Powering Communications and Technology

OBS SERIES
25 WATT

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.

FEATURES

- Industry standard package
- 24 and 48V input versions
- 25W output power
- 100°C baseplate operation
- Trim And Enable Pins
- Fixed Frequency
- 1500V Isolation
- 6-Sided Shielding

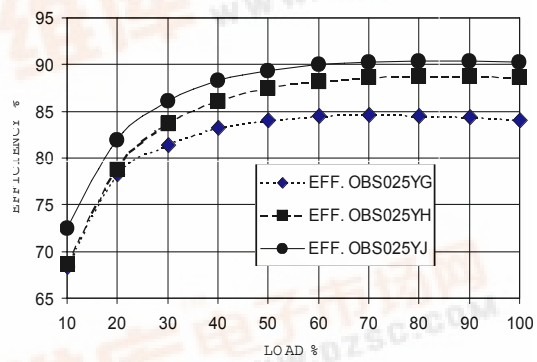
TECHNICAL SPECIFICATIONS

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

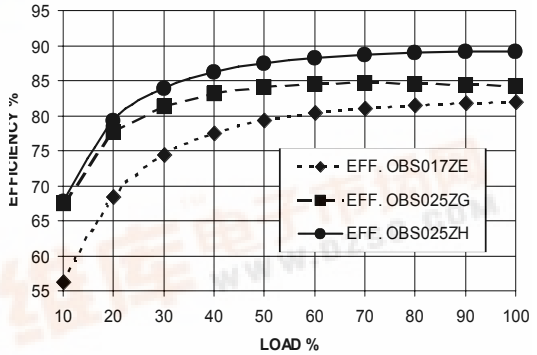
Output	
Setpoint Accuracy	±1%
Line Regulation V_{in} Min - V_{in} Max., I_{out} Rated	0.2% V_{out}
Load Regulation I_{out} Min. - I_{out} Max., V_{in} Nom.	0.5% V_{out}
Minimum Output Current	10 % I_{out} Rated
Dynamic Regulation, Loadstep	25% I_{out}
Pk Deviation	4% V_{out}
Settling Time	500 µs
Voltage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

Efficiency vs. Load (24V Input)



Efficiency vs. Load (48V Input)



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.

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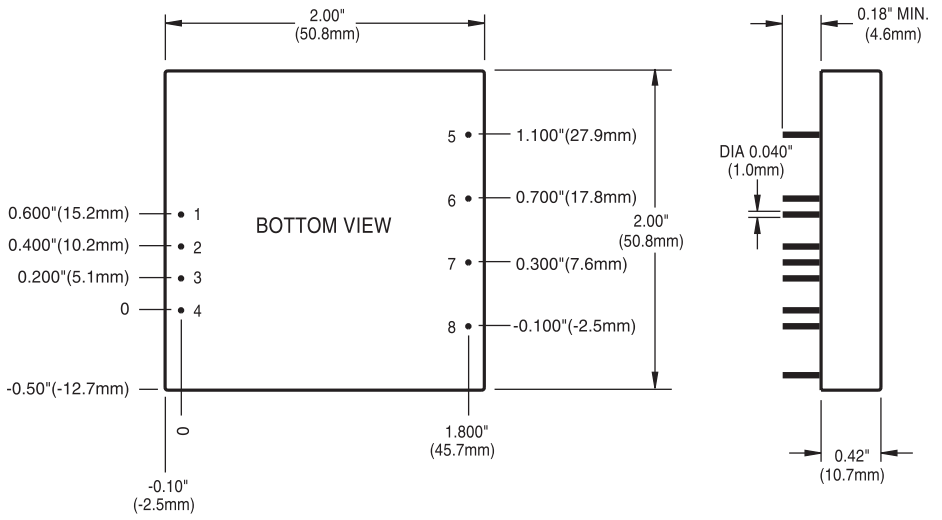
MODELS - (See the last page of Section for options.)

Selection Chart

Model	Vin (Volts)	Vin Range (Volts)	Iin Max.* (Amps)	Vout (Volts)	Iout Rated (Amps)	Ripple & Noise Pk-Pk (mV)	Efficiency Typ. **
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%

* Maximum input current at minimum input voltage, maximum rated output power.
** At nominal Vin, 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	4.0 °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.)

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	
PIN LENGTH AND HEATSINK OPTIONS			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.