



## 75HBW4\_1.5 Series

75W - Single Output DC-DC Converter - Wide Input - Isolated & Regulated

# DC-DC Converter 75W

- ⊕ Wide input voltage range: 4:1
- ⊕ Typical efficiency: 85%
- ⊕ Isolation voltage 1.5KVDC
- ⊕ Operating temperature range: -40°C ~ +100°C
- ⊕ Short circuit protection (SCP)
- ⊕ Over-voltage protection
- ⊕ PCB board in-line type installs
- ⊕ International standard pin-out: 1/2 brick
- ⊕ CE Mark Meets 2006/95/EC, 93/68/EEC, and 89/336/EEC
- ⊕ Safety Meets UL60950-1, EN60950-1, and IEC60950-1
- ⊕ UL60950-1 and EN60950-1 Approval

The 75HBW4\_1.5 series contains isolated 75W DC-DC products with 4:1 input voltage. They feature efficiency up to 85%, 1500VDC isolation, operating temperature of -40°C to +100°C, input under-voltage protection, output short circuit and over-current protection.

They are widely applied in battery power supplies, industrial control, electricity, instruments, railway, communication, intelligence robot fields.



Common specifications	
Short circuit protection:	Hiccup, continuous, self-recovery
Cooling:	Heatsink, natural cooling
Operating Temperature:	-40°C ~ +100°C
Storage temperature range:	-55°C ~ +105°C
Thermal shutdown, case temperature:	100°C TYP
Storage humidity range:	Non-condensing 95%RH MAX
Pin welding resistance temperature:	260°C MAX, wave soldering for 10 sec.
Temperature coefficient:	±0.03%/°C
Vibration resistance:	10~55GHz: 5G
Case material:	Aluminium
Switching frequency:	300KHz typ.
MTBF (MIL-HDBK-217F @25°C):	1000 Khrs TYP
Dimension:	57.90x61.00x12.70mm
Weight:	94g

Input specifications					
Item	Test condition	Min	Typ	Max	Units
Input voltage range	• 24V	9		36	V
	• 48V	18		75	V
Input surge voltage	• 24V			50	VDC
	• 48V			100	VDC
Under-voltage lockout	• 24Vin power up		8.8		V
	• 24Vin power down		8		V
	• 48Vin power up		17		V
	• 48Vin power down		16		V
Input filter	PI type				
Positive logic remote ON/OFF	Logic Compatibility	Open Collector ref to -Input			
	Module ON Module OFF	Open Circuit < 0.8Vdc			
	Suffix „N“ to the Model Number with Negative Logic Remote ON/OFF				
	Module ON	< 0.8Vdc			
	Module OFF	Open Circuit			

Isolation specifications					
Item	Test condition	Min	Typ	Max	Units
Insulation voltage*	• Input-output	1500			VDC
	• Input-case	1500			VDC
	• Output-case	1500			VDC
Insulation resistance		10 <sup>7</sup>			Ω
Insulation resistance			1000		pF

### Example:

**75HBW4\_4812S1.5**  
**75= 75 Watt; HB= Half Brick; W4= Wide input (4:1); 48= 18-75Vin;**  
**12Vout; S= Single Output; 1.5= 1500 VDC Insulation**

Output specifications					
Item	Test condition	Min	Typ	Max	Units
Output voltage accuracy				±1	%
Line regulation	From high to low			±0.2	%
Load regulation	full load to zero load			±0.2	%
Transient response setting time	25% load step change			500	μs
Ripple & Noise*	20MHz Bandwidth				
	• 3.3V/5V (40mV RMS)			100	mVpk-pk
	• 12V/15V (60mV RMS)			150	mVpk-pk
	• 24V (100mV RMS)			240	mVpk-pk
	• 48V (200mV RMS)			180	mVpk-pk
External trim adj. range	Input voltage range		±10		%
Output voltage protection		115		140	%Vo nom.
Current limit	Nominal output	110		160	%
Start-up time			5		ms

\* Ripple and noise Ripple and Noise measured with 10uF tantalum and 1uF Ceramic capacitor across output. (48V: 1uF Ceramic cap. only)

### Note:

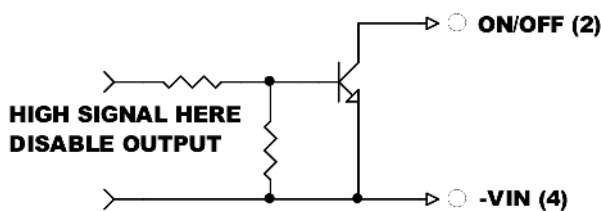
- The maximum capacitive load offered were tested at input voltage range and full load;
- Unless otherwise specified, data in this datasheet should be tested under the conditions of Ta=25°C, humidity<75%RH when inputting nominal voltage and outputting rated load;
- All index testing methods in this datasheet are based on our Company's corporate standards;
- We can provide product customization service and match filter module;
- Specifications of this product are subject to changes without prior notice.

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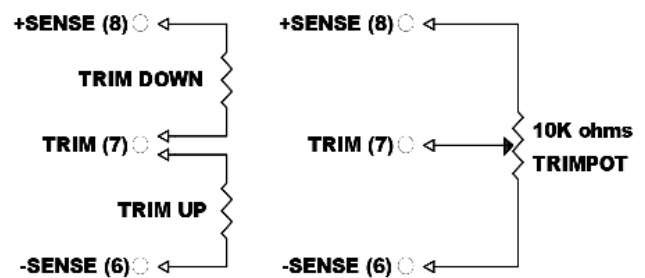
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Part Number	Input Voltage [VDC]		Input current [mA]		Output Voltage [VDC]	Output current [mA, max]	Efficiency [%, typ]	Capacitor load [ $\mu$ F, max]
	Nominal	Range	no load	full load				
75HBW4_2403S1.5	24	9-36	50	2611	3.3	15	79	15000
75HBW4_2405S1.5	24	9-36	50	3811	5	15	82	15000
75HBW4_2412S1.5	24	9-36	50	3756	12	6.25	83	6250
75HBW4_2415S1.5	24	9-36	50	3720	15	5	84	5000
75HBW4_2424S1.5	24	9-36	50	3720	24	3.12	84	3120
75HBW4_2448S1.5	24	9-36	50	3811	48	1.56	82	1560
75HBW4_4803S1.5	48	18-72	50	1289	3.3	15	80	15000
75HBW4_4805S1.5	48	18-72	50	1883	5	15	83	15000
75HBW4_4812S1.5	48	18-72	50	1860	12	6.25	84	6250
75HBW4_4815S1.5	48	18-72	50	1838	15	5	85	5000
75HBW4_4824S1.5	48	18-72	50	1835	24	3.12	85	3120
75HBW4_4848S1.5	48	18-72	50	1860	48	1.56	84	1560

### Remote on/off control



### External output trim



### Mechanical dimensions

Inches: X.XX=  $\pm 0.02$  , X.XXX=  $\pm 0.010$

Millimeters: X.X=  $\pm 0.5$  , X.XX=  $\pm 0.25$

