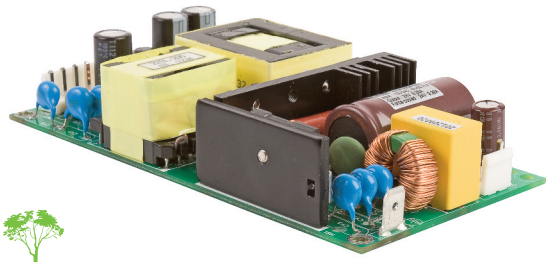
225 Watts
ECP Series



GREEN XP POWER

- Low 1” Profile with 2.5” x 5” Footprint
- 150/225 W Convection/ Forced–cooled
- High Efficiency – up to 95%
- Medical & ITE Approvals
- Built–in Fan Supply
- <0.5 W No Load Input Power
- 3 Year Warranty

Specification

Input

Input Voltage	• 85-264 VAC, Derate from 100% at 90 VAC to 90% at 85 VAC
Input Frequency	• 47-63 Hz
Input Current	• 2.2 A typical at 115 VAC, 1.1 A typical at 230 VAC
Inrush Current	• 120 A max at 230 VAC, cold start at 25 °C
Power Factor	• >0.95 at full load
Earth Leakage Current	• <230 µA at 264 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	• ±5%
Initial Set Accuracy	• ±1% at 50 % load
Minimum Load	• No minimum load requirement
Start Up Delay	• 2 s max
Start Up Rise Time	• 55 ms typical
Hold Up Time	• 10 ms minimum at full load and 115 VAC 20 ms typical at 150 W, 13 ms typical at 225 W
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	• 110% - 140% of nominal voltage on main output. Recycle mains to reset.
Overload Protection	• 110-170%
Short Circuit Protection	• Trip and restart (hiccup)
Thermal Protection	• Measured internally. Auto resetting.
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 1500 VAC Output to Ground
Protection Level	• Primary to Secondary: 2 MOPP Primary to Earth: 1 MOPP Secondary to Earth: 1 MOPP
Power Density	• 12/18 W/in³ convection/forced-cooled,
Switching Frequency	• PFC: 70-130 KHz, PWM: 50-80 KHz
MTBF	• >300 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: 150 W Forced cooled: 225 W with 10 CFM
Operating Humidity	• 5% to 90% RH, non condensing
Operating Altitude	• 5000 m
Storage Temperature	• -40 °C to +85 °C
Shock	• IEC68-2-27, 30 g, 11 ms half sine, 3 times in each of 6 axes
Vibration	• IEC68-2-6, 10-500 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 >145 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	• EN55024, 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[4]
	Convection-cooled	Forced-cooled[1]				
12.0 V	12.50 A	18.75 A	120 mV	12 V/0.5 A	93%	ECP225PS12
15.0 V	10.00 A	15.00 A	150 mV	12 V/0.5 A	93%	ECP225PS15
24.0 V	6.25 A	9.38 A	240 mV	12 V/0.5 A	94%	ECP225PS24
28.0 V	5.36 A	8.04 A	280 mV	12 V/0.5 A	94%	ECP225PS28
48.0 V	3.10 A	4.69 A	480 mV	12 V/0.5 A	94%	ECP225PS48

Notes

1. Requires 10 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 225 W load and 230 VAC input.
4. 3" x 5" Footprint available for OEM quantities, add suffix '-3X5'to part eg. ECP225PS24-3X5.

Mechanical Details

CN1 - 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

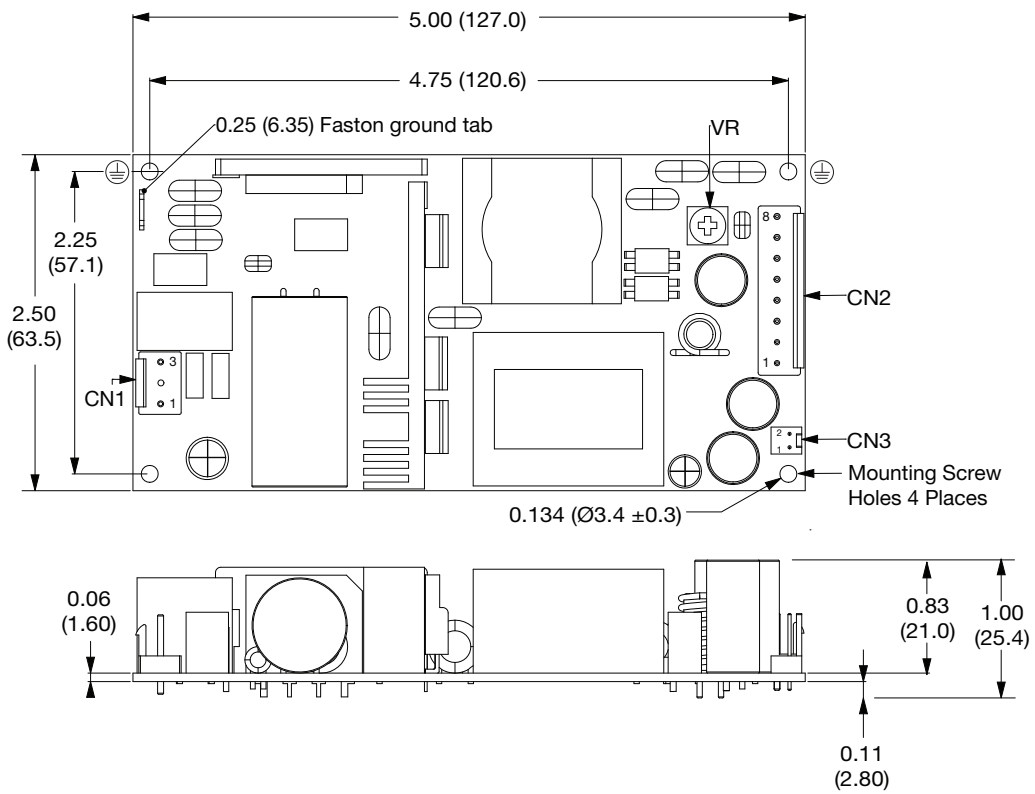
Mounting holes marked with ⏚ must be connected to safety earth

CN2 - Output Connector	
Pin 1	-Vout
Pin 2	-Vout
Pin 3	-Vout
Pin 4	-Vout
Pin 5	+Vout
Pin 6	+Vout
Pin 7	+Vout
Pin 8	+Vout

Mates with JST housing
VHR-8N and JST Series
SVH-21T-P1.1 crimp terminals

CN3 - 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: 0.51 lbs (230 g) approx.

Derating Curve

