

# 60 Watts

## ECP Series



GREEN XP POWER

### Specification

#### Input

|                       |   |
|-----------------------|---|
| Input Voltage         | • 85-264 VAC, derate from 100% load at 90 VAC to 90% load at 85 VAC |
| Input Frequency       | • 47-63 Hz  |
| Input Current         | • 0.85 A max at 115 VAC   |
| Inrush Current        | • 100 A max at 230 VAC, cold start at 25 °C                         |
| Power Factor          | • EN61000-3-2, class A  |
| No Load Input Power   | • <0.5 W  |
| Earth Leakage Current | • <250 $\mu$ A at 264 VAC, 60 Hz                                    |
| Input Protection      | • Internal T2 A/250 V fuse in both line and neutral                 |

#### Output

|                          |  |
|--------------------------|--|
| Output Voltage           | • See table  |
| Output Voltage Trim      | • $\pm$ 10% on V1 only, output 2 on multi output models will track by the same percentage                                      |
| Minimum Load             | • 10% minimum load required on all outputs of multi output models  |
| Start Up Delay           | • 1.3 s max  |
| Start Up Rise Time       | • 15 ms typical  |
| Hold Up Time             | • 16 ms min at full load at 115 VAC  |
| Total Regulation         | • Output 1: 2% from 0% load to 100% load<br>Output 2: 5% from 20% load to 100% load<br>Output 3: 5% from 10% load to 100% load |
| Remote Sense             | • Fitted to US05 version, compensates for 0.5 V drop   |
| Transient Response       | • 4% max deviation, recovering to less than 1% within 500 $\mu$ s for 50% step load change at 1 A/ $\mu$ s                     |
| Ripple & Noise           | • 1% pk-pk (2% for US05 version), measured with 20 MHz bandwidth   |
| Overvoltage Protection   | • 115-140% of nominal output voltage on V1 only, recycle input to reset  |
| Overload Protection      | • 120-160% of nominal power  |
| Short Circuit Protection | • Trip and restart (hiccup mode)   |
| Temperature Coefficient  | • $\pm$ 0.02%/°C max   |

- Low Profile Design
- Compact Size, 4" x 2"
- IT & Medical Approvals
- Single, Dual and Triple Output
- <0.5 W No Load Input Power
- Peak Load Capability
- 3 Year Warranty

#### General

|                     |  |
|---------------------|--|
| Efficiency          | • 88% typical at 230 VAC and full load   |
| Isolation           | • 4000 VAC Input to Output<br>1500 VAC Input to Ground<br>500 VDC Output to Ground |
| Switching Frequency | • 30-130 kHz variable  |
| MTBF                | • >400 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               | • Natural convection  |
| Operating Humidity    | • 5% to 95% RH, non condensing  |
| Operating Altitude    | • 3000 m max  |
| Storage Temperature   | • -40 °C to +85 °C  |
| Shock                 | • 30 g pk, half sine, 6 axes  |
| Vibration             | • 2 g rms, 5 Hz to 500 Hz, 3 axes                                       |

#### EMC & Safety

|                      |   |
|----------------------|---|
| Emissions            | • EN55011/22, level B conducted & level A radiated  |
| Harmonic Currents    | • EN61000-3-2, class A  |
| Voltage Flicker      | • EN61000-3-3   |
| ESD Immunity         | • EN61000-4-2, $\pm$ 4 kV indirect 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, B, B<br>EN60601-1-2, 30% 500 ms, 60% 100 ms, 100% 10 ms, 100% 5000 ms, Perf Criteria A, A, A, B |
| Safety Approvals     | • EN60950-1, cUL60950-1, IEC60950-1, EN60601-1, ANSI/AAMI ES60601-1, CSA22.2 No.60601-1 Including Risk Management, IEC60601-1   |

## Models and Ratings

| Output Power | Output 1 |         |                     | Output 2  |         |                     | Output 3 |         | Model Number |
|--------------|----------|---------|---------------------|-----------|---------|---------------------|----------|---------|--------------|
|              | Voltage  | Current | Peak <sup>(1)</sup> | Voltage   | Current | Peak <sup>(1)</sup> | Voltage  | Current |              |
| 55 W         | +5.0 VDC | 11.0 A  | 14.3 A              |           |         |                     |          |         | ECP60US05    |
| 60 W         | +5.0 VDC | 7.0 A   | 9.1 A               | +12.0 VDC | 3.0 A   | 3.90 A              |          |         | ECP60UD01    |
| 60 W         | +5.0 VDC | 7.0 A   | 9.1 A               | +15.0 VDC | 2.0 A   | 2.60 A              |          |         | ECP60UD02    |
| 60 W         | +5.0 VDC | 7.0 A   | 9.1 A               | +24.0 VDC | 1.5 A   | 1.95 A              |          |         | ECP60UD03    |
| 60 W         | +5.0 VDC | 7.0 A   | 9.1 A               | +12.0 VDC | 3.0 A   | 3.90 A              | -12.0 V  | 0.30 A  | ECP60UT01    |
| 60 W         | +5.0 VDC | 7.0 A   | 9.1 A               | +15.0 VDC | 2.0 A   | 2.60 A              | -15.0 V  | 0.30 A  | ECP60UT02    |
| 60 W         | +5.0 VDC | 7.0 A   | 9.1 A               | +24.0 VDC | 1.5 A   | 1.95 A              | +12.0 V  | 0.30 A  | ECP60UT03    |
| 60 W         | +5.0 VDC | 7.0 A   | 9.1 A               | +24.0 VDC | 1.5 A   | 1.95 A              | -12.0 V  | 0.30 A  | ECP60UT04    |

