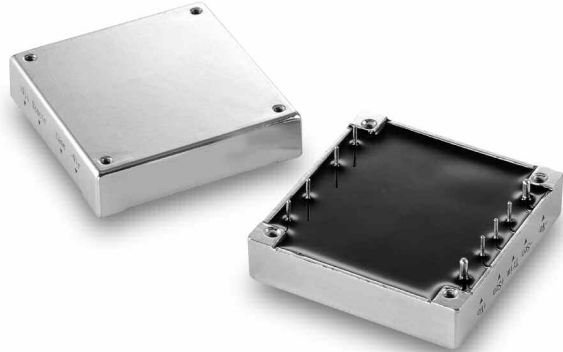


High Density DC-DC Modules



www.powersolve.co.uk

PS150 Series
75 to 150 Watt Wide Input
DC-DC Converters
Single Output



Features

- 75W/150W Isolated Output
- Efficiency to 85%
- 500KHz Switching Frequency
- 2 : 1 Input Range
- Regulated Outputs
- Continuous Short Circuit Protection
- Five-Sided Metal Case
- Industry Standard Half-Brick Package



MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	INPUT CURRENT		%EFF
				NO LOAD	FULL LOAD	
PS150-48S25		2.5 VDC	30 A		2.6 A	74
PS150-48S33		3.3 VDC	30 A		2.6 A	79
PS150-48S05	36-75VDC	5 VDC	30 A	25 mA	3.7 A	83
PS150-48S12		12 VDC	12.5 A		3.6 A	85
PS150-48S15		15 VDC	10 A		3.6 A	85
PS150-48S24		24 VDC	6.25 A		3.6 A	85

NOTE: 1. Nominal Input Voltage 48 VDC

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Electrical Specification

INPUT

Input Voltage Range	48V	36-75V
Undervoltage lockout	48Vin power up	34V
	48Vin power down	32.5V

Positive Logic Remote ON/OFF^{3,4}

Input Filter Pi Type

OUTPUT

Voltage Accuracy :	±1% max.	
Transient Response : 25% Step Load Change	<500µsec.	
External Trim Adj. Range	±10%	
Ripple & Noise, 20MHz BW,	2.5V & 3.3V & 5V	40mV RMS., max. 100mV pk-pk, max.
	12V & 15V	60mV RMS., max. 150mV pk-pk, max.
	24V	100mV RMS., max. 240mV pk-pk, max.

ENVIRONMENTAL

Temperature Coefficient	+0.03%/°C
Short Circuit Protection	Continuous
Line Regulation ¹	±0.2% max.
Load Regulation ²	±0.2% max.
Over Voltage Protection trip Range, % Vo nom.	115-140%
Current Limit	110% ~140% Nominal Output

GENERAL

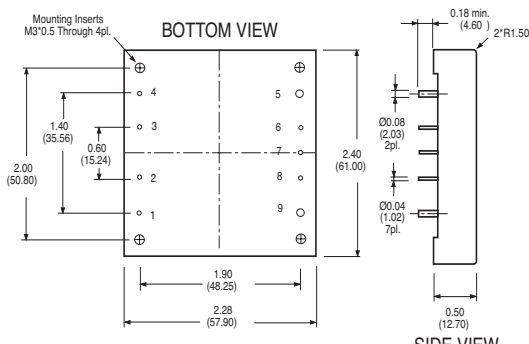
Efficiency	See Table	
Isolation Voltage	Input/Output	1500VDC min.
	Input/Case	1500VDC min.
	Output/Case	1500VDC min.
Isolation Resistance	10 ⁷ ohm min.	
Switching Frequency	500KHz, Typ.	
Operating case Temperature	-40°C to 100°C	
Storage Temperature	-40°C to +105°C	
Thermal Shutdown, Case Temp.	100°C Typ.	
Dimensions	2.28x2.40x0.50 inches (57.9x61.0x12.7 mm)	
Case Material	Aluminium	

NOTE:

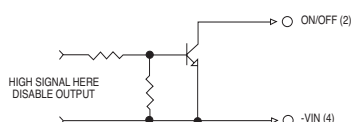
1. Measured From High Line to Low Line. 2. Measured From Full Load to Zero Load. 3. Logic Compatibility - Open Collector Ref. to -Input, Module ON - Open Circuit, Module OFF - < 0.8Vdc 4. Suffix "N" to the Model Number with Negative Logic Remote ON/OFF.

