



# ETA-USA

HIGH QUALITY SWITCHING POWER SUPPLIES

AC/DC SWITCHING POWER SUPPLY  
DUAL CHANNEL OUTPUT  
40 WATTS  
UNIVERSAL INPUT

## OBH40D SERIES

### General Description



### Features

1. Regulated Output
2. Fully Encapsulated
3. Low ripple and noise
4. PCB Mountable
5. Over power, short circuit, over voltage protection, over temperature protection
6. Isolation Class II
7. Small size

### Options

Screw Terminal (add suffix "-S")

### Application

Broad needs

### Input

<b>Input Voltage Range:</b>	AC90~264V (or 120~375VDC)
<b>Input current:</b>	860mA max (115VAC), 460mA max (230VAC)
<b>Frequency Range:</b>	47~440 Hz
<b>Inrush Current:</b> *1, *4	30A (max.) at AC115VAC 50A (max.) 230VAC





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Output Characteristic	Unit	Models									
		OBH40D-5		OBH40D-12		OBH40D-15		OBH40D-0512		OBH40D-0524	
Output Voltage	V <sub>dc</sub>	5	-5	12	-12	15	-15	5	12	5	24
Output Current	mA	4000	4000	1666	1666	1333	1333	5000	1250	5000	625
Ripple & Noise(max)	mV <sub>pp</sub>	1% of V <sub>o</sub>									
Voltage Accuracy		±2%						±3%	±5%	±3%	±5%
Capacitive Load (max)	uF	12000	-12000	4400	-4400	1000	-1000	10000	470	10000	400
Hold up time	mS	10 minimum									
Switching Frequency	kHz	132									
Minimum Load	%	10%					25%				
<b>Regulation</b>											
a. Line Regulation [max]		±0.5%						±0.5%	±5%	±0.5%	±5%
b. Load Regulation (symmetric load)	mV	±1% (symmetric load)						±2%	±6%	±2%	±6%
c. Cross-Regulation		1%						±1%	±7%	±1%	±7%
d. Temperature Coefficient	/°C	±0.01% /°C									
<b>Efficiency</b>	<b>*1</b>	%	<b>81</b>	<b>83</b>	<b>83</b>	<b>82</b>	<b>82</b>	<b>82</b>	<b>82</b>	<b>82</b>	<b>82</b>

Conditions:

- \*1 Rated input and Rated output
- \*2 at Output current quick change 25% to 75%
- \*3 At 100% load (convection cooling)
- \*4 Cold start at 25 °C Ambient temp.



