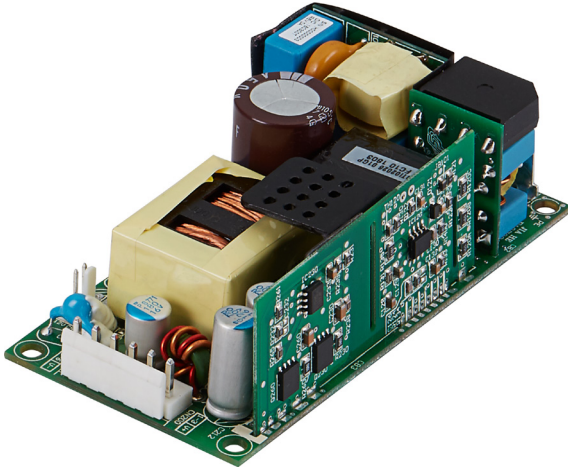


# FSP150-P24 A Series

### FEATURES

- Class-I design
- Design to meet IEC 60950-1, IEC 60065-1, IEC 62368-1 safety standard
- Low profile 2 x 4 x 1.2 inches
- No load power consumption less than 0.21W
- EN 55032 Class B radiated emission
- High altitude 5000 meters operation
- OTP, Brown out protection
- Fan driver 12V



### SAFETY STANDARD APPROVAL



### DESCRIPTION

This AC-DC switching power supplies in a package of 2 x 4 inches is a Class-I PSU and no load power consumption less than 0.21W. This PSU is capable of delivering 150 watts continuous power at 7 CFM forced air cooling or 100 watts continuous power at convection cooling and 50°C operation temperature. Product is suitable for audio & video, display, information, networking & PoE application.

### INPUT SPECIFICATIONS

|                           |  |
|---------------------------|--|
| Input voltage:            | 90-264 VAC   |
| Input frequency:          | 47-63 Hz   |
| Input current:            | 1.7 A (rms) for 115 VAC<br>0.8 A (rms) for 230 VAC |
| No load power consumption | ≤0.21W   |
| Earth leakage current:    | 0.75 mA max. @ 264 VAC, 63 Hz                      |
| Touch current:            | 0.25 mA max. @ 264 VAC, 63 Hz                      |

### OUTPUT SPECIFICATIONS

|                          |   |
|--------------------------|---|
| Output voltage/current:  | See rating chart.   |
| Fan driver:              | Non-regulated 12V @ 500 mA max.   |
| Total output power:      | 150W  |
| Protection:              |   |
| Over voltage:            | Latch off   |
| Short circuit:           | Auto recovery   |
| Over current:            | Auto recovery   |
| Over temperature:        | Latch off   |
| Brown out:               | Set at 75VAC  |
| Temperature coefficient: | All outputs ±0.04% /°C maximum  |
| Transient response:      | Maximum excursion of 4% or better on all models, recovering to 1% of final value within 500 us after a 25% step load change |

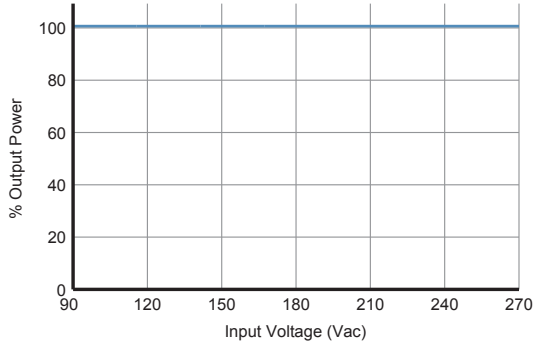
### ENVIRONMENTAL SPECIFICATIONS

|                        |   |
|------------------------|---|
| Operating temperature: | -20°C~+70°C   |
| Storage temperature:   | -40°C~+85°C   |
| Relative humidity:     | 5% to 95% non-condensing  |
| Derating:              | Derate from 100% at +50°C linearly to 50% at +70°C, applicable to both convection and forced-air cooling conditions |

