150 Watts
ECP Series

GREEN•POWER

- 100 W Convection–cooled
- 150 W Forced–cooled
- 2” x 4” Foot Print
- Single Outputs from 12 V to 48 V
- Built–in Fan Supply
- <0.5 W No Load Input Power
- 3 Year Warranty

Specification

Input

Input Voltage	• 90-264 VAC. Derate from 100% load at 100 VAC to 90% load at 90 VAC
Input Frequency	• 47-63 Hz
Input Current	• 2.5 A max at 115 VAC, 1.5 A max at 230 VAC
Inrush Current	• 60 A max at 230 VAC, cold start at 25 °C
Power Factor	• >0.95
Earth Leakage Current	• 230 µA at 260 VAC, 60 Hz
No Load Input Power	• <0.5 W
Input Protection	• Internal T3.15A/250VAC fitted in line and neutral

Output

Output Voltage	• See tables
Output Voltage Trim	• ±10%
Initial Set Accuracy	• ±1% at 50 % load
Minimum Load	• No minimum load requirement
Start Up Delay	• 2 s max
Start Up Rise Time	• 35 ms typical
Hold Up Time	• 16 ms minimum at full load and 115 VAC
Line Regulation	• ±0.5% max
Load Regulation	• ±0.5% max
Transient Response	• 4% maximum deviation, recovering to less than 1% within 500 µs for 25% step load
Ripple & Noise	• 1% max pk-pk, 20 MHz bandwidth, (see note 2)
Overvoltage Protection	• 115% - 140% of nominal voltage on main output. Recycle mains to reset.
Overload Protection	• 110-150%
Short Circuit Protection	• Trip and restart (hiccup)
Temperature Coefficient	• 0.02%/°C
Fan Supply	• 12 V at 500 mA

General

Efficiency	• See table
Isolation	• 4000 VAC Input to Output 1500 VAC Input to Ground 500 VDC Output to Ground
Protection Level	• Primary to Secondary: 2 MOPP Primary to Earth: 1 MOPP Secondary to Earth: 1 MOPP
Switching Frequency	• 60 kHz ± 10 kHz
MTBF	• >200 kHrs to MIL-HDBK-217F at 25 °C, GB

Environmental

Operating Temperature	• -20 °C to +70 °C derate from 100% load at 50 °C to 50% load at 70 °C
Cooling	• Convection cooled: 100 W Forced cooled: 150 W with 15 CFM
Operating Humidity	• 5% to 90% RH, non condensing
Operating Altitude	• 3000 m
Storage Temperature	• -40 °C to +85 °C
Shock	• IEC68-2-6, 30 g, 11 mins half sine, 3 times in each of 6 axes
Vibration	• IEC68-2-27, 10-55 Hz, 2 g 10 mins / sweep. 60 mins for each of 3 axes

EMC & Safety

Emissions	• EN55022/11, Level B conducted & Level A radiated
Harmonic Currents	• EN61000-3-2 Class A EN61000-3-2 Class C for load >60 W
Voltage Flicker	• EN61000-3-3
ESD Immunity	• EN61000-4-2, ±8 kV air, ±4 kV contact, Perf Criteria A
Radiated Immunity	• EN61000-4-3, 3 V/m, Perf Criteria A
EFT/Burst	• EN61000-4-4, level 3, Perf Criteria A
Surge	• EN61000-4-5, installation class 3, Perf Criteria A
Conducted Immunity	• EN61000-4-6, 3 V, Perf Criteria A
Dips & Interruptions	• EN61000-4-11, 30% 10 ms, 60%, 100 ms, 100%, 5000 ms Perf Criteria A, A, B for high line, A, B, B for low line at full load, EN60601-1-2, 30% 500 ms, 60% 100 ms, 100% 10 ms, 100% 5000 ms, Perf Criteria A, A, A, B for high line, A, B, A, B for low line at full load
Safety Approvals	• UL60950-1, IEC60950-1, EN60950-1, ANSI/AAMI ES 60601-1, IEC60601-1, EN60601-1