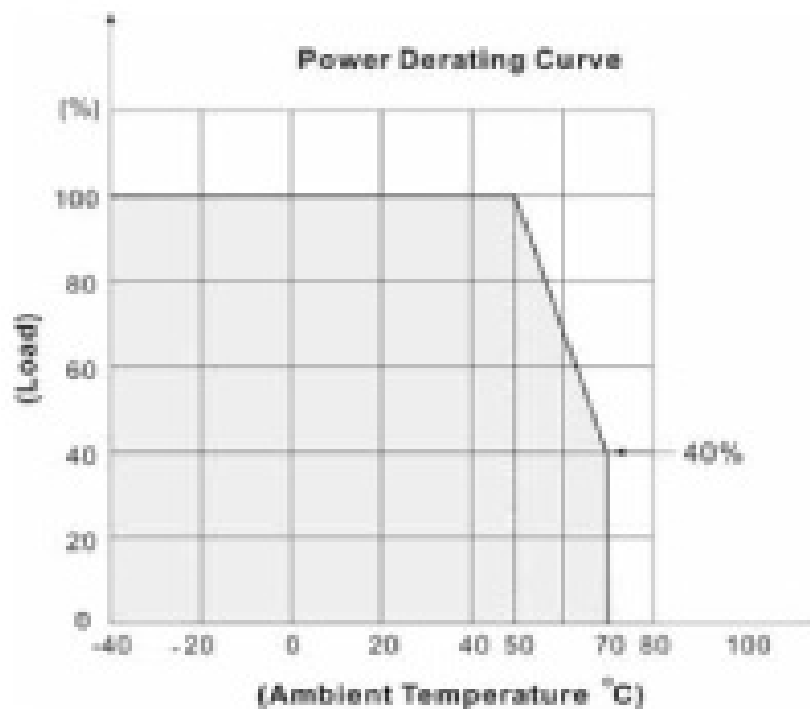


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Environmental Specification	
Operating Temperature*3	-40 to +70 °C with derating, case temperature 95°C max
Storage Temperature	-40 to +100 °C
Humidity	95% RH max
Isolation Voltage	3000V Input-Output
Leakage Current	750μA max
Cooling	Convection
MTBF	200,000 hours to 400,000 hours at 25°C
Enclosure Material	Plastic Resin with Fiberglass (flammability meeting UL 94V-0)
Environmental Agencies	
Line Conducted Noise [EMI]	Built to meet EN55022-B
Noise immunity	EN 55024
Safety	CE, cUL, UL
Function/Protection	
Over Power Protection	Above 105% rated output power
Over voltage Protection	Zener diode clamp
Short circuit Protection	Hiccup mode, indefinite (automatic recovery)
Over Temperature Protection	up to 100°C
Mechanical	
Dimension [mm]	63.5W × 89.0L × 25.0H ±0.5
Weight [g] (typical)	280

## Derating Curves

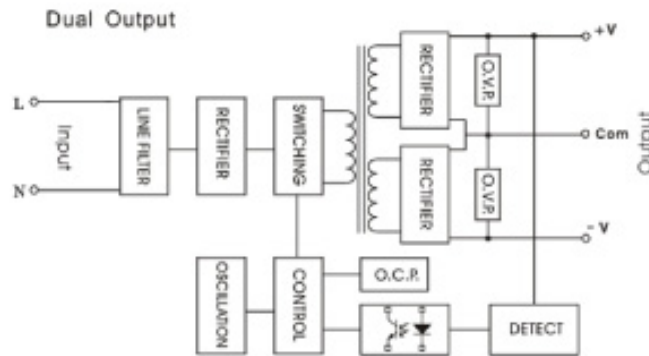




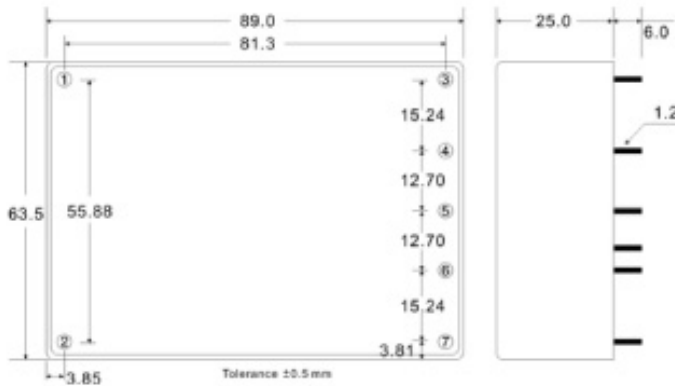
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## Block Diagram



## Mechanical Dimensions



PIN#	SINGLE	Dual	5S/12S 5S/24S	Triple
1	AC IN (L)	AC IN (L)	AC IN (L)	AC IN (L)
2	AC IN (N)	AC IN (N)	AC IN (N)	AC IN (N)
3	+DC OUT	+DC OUT	+OUT2	+DC OUT
4	NO PIN	NO PIN	+OUT1	+5V
5	-DC OUT	COMMON	+OUT2 RTN	COMMON
6	NO PIN	NO PIN	+OUT1 RTN	+5 RTN
7	NOCONNECT	-DC OUT	NO PIN	-DC OUT



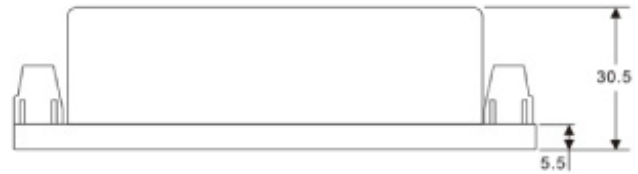
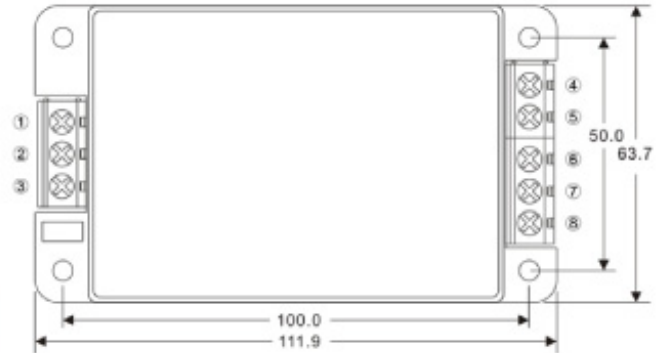