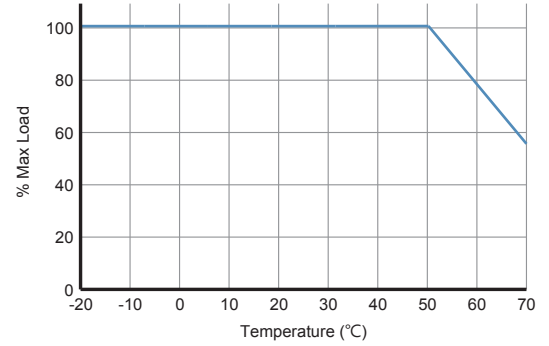
### GENERAL SPECIFICATIONS

|                       |   |
|-----------------------|---|
| Power factor:         | 0.9 minimum   |
| Efficiency:           | See rating chart.   |
| Hold-up time:         | 10 ms minimum at 120 VAC  |
| Line regulation:      | ±0.5% maximum at full load  |
| Inrush current:       | 80 A @ 115 VAC, at 25°C cold start<br>160 A @ 230 VAC, at 25°C cold start   |
| Operating altitude:   | 5000 meters above sea level   |
| Withstand voltage:    | 3000 VAC from input to output,<br>1500 VAC from input to ground,<br>1500 VAC from output to ground  |
| Isolation Resistance: | Input to output 100M ohm @ 500Vdc, 25°C   |
| MTBF:                 | 400,000 hours at full load at 25°C ambient, calculated per TELCORDIA SR-332   |
| EMC Performance       |   |
| EN55032               | Class B conducted, class B radiated   |
| FCC:                  | Class B conducted, class B radiated   |
| VCCI:                 | Class B conducted, class B radiated   |
| EN61000-3-2:          | Harmonic distortion, class A and D  |
| EN61000-3-3:          | Line flicker  |
| EN61000-4-2:          | ESD, ±8 KV air and ±4 KV contact  |
| EN61000-4-3:          | Radiated immunity, 3 V/m  |
| EN61000-4-4:          | Fast transient/burst, ±1 KV   |
| EN61000-4-5:          | Surge, ±1 KV diff., ±2 KV com   |
| EN61000-4-6:          | Conducted immunity, 3 Vrms  |
| EN61000-4-8:          | Magnetic field immunity, 1 A/m  |
| EN61000-4-11:         | Voltage dip immunity,<br>30% reduction for 500 ms, criteria A<br>>95% reduction for 10 ms, criteria A<br>>95% reduction for 5000 mS, criteria B |

