



FSP350-F35 A Series

FEATURES

- Class-I design
- Design to meet IEC 60950-1, IEC 62368-1 safety standard
- Low profile 3 x 5 x 1.34 inches
- Input power less than 0.5W at 0.2W load condition.
- EN 55032 Class B radiated emission
- High altitude 5000 meters operation
- Fan driver 12V

SAFETY STANDARD APPROVAL



DESCRIPTION

This AC-DC switching power supplies in a package of 3 x 5 inches is a Class-I PSU and input power less than 0.5W at load condition less than 0.2W. This PSU is capable of delivering 350 watts continuous power at 16 CFM forced air cooling or 200 watts continuous power at convection cooling. Product is suitable for audio & video, information, networking and PoE application.

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
Standby power consumption	≤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:	Less than 140% of output voltage & Latch off
Short circuit & Over current:	Auto recovery
Over temperature:	Latch off or auto recovery
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

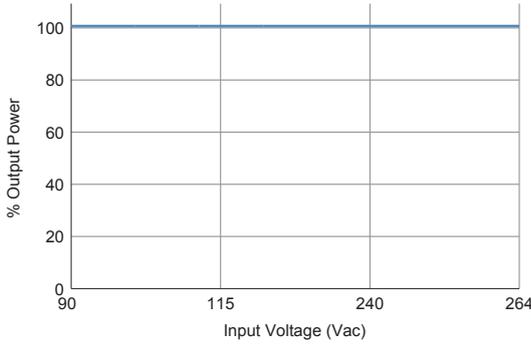
ENVIRONMENTAL SPECIFICATIONS

Operating temperature:	-20°C~+70°C
Storage temperature:	-40°C~+85°C
Relative humidity:	5% to 95% non-condensing
Derating:	Refer to the de-rating curve. Derate from 100% at 50°C linearly to 50% at 70°C for forced air condition. Derate from 100% at 40°C linearly to 50% at 60°C for convection cooling condition.

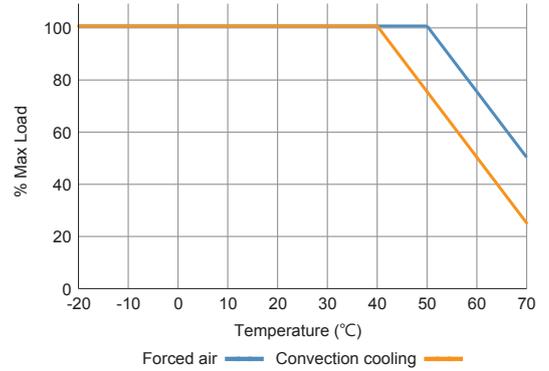
GENERAL SPECIFICATIONS

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:	±0.5% maximum at full load
Inrush current:	60 A @ 115 VAC, at 25°C cold start, 350W 120 A @ 230 VAC, at 25°C cold start, 350W
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°C
MTBF:	400,000 hours mini. 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, 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

