

# 350W ITE POWER SUPPLIES

## DESCRIPTION

This AC-DC switching power supplies in a package of 3 x 5 inches is a Class-I PSU and no load power consumption less than 0.5W. This PSU is capable of delivering 350 watts continuous power at 18 CFM forced air cooling or 200 watts continuous power at convection cooling. Product is suitable for audio & video, display, information, and networking application

## FEATURES

- Class-I design
- Design to meet IEC 60950-1, IEC 62368-1 safety standard
- Low profile 3 x 5 x 1.34 inches
- No load power consumption less than 0.5W
- EN 55032 Class B radiated emission
- High altitude 5000 meters operation
- OTP, Brown out protection
- Fan driver 12V

## INPUT SPECIFICATIONS

Input voltage: 90-264 VAC  
 Input frequency: 47-63 Hz  
 Input current: 3.7 A (rms) for 115 VAC  
 1.76 A (rms) for 230 VAC  
 No load power consumption  $\leq 0.5W$   
 Earth leakage current: 1.5 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: 350W  
 Protection:  
 Over voltage: Latch off, rated voltage 140% max.  
 Short circuit & overcurrent: Auto recovery  
 Over temperature: Latch off or auto recovery  
 Brown-out Set at 70VAC  
 Temperature coefficient: All outputs  $\pm 0.04\%$  / $^{\circ}C$  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 $^{\circ}C$  to +70 $^{\circ}C$   
 Storage temperature: -40 $^{\circ}C$  to +85 $^{\circ}C$   
 Relative humidity: 5% to 95% non-condensing  
 Derating: Derate from 100% at +50 $^{\circ}C$  linearly to 50% at +70 $^{\circ}C$ , forced-air cooling conditions  
 Derate from 100% at +40 $^{\circ}C$  linearly to 50% at +60 $^{\circ}C$ , convection cooling

## FSP350-F35 A SERIES



**RoHS**  
**CE**

**SAFETY STANDARD APPROVAL (To be confirmed)**

**CB**

**IEC 60950-1, IEC 62368-1**

**SP**  
C US

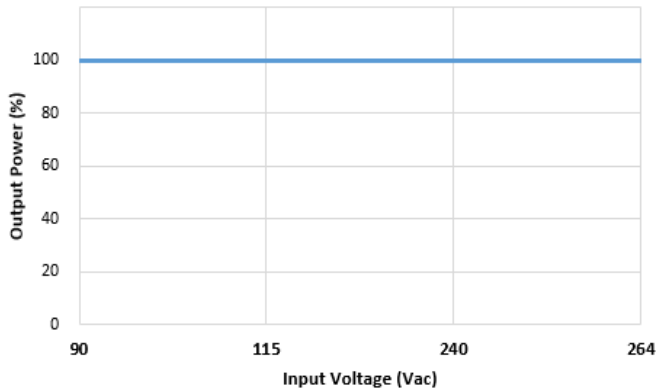
**UL 62368-1,**

**CAN/CSA 22.2 No.62368-1-14**

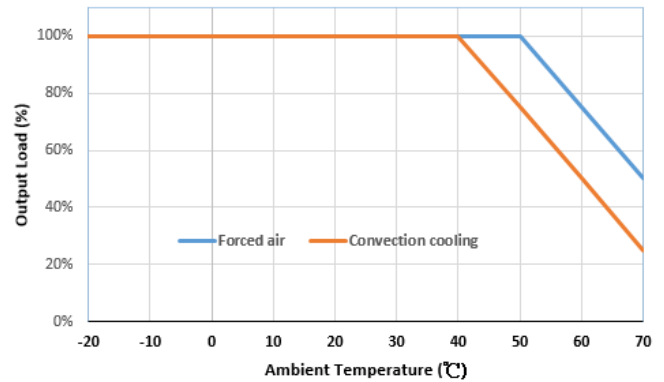
## GENERAL SPECIFICATIONS

Power factor: 0.98 minimum @ 115VAC & 100% load  
 0.9 minimum @ 230VAC & 100% load  
 Efficiency: See rating chart.  
 Power turn-on time: 2.0 Sec maxi.  
 Hold-up time: 35 mS minimum at 115 VAC @ 200W  
 10 mS minimum at 115VAC @ 350W  
 Line regulation:  $\pm 0.5\%$  maximum at full load  
 Inrush current: 50 A @ 115 VAC, at 25 $^{\circ}C$  cold start  
 100 A @ 230 VAC, at 25 $^{\circ}C$  cold start  
 Operating altitude: 5000 meters above sea level  
 Withstand voltage: 3000 VAC from input to output,  
 1500 VAC from input to ground,  
 1500 VAC from output to ground  
 Isolation Resistance: Input to output 100M ohm @ 500Vdc, 25 $^{\circ}C$   
 MTBF: 200,000 hours mini. at full load at 25 $^{\circ}C$   
 ambient, calculated per BELL CORE 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,  $\pm 8$  KV air and  $\pm 4$  KV contact  
 EN61000-4-3: Radiated immunity, 3 V/m  
 EN61000-4-4: Fast transient/burst,  $\pm 1$  KV  
 EN61000-4-5: Surge,  $\pm 1$  KV diff.,  $\pm 2$  KV com  
 EN61000-4-6: Conducted immunity, 3 Vrms  
 EN61000-4-8: Magnetic field immunity, 1 A/m  
 EN61000-4-11: Voltage dip immunity,  
 30% reduction for 500 ms, criteria A  
 >95% reduction for 10 ms, criteria A  
 >95% reduction for 5000 mS, criteria B

### INPUT VOLTAGE DERATING CURVE



### OUTPUT POWER DERATING CURVE



### OUTPUT VOLTAGE/CURRENT RATING CHART

Model	Output							Efficiency 115 / 230 Vac (typical)
	V1	Min. Load	Max. Current convection	Max. Current 18 CFM	Load Regulation	Ripple & Noise <sup>(1)</sup>	Max. Power <sup>(2)</sup>	
FSP350-F35-A12	12 V	0 A	16.66 A	29.16 A	±3%	120 mV	200 W / 350 W	90 / 93%
FSP350-F35-A18	18 V	0 A	11.11 A	19.44 A	±3%	180 mV	200 W / 350 W	90 / 93%
FSP350-F35-A24	24 V	0 A	8.33 A	14.58 A	±3%	240 mV	200 W / 350 W	90 / 93%
FSP350-F35-A54	54 V	0 A	3.70 A	6.48 A	±3%	540 mV	200 W / 350 W	90 / 93%

**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 10 μF electrical capacitor in parallel with a 0.1 μF ceramic capacitor across the output.
- The first value of maximum current is at convection cooling. The second value is with 18 CFM forced air provided by user.

### MECHANICAL SPECIFICATIONS

**NOTES:**

- Dimensions **76.2x127x34** mm
- AC input (CN1):  
JST B2P3-VH or EQU
 

Pin 1	Line
Pin 2	Neutral
Pin 3	Neutral
- DC output (CN2): **24V & 54V** models  
J.S.T B6P-VH or EQU
 

Pin 1, 2, 3	+V
Pin 4, 5, 6	Return

DC output (CN2, CN3): **12V & 18V** models  
M3 screw connectors
- Fan driver:  
MOLEX 22-27-2021 or EQU
 

Pin 1	+12V
Pin 2	RTN
- CN4 Voltage sense +/- (pin 1/pin 2)
- Ground pad: 8 x 6.35 x 0.8 mm

Weight: 290 grams (0.639 lbs.) approx.