-Bricks, Full-Bricks (Except HLS, HLD, QLS, TLD, and TKD Packages)	Includes Thermal Pad
0.45" (11.4mm) Horizontal Heatsink	2H	All 1/4-Bricks, 1/2-Bricks, 3/4-Bricks, Full-Bricks (Except HLS, HLD, QLS, TLD, and TKD Packages)	Includes Thermal Pad
0.45" (11.4mm) Vertical Heatsink	2V	All 1/4-Bricks, 1/2-Bricks, 3/4-Bricks, Full-Bricks (Except HLS, HLD, QLS, TLD, and TKD Packages)	Includes Thermal Pad
0.95" (24.1mm) Horizontal Heatsink	3H	All 1/4-Bricks, 1/2-Bricks, 3/4-Bricks, Full-Bricks (Except HLS, HLD, QLS, TLD, and TKD Packages)	Includes Thermal Pad
0.95" (24.1mm) Vertical Heatsink	3V	All 1/4-Bricks, 1/2-Bricks, 3/4-Bricks, Full-Bricks (Except HLS, HLD, QLS, 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 respective divisional 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.