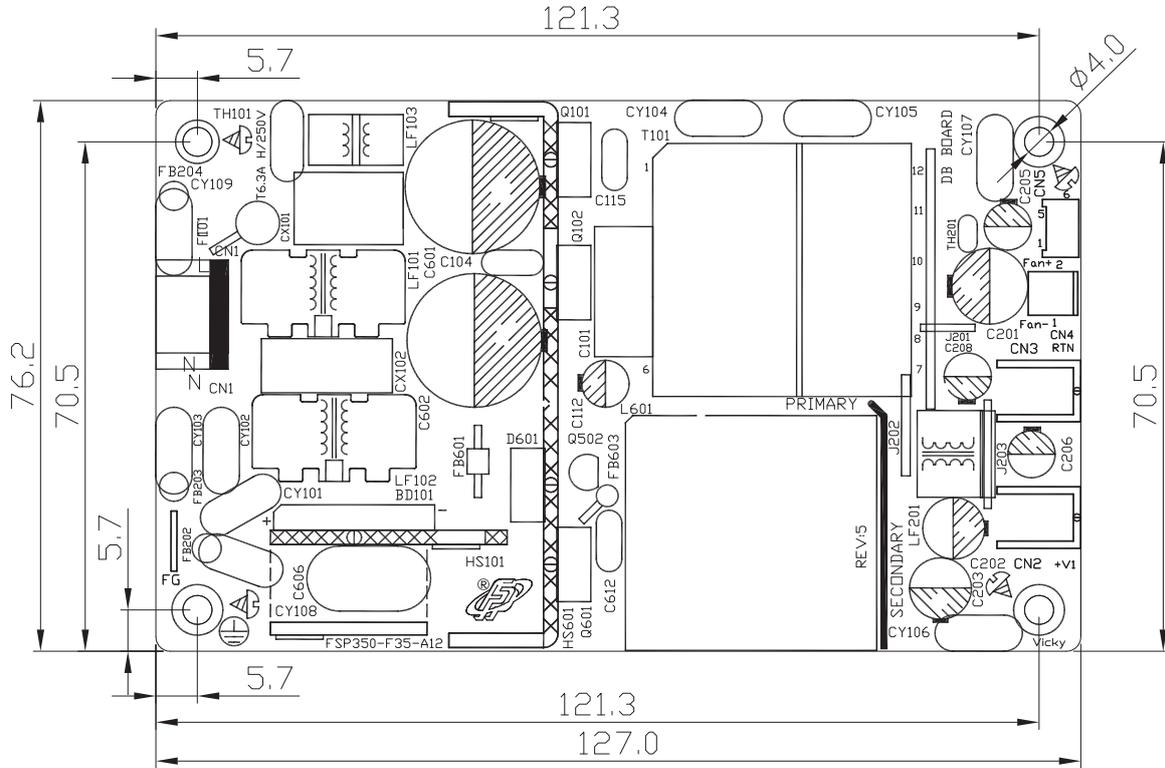
Model	Output							Efficiency 115/230 Vac (typical)
	Voltage	Min. Load	Max. Current convection	Max. Current 16 CFM	Load Regulation	Ripple & Noise	Max. Power	
FSP350-F35-A12	12 V	0 A	16.7 A	29.2 A	±3%	120 mV	200 W / 350 W	88 / 92%
FSP350-F35-A18	18 V	0 A	11.1 A	19.5 A	±3%	180 mV	200 W / 350 W	88 / 92%
FSP350-F35-A24	24 V	0 A	8.3 A	14.6 A	±3%	240 mV	200 W / 350 W	88 / 93%
FSP350-F35-A54	54 V	0A	3.7 A	6.5 A	±3%	540 mV	200 W / 350 W	89 / 94%

NOTES:

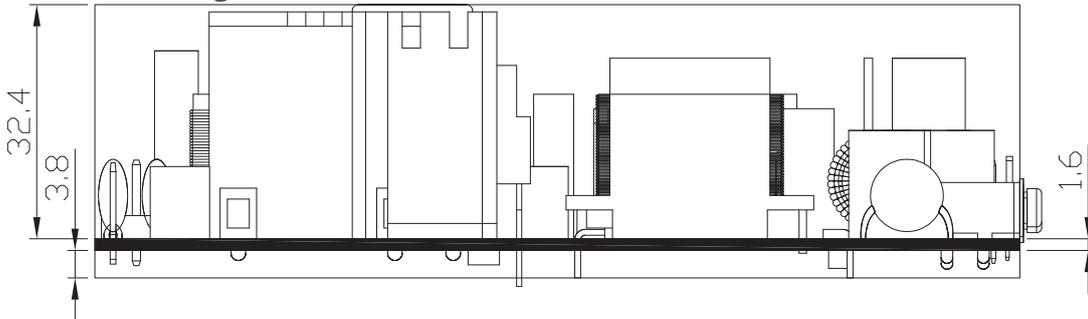
1. Ripple and noise is maximum peak to peak voltage value measured at output within 20 MHz bandwidth, at rated line voltage and output load ranges, and with a 10 μ F electrical capacitor in parallel with a 0.1 μ F ceramic capacitor across the output.
2. The first value of maximum current is at convection cooling. The second value is with 16 CFM forced air provided by user.

MECHANICAL SPECIFICATIONS

FSP350-F35-A12 / FSP350-F35-A18



PCB Height Limit: 32.4mm MAX



Pin assignment:
Input connector (IN1):

Pin No.	Function	Wafer
1	Line	JST B2P3-VH or EQU
2	Neutral	
3	Neutral	

Output connector (CN2): 24V & 54V models

Pin No.	Function	Wafer
1, 2, 3	+V	J.S.T B6P-VH or EQU
4, 5, 6	+V RTN	

Fan driver (CN3):

