

## FSP045M-B24 Series

### FEATURES

- Compact size 2 x 4 x 1.12 inches
- Certified medical safety IEC 60601-1
- Wide operation voltage 85-264 VAC
- Wide operation temperature -20°C to +70°C
- No load power consumption less than 0.3W
- High altitude 5000 meters operation
- Meet EN55011 and FCC Class B
- Over voltage protection
- Over current protection
- Over temperature protection
- Compliant with RoHS requirement

### SAFETY STANDARD APPROVAL



### DESCRIPTION

The FSP045M-B24 series is Class-I design in 2 x 4 inches, open PCB constructed, AC/DC switching power supplies are capable of delivering 45 watts maximum (5V at 35 watts) of continuous output power at convection cooling. All models meet EN55011 and FCC class B emission limits, and are designed for medical applications.

### INPUT SPECIFICATIONS

Input voltage:	85-264 VAC
Input frequency:	47-63 Hz
Input current:	< 1.2 A (rms) for 115 VAC < 0.7 A (rms) for 230 VAC
Earth leakage current:	< 250 $\mu$ A @ 264 VAC, 63 Hz
Touch current:	< 100 $\mu$ A @ 264 VAC, 63 Hz

### OUTPUT SPECIFICATIONS

Output voltage/current:	See rating chart
Maximum output power:	See rating chart
Protection:	
Over voltage:	Set at 130% to 150% of its rated output voltage.
Short circuit:	The power supply will shut down without damage and enter auto-recovery mode.
Over current:	The power supply will shut down without damage and enter auto-recovery mode.
Over temperature:	The power supply will enter into shut down while the abnormal thermal rise occurs.

### ENVIRONMENTAL SPECIFICATIONS

Operating temperature:	-20°C to +70°C
Storage temperature:	-40°C to +85°C
Operating humidity:	30% to 80% RH non-condensing
Storage humidity:	5% to 95% RH non-condensing

### GENERAL SPECIFICATIONS

Efficiency:	See rating chart
Hold-up time:	12 ms minimum at 115 VAC/60Hz
Line regulation:	$\pm$ 1% maximum at full load
Inrush current:	125 A @ 230 VAC, at 25°C cold start
Withstand voltage:	4000 VAC from input to output (2 MOPP) 1500 VAC from input to ground (1 MOPP)
MTBF:	450,000 hours at full load at 25°C ambient , calculated per MIL-HDBK-217F
EMC Performance (IEC60601-1-2)	
EN55011:	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 $\pm$ 6 KV contact
EN61000-4-3:	Radiated immunity, 10 V/m
EN61000-4-4:	Fast transient/burst, $\pm$ 2 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, 30 A/m
EN61000-4-11:	Voltage dip immunity, 30% reduction for 500 ms, 60% reduction for 100 ms, and >95% reduction for 10 ms

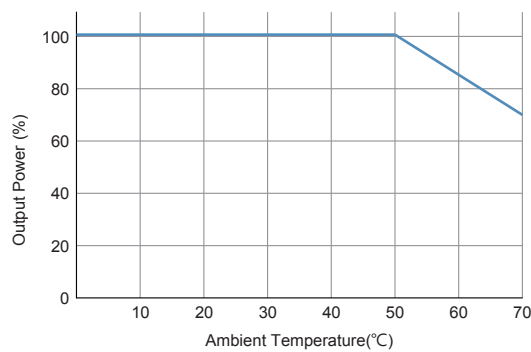
### OUTPUT VOLTAGE/CURRENT RATING CHART

Model	Output						Average Active Efficiency (typical) @ 115 / 230 VAC
	V1	Min. Current	Max. Current	Tolerance	Ripple & Noise <sup>(1)</sup>	Max. Power	
FSP035M-B24-05	5 V	0 A	7.00 A	±3%	50 mV	35 W	76% / 78%
FSP045M-B24-12	12 V	0 A	3.75 A	±3%	120 mV	45 W	85% / 87%
FSP045M-B24-15	15 V	0 A	3.00 A	±3%	150 mV	45 W	85% / 87%
FSP045M-B24-18	18 V	0 A	2.50 A	±3%	180 mV	45 W	85% / 87%
FSP045M-B24-24	24 V	0 A	1.875 A	±3%	240 mV	45 W	85% / 87%

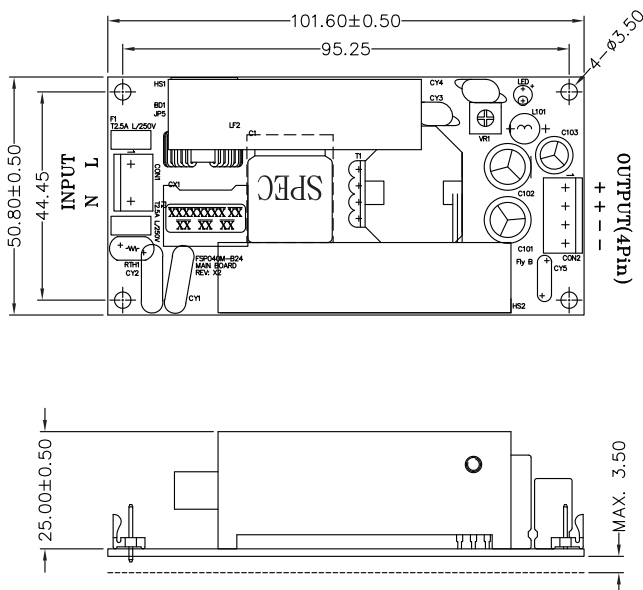
#### NOTES:

- Ripple and noise measurements shall be made with an oscilloscope of at least 20MHz bandwidth. Output shall be bypassed at the connector with a 0.1μF ceramic disk capacitor and a 47μF electrolytic capacitor to simulate system loading.

### OUTPUT POWER DERATING CURVE



### MECHANICAL SPECIFICATIONS



#### NOTES:

- Dimensions shown in mm.
- Connector CON1: JST B3P-VH or equivalent, mating with JST VHR housing and terminal SVH-21T-P1.1 or equivalent.
- Connector CON2: JST B4P-VH or equivalent, mating with JST VHR housing and terminal SVH-21T-P1.1 or equivalent.

#### PIN CHART

Pin No.	1	2	3	4
Polarity	+V1		V1 Return	