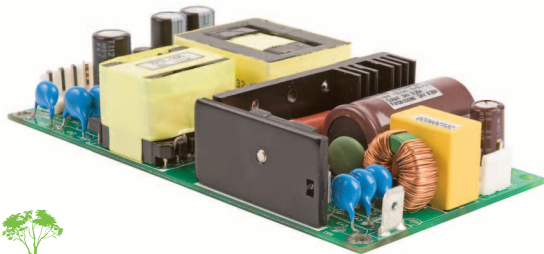


ECP Series



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/in ³ 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 | • EN55032/11, Level B conducted & Level A radiated, Level B radiated with external core, see note 5. |
| 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, 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, A, B for high line, A, B, A, B for low line at full load |
| Safety Approvals | • UL62368-1, IEC62368-1, EN62368-1, 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

- Requires 10 CFM.
- Measured with 20 MHz bandwidth and 10 µF electrolytic capacitor in parallel with 0.1 µF ceramic capacitor
- Minimum average efficiencies measured at 25%, 50%, 75% & 100% of 225 W load and 230 VAC input.
- 3" x 5" Footprint available for OEM quantities, add suffix '-3X5' to part eg. ECP225PS24-3X5.
- To meet Level B radiated, a torroid is required on output load leads. Use King Core type K5B RC 25*12*15 for all models except 28V which requires type K5BT 16.5*13*8.2.

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

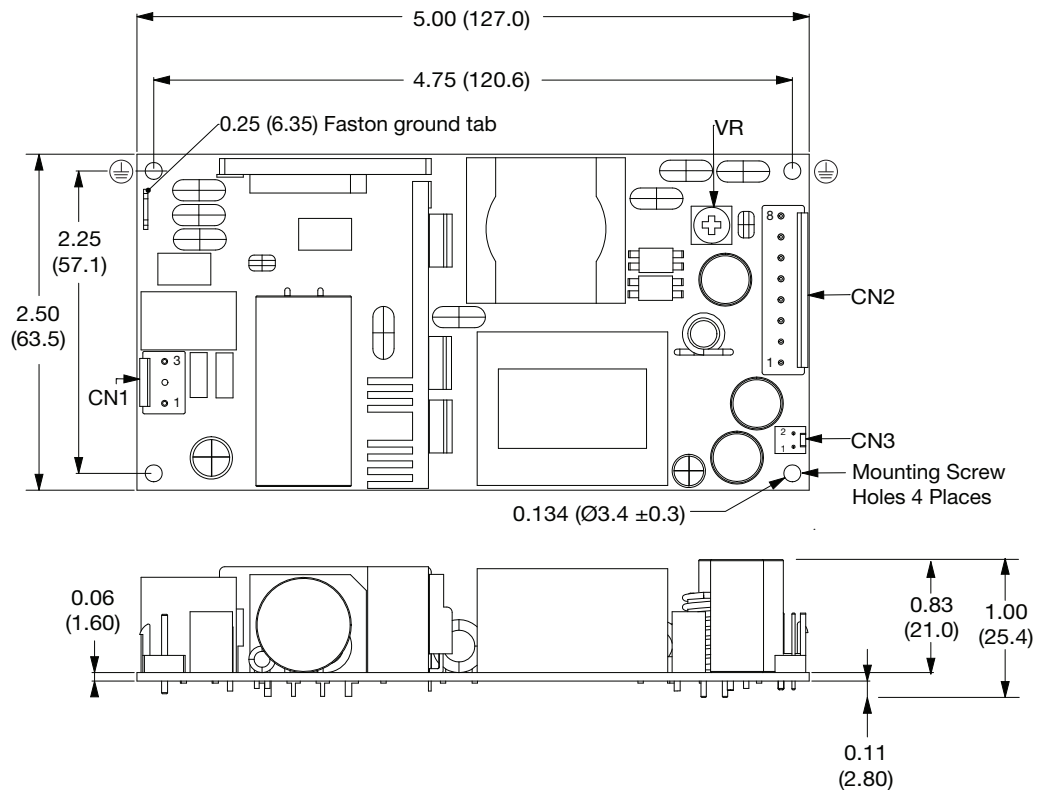
Mounting holes marked with ⊕ must be connected to safety earth

| 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 + |

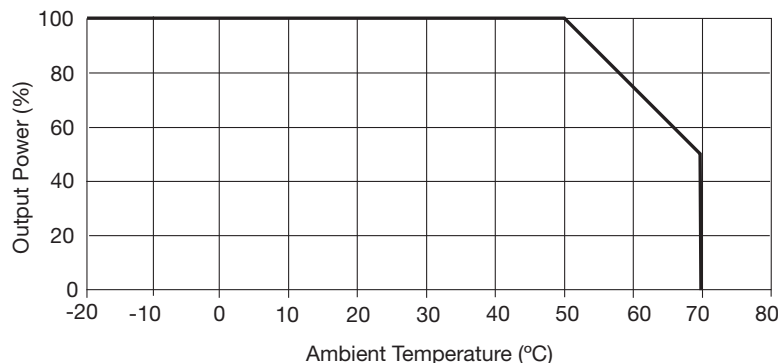
Mates with Molex housing 22-01-1022 and 2759 crimp terminals



Notes

- All dimensions shown in inches (mm). Tolerance: ±0.02 (0.5)
- Weight: 0.51 lbs (230 g) approx.
- Non earthed mounting hole on secondary side requires insulated mounting to maintain 1 MOPP secondary to ground.

Derating Curve



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