All Dimensions In Inches(mm)

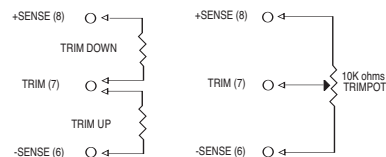
Tolerances	Inches	XX±.02	.XXX±.01	Pin
	Millimeters	X±.5	XX±.25	±0.5



Remote ON/OFF Control



External Output Trim



Pin Connection

Pin	Function
1	+Vin
2	ON/OFF
3	CASE
4	-Vin
5	-Vout
6	-Sense
7	Trim
8	+Sense
9	+Vout

All Specifications Typical At Nominal Line, Full Load and 25°C Unless Otherwise Noted.

Powersolve Electronics Ltd. Units 8A, Arnhem Road, Newbury, RG14 5RU. England

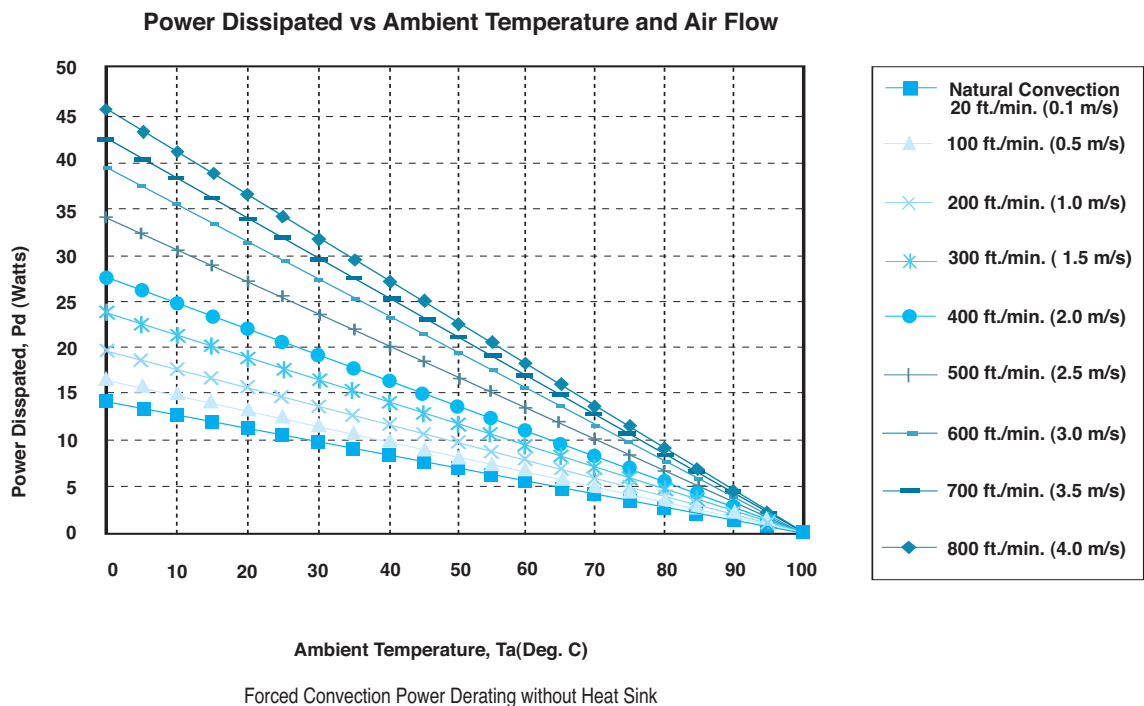
Tel:01635 521858 Fax: 01635 523771 Email: sales@powersolve.co.uk

Application Note

Derating:

The operating case temperature range of the PS150 series is -40°C to +100°C. When operating the PS150 series, proper derating or cooling is needed.

The following curve is the derating curve of a PS150 without heat sink.



