



- Universal AC input
- Protections: Short circuit/Over load/Over voltage/Over temperature
- Built-in active PFC function, PF >0.93
- LED indicator for power on
- Built-in constant current limiting circuit
- Low profile: 33mm thickness
- Fixed switching frequency at PFC: 67KHz PWM: 134KHz



| Model Number         | Output Volts   | Output Amps | Ripple & Noise | Min Load   | DC Volt Adjust    | Load Reg | Efficiency |
|----------------------|----------------|-------------|----------------|------------|-------------------|----------|------------|
| <b>SINGLE OUTPUT</b> |                |             |                |            |                   |          |            |
| SP150-3.3            | 3.3 Volts(DC)  | 30 Amps     | 100mV pk-pk    | 0~30Amps   | 3.14~3.63Volt(DC) | ±1.0%    | 67%        |
| SP150-5              | 5 Volts(DC)    | 30 Amps     | 100mV pk-pk    | 0~30Amps   | 4.75~5.5Volt(DC)  | ±1.0%    | 75%        |
| SP150-7.5            | 7.5 Volts(DC)  | 20 Amps     | 100mV pk-pk    | 0~20Amps   | 7.13~8.25Volt(DC) | ±1.0%    | 79%        |
| SP150-12             | 12 Volts(DC)   | 12.5 Amps   | 100mV pk-pk    | 0~12.5Amps | 11.4~13.2Volt(DC) | ±0.5%    | 80%        |
| SP150-13.5           | 13.5 Volts(DC) | 11.2 Amps   | 100mV pk-pk    | 0~11.2Amps | 12.8~14.9Volt(DC) | ±0.5%    | 80%        |
| SP150-15             | 15 Volts(DC)   | 10 Amps     | 100mV pk-pk    | 0~10Amps   | 14.3~16.5Volt(DC) | ±0.5%    | 81%        |
| SP150-24             | 24 Volts(DC)   | 6.3Amps     | 150mV pk-pk    | 0~6.3Amps  | 22.8~26.4Volt(DC) | ±0.5%    | 83%        |
| SP150-27             | 27 Volts(DC)   | 5.6 Amps    | 150mV pk-pk    | 0~5.6Amps  | 25.7~29.7Volt(DC) | ±0.5%    | 84%        |
| SP150-48             | 48 Volts(DC)   | 3.2 Amps    | 250mV pk-pk    | 0~3.2Amps  | 45.6~52.8Volt(DC) | ±0.5%    | 84%        |

## 150W Single Output with PFC Function

## SP150 series

### INPUT SPECIFICATIONS

|                                   |                                          |
|-----------------------------------|------------------------------------------|
| Input Voltage Range (Note3)       | 90 ~ 264VAC 120~370 Volts(DC)            |
| Frequency Range                   | 47-63 Hz                                 |
| Inrush Current, typ: (cold start) | 40Amps / 230VAC                          |
| Input Current                     | 2.5 Amps. @ 115VAC<br>1.2 Amps. @ 230VAC |
| Leakage current                   | < 2mAmps / 240VAC                        |
| Min Load                          | See Selection Chart                      |
| Power Factor @ FL                 | PF> 0.93 / 230VAC<br>> 0.98 / 115VAC     |