Models and Ratings

Output Voltage	Output Current		Ripple and Noise pk-pk[2]	Fan Output	Efficiency[3]	Model Number
	Convection-cooled	Forced-cooled[1]				
12.0 V	8.33 A	12.50 A	120 mV	12 V/0.5 A	91%	ECP150PS12†^
15.0 V	6.67 A	10.00 A	150 mV	12 V/0.5 A	91%	ECP150PS15†^
24.0 V	4.17 A	6.25 A	240 mV	12 V/0.5 A	91%	ECP150PS24†^
28.0 V	3.50 A	5.40 A	280 mV	12 V/0.5 A	92%	ECP150PS28†^
48.0 V	2.08 A	3.10 A	480 mV	12 V/0.5 A	92%	ECP150PS48†^

Notes

1. Requires 15 CFM.
2. Measured with 20 MHz bandwidth and 10 µF electrolytic capacitor in parallel with 0.1 µF ceramic capacitor
3. Minimum average efficiencies measured at 25%, 50%, 75% & 100% of 150 W load and 230 VAC input.

† Available from Farnell & element14. See pages 284-290.

^ Available from Newark. See pages 291-296.

Mechanical Details

TB1 - Input Connector	
Pin 1	Neutral
Pin 2	Not Fitted
Pin 3	Line

Mates with JST housing
VHR-3N and JST Series
SVH-21T-P1.1 crimp terminals

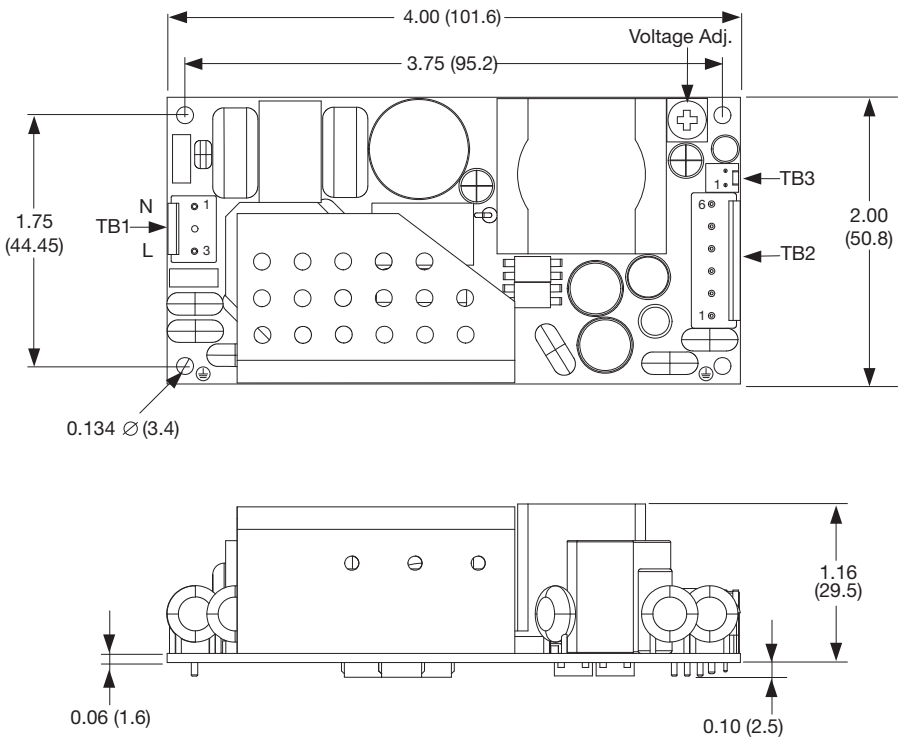
Mounting holes marked with
⏚ must be connected to safety earth

TB2 - Output Connector	
Pin 1	-Vout
Pin 2	-Vout
Pin 3	-Vout
Pin 4	+Vout
Pin 5	+Vout
Pin 6	+Vout

Mates with JST housing
VHR-6N and JST Series
SVH-21T-P1.1 crimp terminals

TB3 - Fan Connector	
Pin 1	Fan -
Pin 2	Fan +

Mates with Molex housing
22-01-1022 and 2759 crimp terminals



Notes

1. All dimensions shown in inches (mm).
   Tolerance: ±0.02 (0.5)
2. Weight: 0.42 lbs (190 g) approx.

Derating Curve