

150 Watts

ECP Series



- 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	<ul style="list-style-type: none"> • 90-264 VAC (120-370 VDC), Derate from 100% load at 100 VAC to 90% load at 90 VAC
Input Frequency	<ul style="list-style-type: none"> • 47-63 Hz
Input Current	<ul style="list-style-type: none"> • 1.5 A max at 115 VAC, 0.75 A max at 230 VAC
Inrush Current	<ul style="list-style-type: none"> • 60 A max at 230 VAC, cold start at 25 °C
Power Factor	<ul style="list-style-type: none"> • >0.95 at full load, 230 VAC
Earth Leakage Current	<ul style="list-style-type: none"> • 230 µA at 264 VAC, 60 Hz.
No Load Input Power	<ul style="list-style-type: none"> • <0.5 W
Input Protection	<ul style="list-style-type: none"> • Internal T3.15A/250VAC fitted in line and neutral

Output

Output Voltage	<ul style="list-style-type: none"> • See tables
Output Voltage Trim	<ul style="list-style-type: none"> • ±10%
Initial Set Accuracy	<ul style="list-style-type: none"> • ±1% at 50 % load
Minimum Load	<ul style="list-style-type: none"> • No minimum load requirement
Start Up Delay	<ul style="list-style-type: none"> • 550 ms typical
Start Up Rise Time	<ul style="list-style-type: none"> • 35 ms typical
Hold Up Time	<ul style="list-style-type: none"> • 16 ms minimum at full load and 115 VAC
Line Regulation	<ul style="list-style-type: none"> • ±0.5% max
Load Regulation	<ul style="list-style-type: none"> • ±0.5% max
Transient Response	<ul style="list-style-type: none"> • 4% maximum deviation, recovering to less than 1% within 500 µs for 25% step load
Ripple & Noise	<ul style="list-style-type: none"> • 1% max pk-pk, 20 MHz bandwidth, (see note 2)
Overvoltage Protection	<ul style="list-style-type: none"> • 115% - 140% of nominal voltage on main output. Recycle mains to reset.
Overload Protection	<ul style="list-style-type: none"> • 110-150%
Short Circuit Protection	<ul style="list-style-type: none"> • Trip and restart (hiccup)
Temperature Coefficient	<ul style="list-style-type: none"> • 0.02%/°C
Fan Supply	<ul style="list-style-type: none"> • 12 V at 500 mA

General

Efficiency	<ul style="list-style-type: none"> • See table
Isolation	<ul style="list-style-type: none"> • 4000 VAC Input to Output • 1500 VAC Input to Ground • 500 VDC Output to Ground
Protection Level	<ul style="list-style-type: none"> • Primary to Secondary: 2 MOPP • Primary to Earth: 1 MOPP
Switching Frequency	<ul style="list-style-type: none"> • 60 kHz ± 10 kHz
MTBF	<ul style="list-style-type: none"> • 300 kHrs to MIL-HDBK-217F at 25 °C, GB

Environmental

Operating Temperature	<ul style="list-style-type: none"> • -20 °C to +70 °C derate from 100% load at 50 °C to 50% load at 70 °C
Cooling	<ul style="list-style-type: none"> • Convection cooled: 100 W • Forced cooled: 150 W with 10 CFM
Operating Humidity	<ul style="list-style-type: none"> • 5% to 90% RH, non condensing
Operating Altitude	<ul style="list-style-type: none"> • 3000 m
Storage Temperature	<ul style="list-style-type: none"> • -40 °C to +85 °C
Shock	<ul style="list-style-type: none"> • IEC68-2-6, 30 g, 11 mins half sine, 3 times in each of 6 axes
Vibration	<ul style="list-style-type: none"> • IEC68-2-27, 10-55 Hz, 2 g 10 mins / sweep. 60 mins for each of 3 axes

EMC & Safety

Emissions	<ul style="list-style-type: none"> • EN55022/11, Level B conducted & Level A radiated
Harmonic Currents	<ul style="list-style-type: none"> • EN61000-3-2 Class A • EN61000-3-2 Class C for load >60 W
Voltage Flicker	<ul style="list-style-type: none"> • EN61000-3-3
ESD Immunity	<ul style="list-style-type: none"> • EN61000-4-2, ±8 kV air, ±4 kV contact, Perf Criteria A
Radiated Immunity	<ul style="list-style-type: none"> • EN61000-4-3, 10 V/m, Perf Criteria A
EFT/Burst	<ul style="list-style-type: none"> • EN61000-4-4, level 3, Perf Criteria A
Surge	<ul style="list-style-type: none"> • EN61000-4-5, installation class 3, Perf Criteria A
Conducted Immunity	<ul style="list-style-type: none"> • EN61000-4-6, 10 V, Perf Criteria A
Dips & Interruptions	<ul style="list-style-type: none"> • EN55024, 100% 10 ms, 30%, 500 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, B for high line, A, B, A, B for low line at full load
Safety Approvals	<ul style="list-style-type: none"> • 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

- Requires 10 CFM.
- Measured with 20 MHz bandwidth and 10 μ F electrolytic capacitor in parallel with 0.1 μ F ceramic capacitor

3. Minimum average efficiencies measured at 25%, 50%, 75% & 100% of 150 W load and 230 VAC input.

Mechanical Details

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

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

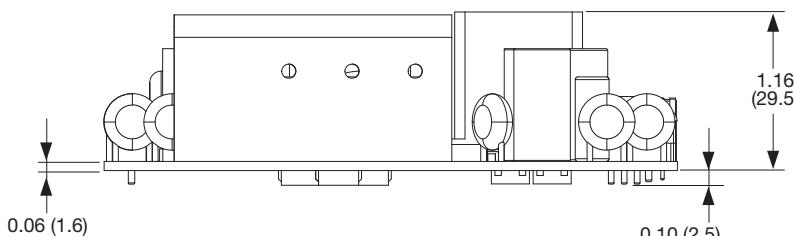
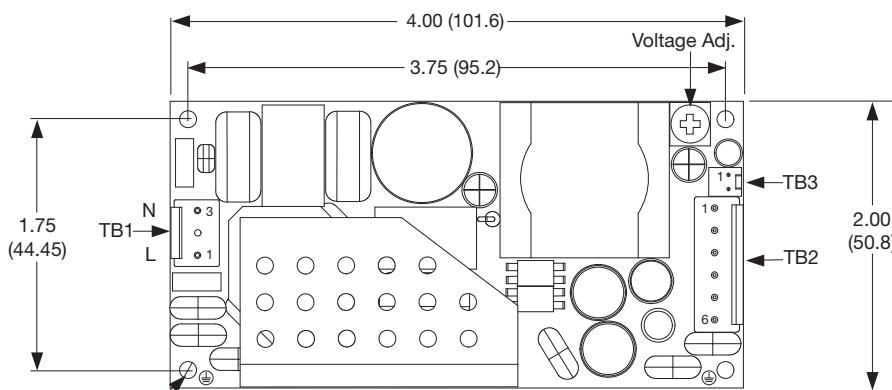
Mounting holes marked with \ominus must be connected to safety earth

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

- All dimensions shown in inches (mm).
Tolerance: ± 0.02 (0.5)

2. Weight: 0.42 lbs (190 g) approx.

Derating Curve