**INPUT VOLTAGE DERATING CURVE**



**OUTPUT POWER DERATING CURVE**



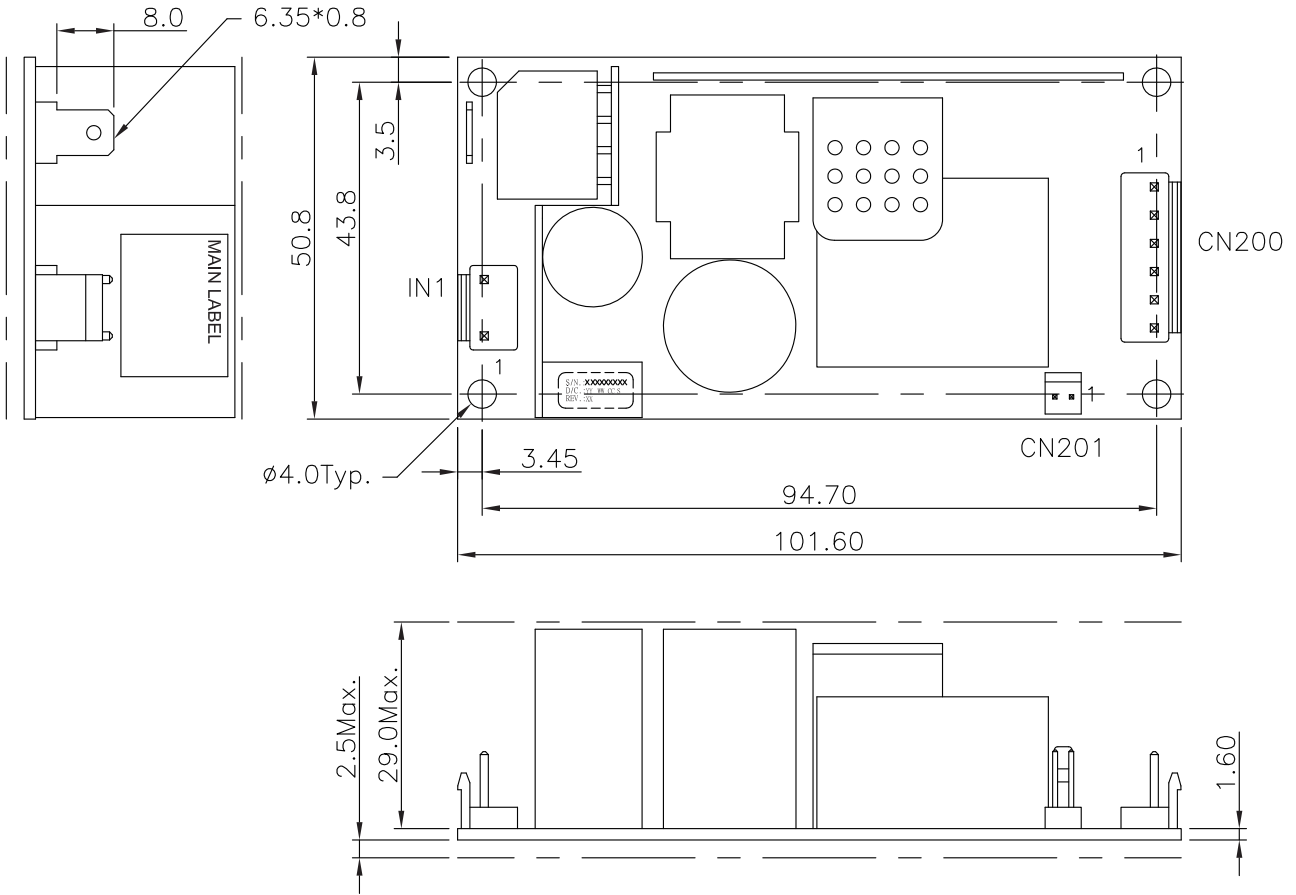
**OUTPUT VOLTAGE/CURRENT RATING CHART**

| Model          | Output  |           |                         |                    |           |                |               | Efficiency<br>Max. Power<br>115/230 Vac<br>(typical) |
|----------------|---------|-----------|-------------------------|--------------------|-----------|----------------|---------------|--|
|                | Voltage | Min. Load | Max. Current convection | Max. Current 7 CFM | Tolerance | Ripple & Noise | Max. Power    |  |
| FSP150-P24-A12 | 12 V    | 0 A       | 8.35 A                  | 12.50 A            | ±3%       | 120 mV         | 100 W / 150 W | 89 / 91%   |
| FSP150-P24-A19 | 19 V    | 0 A       | 5.26 A                  | 7.9 A              | ±3%       | 190 mV         | 100 W / 150 W | 88 / 90%   |
| FSP150-P24-A24 | 24 V    | 0 A       | 4.20 A                  | 6.25 A             | ±3%       | 240 mV         | 100 W / 150 W | 88 / 90%   |
| FSP150-P24-A54 | 54 V    | 0 A       | 1.85 A                  | 2.78 A             | ±3%       | 500 mV         | 100 W / 150 W | 88 / 90%   |

NOTES:

- Ripple and noise is maximum peak to peak voltage value measured at output within 20 MHz bandwidth, at rated line voltage and output load ranges, and with a 47  $\mu$ F electrical capacitor in parallel with a 0.1  $\mu$ F ceramic capacitor across the output.
- The first value of maximum current is at convection cooling. The second value is with 7 CFM forced air provided by user.

### MECHANICAL SPECIFICATIONS



Pin assignment:

1. Input connector (CN1):

| Pin No. | Function | Wafer                          |
|---------|----------|--------------------------------|
| 1       | Line     | J.S.T B2P3-VH<br>or equivalent |
| 2       |          |                                |
| 3       | Neutral  |                                |

Matting connector:  
J.S.T housing VHR-3N,  
Crimp PIN SVH-21T-P1.1

Output connector (CN200):

| Pin No. | Function | Wafer                         |
|---------|----------|-------------------------------|
| 1, 2, 3 | +12V     | J.S.T B6P-VH<br>or equivalent |
| 4, 5, 6 | Return   |                               |

Matting connector:  
J.S.T housing VHR-6N,  
Crimp PIN SVH-41T-P1.1

3. Fan connector (CN201):

MOLEX 22-27-2021

4. Ground pad: 8 x 6.35 x 0.8 mm

NOTES:

- Dimensions shown in inches [mm]
- Tolerance 0.02 [0.5] maximum
- Weight: 200 grams (0.44 lbs.) approx.