### OUTPUT SPECIFICATIONS

|                            |                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Voltage and Current        | See Selection Chart                                                                                                                                                                                                                                                                                                                                                       |
| Line Regulation            | ±0.5%                                                                                                                                                                                                                                                                                                                                                                     |
| Load Regulation            | See Selection Chart                                                                                                                                                                                                                                                                                                                                                       |
| Voltage Tolerance (Note 2) | ±2.0%: 3.3~15Volts(DC)<br>±1.0%: 24~48Volts(DC)                                                                                                                                                                                                                                                                                                                           |
| Ripple/Noise (Note 1)      | See Selection Chart                                                                                                                                                                                                                                                                                                                                                       |
| Hold Up Time               | 20mS @ FL                                                                                                                                                                                                                                                                                                                                                                 |
| Setup, Rise Time           | 600ms, 30m @ FL                                                                                                                                                                                                                                                                                                                                                           |
| Over Voltage Protection    | 3.63 ~ 4.46Volt(DC): 3.3Volts(DC)<br>5.5 ~ 6.75Volt(DC): 5Volts(DC)<br>8.25 ~ 10.13Volt(DC): 7.5Volts(DC)<br>13.2 ~ 16.2Volt(DC): 12Volts(DC)<br>14.85 ~ 18.2Volt(DC): 13.5Volts(DC)<br>16.5 ~ 20.25Volt(DC): 15Volts(DC)<br>26.4 ~ 32.4Volt(DC): 24Volts(DC)<br>29.7 ~ 36.45Volt(DC): 27Volts(DC)<br>52.8 ~ 64.8Volt(DC): 48Volts(DC)<br>Shut down o/p voltage, re-power |
| Over Current Protection    | 105 ~ 150% rated output power<br>Constant current limiting, auto-recover                                                                                                                                                                                                                                                                                                  |
| Over Temperature           | 95°C +/-5°C TSW1 : detect on<br>heatsink of power transistor<br>after cool down                                                                                                                                                                                                                                                                                           |
| DC Volt Adjust             | See Selection Chart                                                                                                                                                                                                                                                                                                                                                       |

### GENERAL SPECIFICATIONS

|        |                                      |
|--------|--------------------------------------|
| Safety | UL60950-1,<br>TUV EN60950-1 Approved |
|--------|--------------------------------------|

All specifications are typical at nominal input, full load, and 25°C unless otherwise noted

|                       |                                                                                                            |
|-----------------------|------------------------------------------------------------------------------------------------------------|
| Insulation Resistance | ≥ 100MΩ / 500Volts(DC)                                                                                     |
| EMI                   | Compliance to EN55022 (CISPR22)<br>Class B                                                                 |
| Harmonic Current      | Compliance to EN61000-3-2,-3                                                                               |
| Efficiency            | See Selection Chart                                                                                        |
| Isolation             | 3000VAC Input - Output<br>1500VAC Input - Ground<br>500VAC Output - Ground                                 |
| EMS                   | Compliance to<br>EN61000-4-2, 3, 4, 5, 6, 8, 11;<br>ENV50204, EN55024,<br>light Industry Level, Criteria A |

### ENVIRONMENTAL SPECIFICATIONS

|                         |                                                                         |
|-------------------------|-------------------------------------------------------------------------|
| Oper. Temperature       | -10°C to +60°C (See Derate Curve)                                       |
| Storage Temperature     | -20°C to +85°C, 10~95% RH                                               |
| Relative Humidity       | 20~90% RH non cond                                                      |
| Temperature Coefficient | ±0.05% / °C (0-50°C)                                                    |
| MTBF                    | 191.2KHrs min, MIL-HDBK-217F(25°C)                                      |
| Vibration               | 10~500Hz, 2G10min./1cycle, period for<br>60min. each along X, Y, Z axes |

### PHYSICAL SPECIFICATIONS

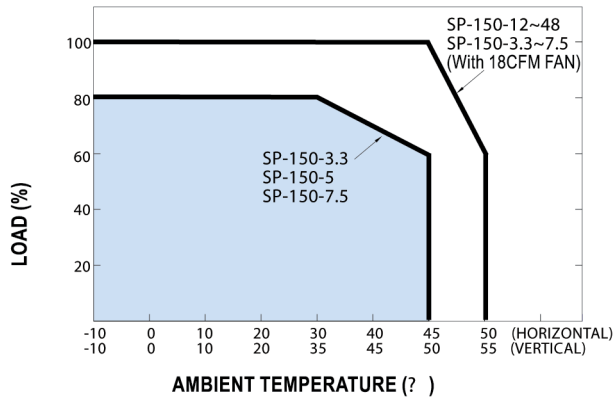
|             |                       |
|-------------|-----------------------|
| Size        |                       |
| Millimeters | 199 x 99 x 50         |
| Inches      | 7.84" x 3.90" x 1.97" |
| Weight      | 26.81 oz (760g)       |

### NOTE

1. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
2. Tolerance : includes set up tolerance, line regulation and load regulation.
3. Derating may be needed under low input voltages. Please check the derating curve for more details.



■ Derating Curve



■ Output Derating VS Input Voltage