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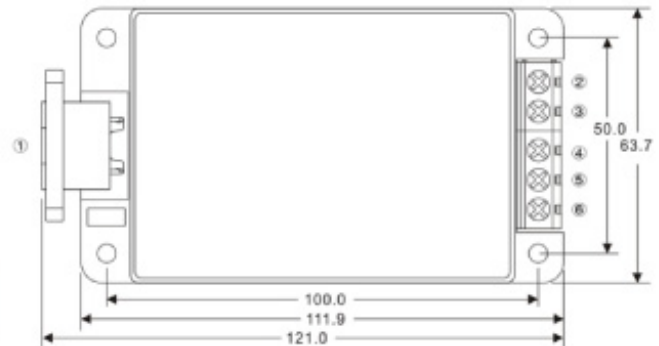
### "-S1"

PIN#	Single	Dual	5S/12S 5S/24S	Triple
1	NOCONNECT	NOCONNECT	NOCONNECT	NOCONNECT
2	AC IN (L)	AC IN (L)	AC IN (L)	AC IN (L)
3	AC IN (N)	AC IN (N)	AC IN (N)	AC IN (N)
4	+DC OUT	+DC OUT	+OUT2	+DC OUT
5	NOCONNECT	NOCONNECT	+OUT1	+5V OUT
6	-DC OUT	COMMON	+OUT2 RTN	COMMON
7	NOCONNECT	NOCONNECT	+OUT1 RTN	+5V RTN
8	NOCONNECT	-DC OUT	NOCONNECT	-DC OUT



### "-S3"

PIN#	Single	Dual	5S/12S 5S/24S	Triple
1	AC IN	AC IN	AC IN	AC IN
2	+DC OUT	+DC OUT	+OUT2	+DC OUT
3	NOCONNECT	NOCONNECT	+OUT1	+5V OUT
4	-DC OUT	COMMON	+OUT2 RTN	COMMON
5	NOCONNECT	NOCONNECT	+OUT1 RTN	+5V RTN
6	NOCONNECT	-DC OUT	NOCONNECT	-DC OUT