Pin No.	Function	Wafer
1	RTN	MOLEX 22-27-2021 or EQU
2	+12V	

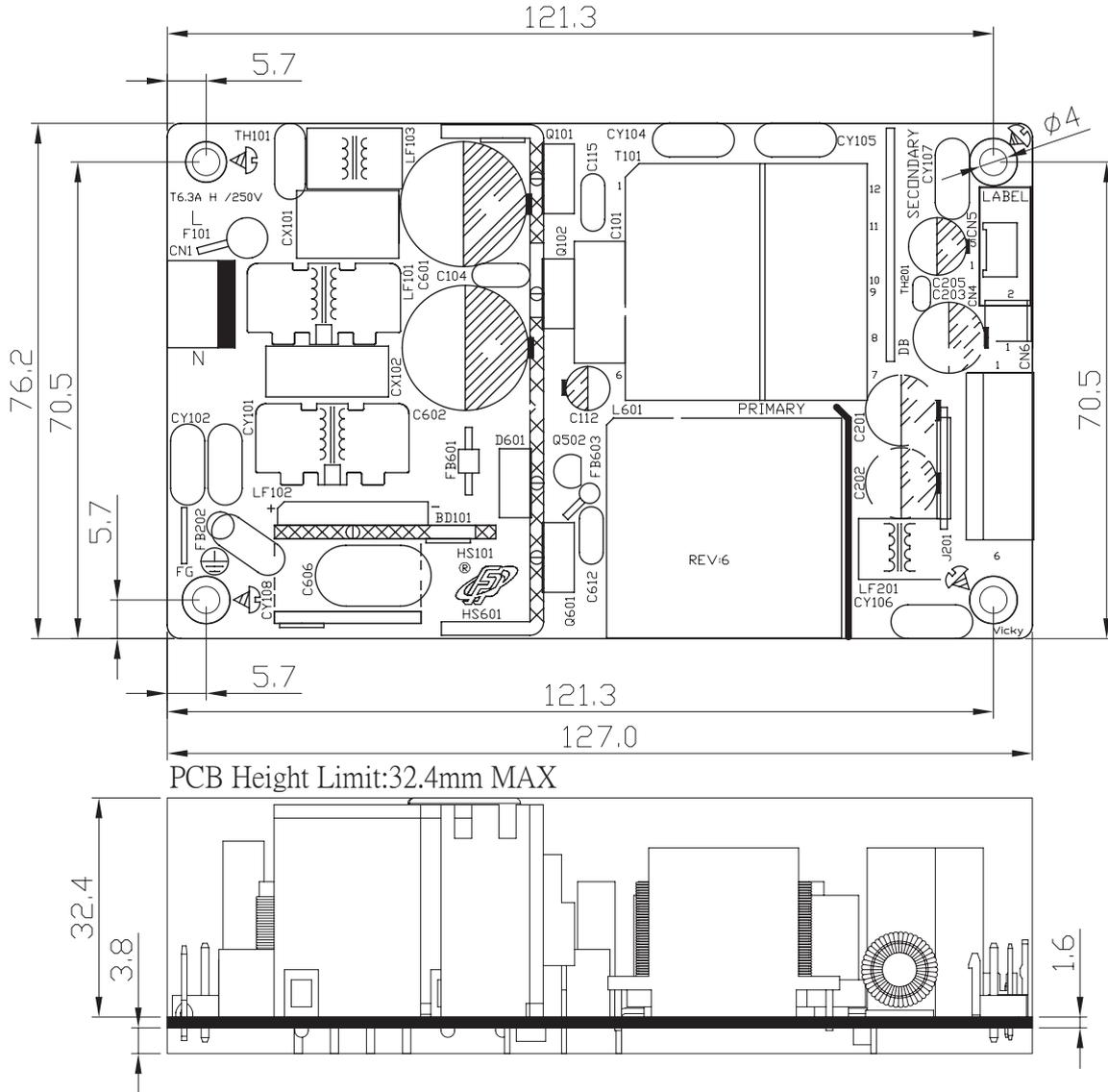
DC output (CN2, CN3): 12V & 18V models
M3 screw connectors

NOTES:

1. Dimension shown in mm.
2. Optional CN4 Voltage sense +/- (pin 1/pin 2)
3. Ground pad: 8 x 6.35 x 0.8 mm
4. To ensure compliance with B (conducted emission), Please ground the three screw holes with exposed PCB properly with metallic standoffs to chassis .
5. Weight: 303 grams (0.667 lbs.) approx.

MECHANICAL SPECIFICATIONS

FSP350-F35-A24 / FSP350-F35-A54



PCB Height Limit:32.4mm MAX

Pin assignment:
Input connector (IN1):

Pin No.	Function	Wafer
1	Line	JST B2P3-VH or EQU
2	Neutral	
3	Neutral	

Output connector (CN2): 24V & 54V models

Pin No.	Function	Wafer
1, 2, 3	+V	J.S.T B6P-VH or EQU
4, 5, 6	+V RTN	

Fan driver (CN3):

Pin No.	Function	Wafer
1	RTN	MOLEX 22-27-2021 or EQU
2	+12V	

DC output (CN2, CN3): 12V & 18V models
M3 screw connectors

NOTES:

1. Dimension shown in mm.
2. Optional CN4 Voltage sense +/- (pin 1/pin 2)
3. Ground pad: 8 x 6.35 x 0.8 mm
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