### Notes

1. Peak load lasting <30 s with a maximum duty cycle of 10%, average output power not to exceed nominal.

## 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

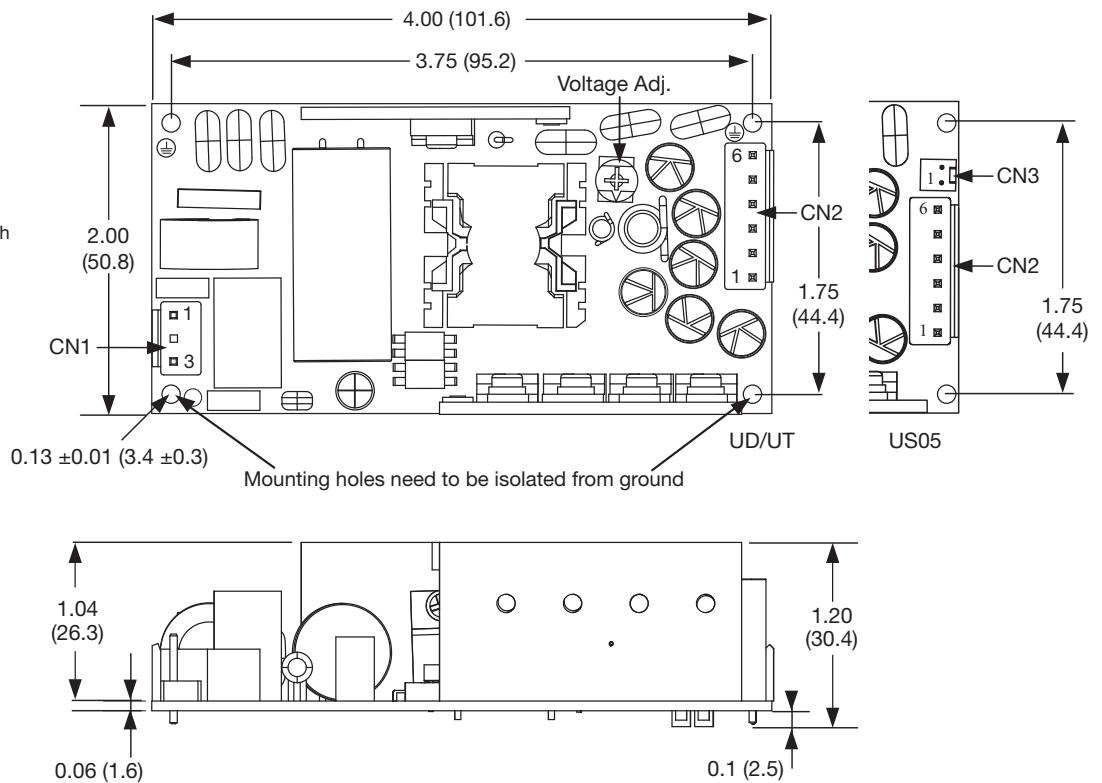
Mounting holes marked with  $\oplus$  must be connected to safety earth

| CN2 Output Connector |       |      |
|----------------------|-------|------|
|                      | UD/UT | US05 |
| Pin 1                | V3    | RTN  |
| Pin 2                | RTN   | RTN  |
| Pin 3                | RTN   | RTN  |
| Pin 4                | V1    | +5 V |
| Pin 5                | V1    | +5 V |
| Pin 6                | V2    | +5 V |

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

| CN3 Sense Connector |        |
|---------------------|--------|
| Pin 1               | -Sense |
| Pin 2               | +Sense |

Fitted to ECP60US05 only. Mates with Molex Housing 22-01-1022 and 2759 crimp terminals



### Notes

1. All dimensions are in inches (mm).  
2. Weight: 0.34 lbs (155 g) approx.

3. Tolerance:  $\pm 0.02$  ( $\pm 0.5$ ) unless stated

## Derating Curve