Where:

The power dissipation (Pd):

$$Pd = Pi - Po = Po (1-n) / n$$

The thermal resistance are listed below:

Chart of Thermal Resistance vs Air Flow:

AIR FLOW RATE	TYPICAL Rca
Natural Convection 20ft./min. (0.1m/s)	7.12 °C/W
100 ft./min. (0.5m/s)	6.21 °C/W
200 ft./min. (1.0m/s)	5.17 °C/W
300 ft./min. (1.5m/s)	4.29 °C/W
400 ft./min. (2.0m/s)	3.64 °C/W
500 ft./min. (2.5m/s)	2.96 °C/W
600 ft./min. (3.0m/s)	2.53 °C/W
700 ft./min. (3.5m/s)	2.37 °C/W
800 ft./min. (4.0m/s)	2.19 °C/W

The temperature rise (ΔT):

$$\Delta T = Pd * Rca$$

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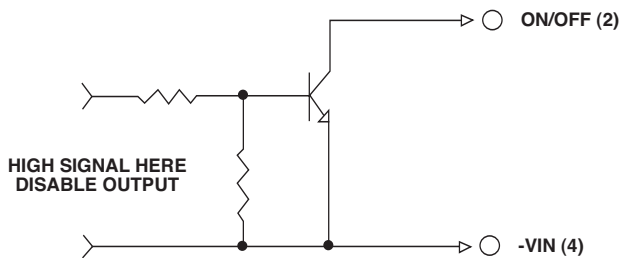


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Remote ON/OFF Control

The PS150 series allows the user to switch the module on and off electronically with remote on/off feature. The PS150 series are available with "positive logic" or "negative logic" (option).

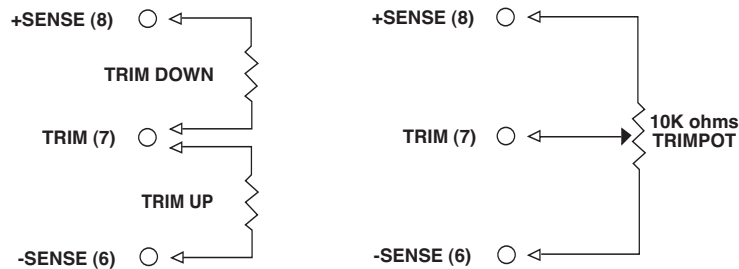
Logic Table



Logic State (Pin 2)	Negative Logic	Positive Logic
Logic Low - Switch Closed	Module on	Module off
Logic High - Switch Open	Module off	Module on

External Output Trimming

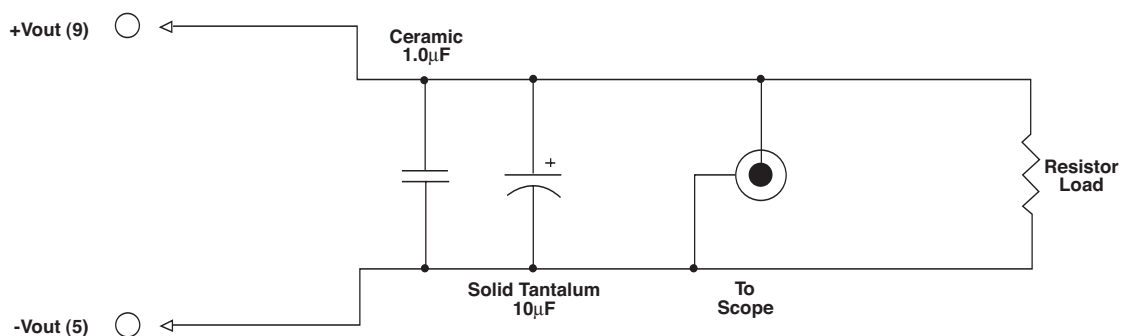
Output may optionally be externally trimmed ($\pm 10\%$) with a fixed resistor or an external trimpot as shown.



External Output

Output Noise

The output noise is measured with $10\mu\text{F}$ tantalum capacitor and $1.0\mu\text{F}$ ceramic capacitor across output.



Output Noise Test Circuit schematic

All Specifications Typical At Nominal Line, Full Load and 25°C Unless Otherwise Noted.