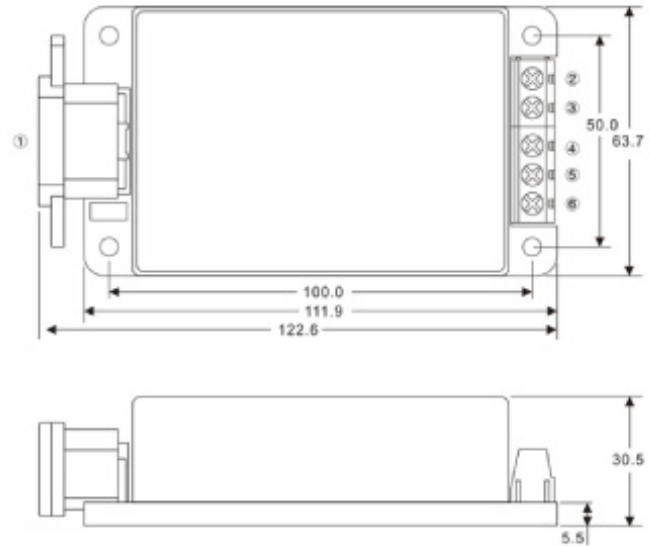


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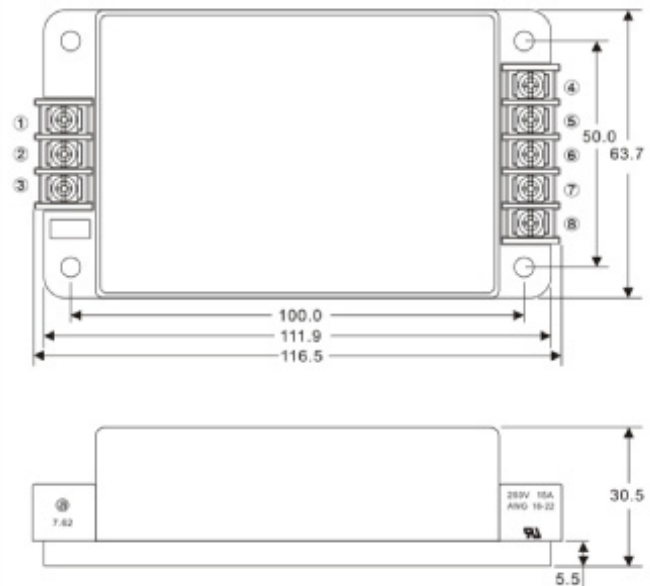
### "-S4"

PIN#	Single	Dual	5S/12S 5S/24S	Triple
1	AC IN	AC IN	AC IN	AC IN
2	+DC OUT	+DC OUT	+OUT2	+DC OUT
3	NOCONNECT	NOCONNECT	+OUT1	+5V OUT
4	-DC OUT	COMMON	+OUT2 RTN	COMMON
5	NOCONNECT	NOCONNECT	+OUT1 RTN	+5V RTN
6	NOCONNECT	-DC OUT	NOCONNECT	-DC OUT



### "-S2"

PIN#	Single	Dual	5S/12S 5S/24S	Triple
1	NOCONNECT	NOCONNECT	NOCONNECT	NOCONNECT
2	AC IN (L)	AC IN (L)	AC IN (L)	AC IN (L)
3	AC IN (N)	AC IN (N)	AC IN (N)	AC IN (N)
4	+DC OUT	+DC OUT	+OUT2	+DC OUT
5	NOCONNECT	NOCONNECT	+OUT1	+5V OUT
6	-DC OUT	COMMON	+OUT2 RTN	COMMON
7	NOCONNECT	NOCONNECT	+OUT1 RTN	+5V RTN
8	NOCONNECT	-DC OUT	NOCONNECT	-DC OUT



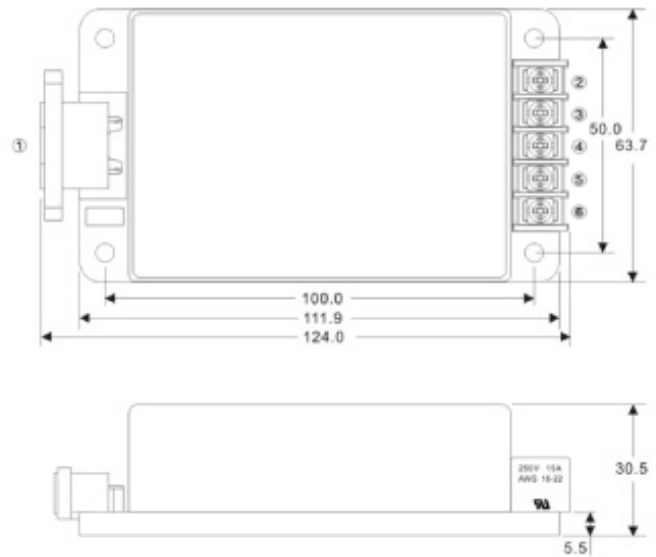


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"-S5"

PIN#	Single	Dual	5S/12S 5S/24S	Triple
1	AC IN	AC IN	AC IN	AC IN
2	+DC OUT	+DC OUT	+OUT2	+DC OUT
3	NOCONNECT	NOCONNECT	+OUT1	+5V OUT
4	-DC OUT	COMMON	+OUT2 RTN	COMMON
5	NOCONNECT	NOCONNECT	+OUT1 RTN	+5V RTN
6	NOCONNECT	-DC OUT	NOCONNECT	-DC OUT



"-S6"

PIN#	Single	Dual	5S/12S 5S/24S	Triple
1	AC IN	AC IN	AC IN	AC IN
2	+DC OUT	+DC OUT	+OUT2	+DC OUT
3	NOCONNECT	NOCONNECT	+OUT1	+5V OUT
4	-DC OUT	COMMON	+OUT2 RTN	COMMON
5	NOCONNECT	NOCONNECT	+OUT1 RTN	+5V RTN
6	NOCONNECT	-DC OUT	NOCONNECT	-DC OUT

