

FSP035M-B23 Series

FEATURES

- Compact size 2 x 3 x 1.2 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 FSP035M-B23 series is Class-I design in 2 x 3 inches, open PCB constructed, AC/DC switching power supplies are capable of delivering 35 watts maximum (5V at 30 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:	< 1.0 A (rms) for 115 VAC < 0.6 A (rms) for 230 VAC
Earth leakage current:	< 275 µA @ 264 VAC, 63 Hz
Touch current:	< 100 µA @ 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.
Transient response:	Maximum excursion of ±3%, load slew rate is 0.5A/us, 50% of max load changed.

ENVIRONMENTAL SPECIFICATIONS

Operating temperature:	-20°C~+70°C
Storage temperature:	-40°C~+85°C
Operating humidity:	30% to 80% RH non-condensing
Storage humidity:	5% to 95% RH non-condensing
Temperature derating:	Derate from 100% at +50°C linearly to 70% at +70°C

GENERAL SPECIFICATIONS

Efficiency:	See rating chart
Hold-up time:	12 ms minimum at 115 VAC/60Hz
Line regulation:	±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, ±8 KV air and ±6 KV contact
EN61000-4-3:	Radiated immunity, 10 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, 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

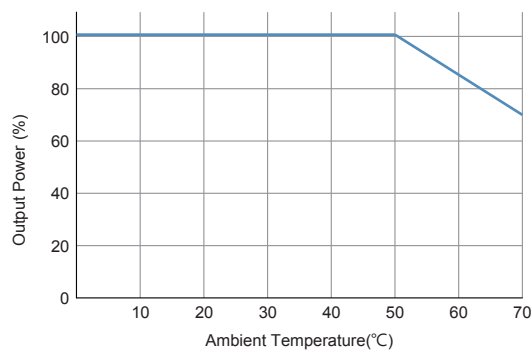
OUTPUT VOLTAGE/CURRENT RATING CHART

Model	Output						Average Active Efficiency (typical) @ 115 / 230 VAC
	V1	Min. Current	Max. Current	Tolerance	Ripple & Noise ⁽¹⁾	Max. Power	
FSP030M-B23-05	5 V	0 A	6.00 A	±3%	100 mV	30 W	76% / 78%
FSP035M-B23-12	12 V	0 A	2.92 A	±3%	120 mV	35 W	85% / 87%
FSP035M-B23-15	15 V	0 A	2.34 A	±3%	150 mV	35 W	85% / 87%
FSP035M-B23-18	18 V	0 A	1.95 A	±3%	180 mV	35 W	85% / 87%
FSP035M-B23-24	24 V	0 A	1.46 A	±3%	240 mV	35 W	85% / 87%

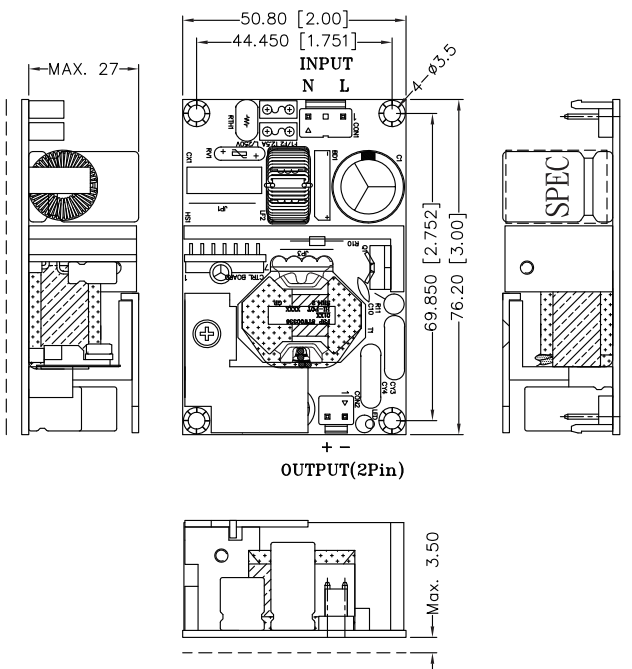
NOTES:

1. 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 [inches].
- Tolerance 0.5 [0.02] maximum.
- Input connector CON1: JST B3P-VH or equivalent, mating with housing JST VHR series & terminal SVH-21T-P1.1 or equivalent.
- Output connector CON2: JST B2P-VH or equivalent, mating with housing JST VHR series & terminal SVH-21T-P1.1 or equivalent.

PIN CHART

Connector	CON1			CON2	
	1	2	3	1	2
Polarity	Live	NC	Neutral	V1 Return	+V1