

DESCRIPTION

This series is a compact 2x4 inches, open PCB constructed AC-DC switching power supplies are capable of delivering 100 watts of continuous output power at convection cooling.

FEATURES

- Compact size 2" × 4" × 1.26"
- High power density 10 W/cubic inch
- EN55011 /55022 class B emissions
- Low earth leakage current 150uA
- OVP, OCP, OTP protection
- Efficiency 89% typical for single output models

INPUT SPECIFICATIONS

Input voltage:	90-132 /180-264 VAC (Universal mains supply operation)
Input frequency:	47-63 Hz
Input current:	1.9 A (rms) for 100-120 VAC 1.1 A (rms) for 200-240 VAC
Earth leakage current:	150 µA max. @ 264 VAC, 63 Hz

OUTPUT SPECIFICATIONS

Output voltage/current:	See rating chart.
Total output power:	100 watts maximum
Ripple and noise:	150 mV peak to peak on 5.0 V model, 1% peak to peak on other models
Protection:	
OVP	Latch off
OCP & Shorted	Auto recovery
OTP	Latch off
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:	-0°C to +70°C
Storage temperature:	-20°C to +85°C
Relative humidity:	5% to 95% non-condensing
Derating:	Derate from 100% at +50°C linearly to 50% at +70°C,
Cooling:	Convection

FSP100 M1 SERIES



RoHS



SAFETY STANDARD APPROVALS



UL 60601-1, CSA C22.2 No. 601.1
File No. E178020



TÜV EN 60601-1

GENERAL SPECIFICATIONS

Switching frequency:	100 KHz (typical)
Efficiency:	Refer to rating table
Hold-up time:	12 ms minimum at 110 VAC
Line regulation:	±0.2% maximum at full load
Inrush current:	40 A @ 115 VAC or 80 A @ 230 VAC, at 25°C cold start
Withstand voltage:	5600 VDC from input to output, 2100 VDC from input to ground, 700 VDC from output to ground (To verify AC strength, get correct test Method to avoid PSU damaged)
MTBF:	250,000 hours at full load at 25°C ambient temperature, calculated per MIL-HDBK-217F
EMC Performance	
EN55011 /EN55022:	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
EN61000-3-3:	Line flicker
EN61000-4-2:	ESD, ±8 KV air and ±6 KV contact
EN61000-4-3:	Radiated immunity, 3 V/m
EN61000-4-4:	Fast transient/burst, ±2 KV
EN61000-4-5:	Surge, ±1 KV diff., ±2 KV com.
EN61000-4-6:	Conducted immunity, 3 Vrms
EN61000-4-8:	Magnetic field immunity, 3 A/m
EN61000-4-11:	Voltage dip immunity, 30% reduction for 500 ms (criteria A @ 230 VAC, criteria B @ 100 VAC), 60% reduction for 100 ms (criteria B), >95% reduction for 10 ms (Criteria A)

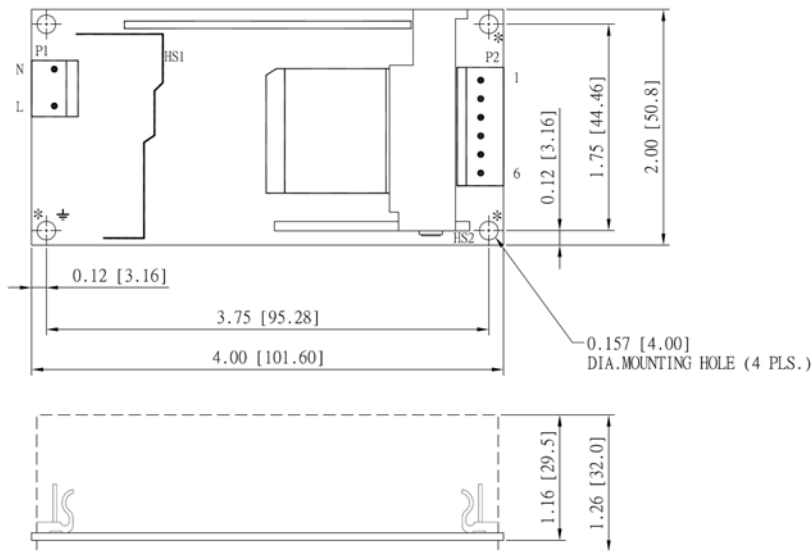
OUTPUT VOLTAGE/CURRENT RATING CHART

Model	Output						Average Active Efficiency (typical) @ 115/230 Vac
	V1	Min. Current	Max. Current	Tol.	Ripple & Noise ⁽¹⁾	Max. Power	
FSP100-1K00M1	5 V	0 A	20.00 A	±2 %	150 mV	100 W	85/88%
FSP100-1K20M1	12 V	0 A	8.34 A	±2 %	120 mV	100 W	86/89%
FSP100-1K30M1	15 V	0 A	6.70 A	±2 %	150 mV	100 W	86/89%
FSP100-1K31M1	18 V	0 A	5.56 A	±2 %	180 mV	100 W	86/89%
FSP100-1K40M1	24 V	0 A	4.20 A	±2 %	240 mV	100 W	87/90%
FSP100-1K50M1	28 V	0 A	3.58 A	±2 %	280 mV	100 W	87/90%
FSP100-1K70M1	36 V	0 A	2.78 A	±2 %	360 mV	100 W	87/89%
FSP100-1K80M1	48 V	0 A	2.10 A	±2 %	480 mV	100 W	87/89%

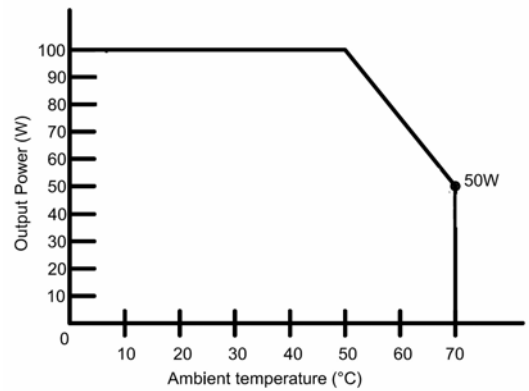
Note:

1. Safety approvals are for PCB form only. Please have suffix "-C" if cover fitted is ordering. Ex: FSP100-1K00M1-C.
2. 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 tantalum capacitor in parallel with a 0.1 µF ceramic capacitor across the output.

MECHANICAL SPECIFICATIONS



OUTPUT POWER DERATING CURVE



NOTES:

1. Dimensions shown in inches [mm]
2. Tolerance 0.02 [0.5] maximum
3. Connector P1: Molex header 09-65-2038 or equivalent, mating with Molex housing 09-50-1031 or equivalent.
4. Connector P2: Molex header 09-65-2068 or equivalent, mating with Molex housing 09-50-1061 or equivalent.
5. To ensure compliance with level B emissions, connect the three "*" marked mounting holes with metallic standoffs to chassis.

CONNECTOR PIN CHART

Connector	P1		P2					
	N	L	1	2	3	4	5	6
Polarity	Neutral	Line	V1 Return			+V1		

Weight: 190 grams (0.44 lbs.) approx.