Sparkle Power Inc

35 WATT MEDICAL POWER SUPPLIES

DESCRIPTION

This 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.

FSP035M-B23 SERIES

RoHS

CE

FEATURES

- Compact size 2" x 3" x1.2"
- Wide operation voltage 85~264Vac
- Wide operation temperature -20℃~50℃
- No load power consumption less than 0.3W
- High altitude 5000 meters operation
- EN55011 /55022 level B emissions
- OVP, OPP, OTP protection

SAFETY STANDARD APPROVALS

EN 60601-1
IEC 60601-1
TÜV EN 60601-1

INPUT SPECIFICATIONS

Input voltage:	85-264 VAC
Input frequency:	47-63 Hz
Input current:	0.6 A (rms) for 115 VAC 0.4 A (rms) for 230 VAC
Earth leakage current	275 uA max. @ 264 VAC, 63 Hz
Touch current:	250 μA max. @ 264 VAC, 63 Hz

OUTPUT SPECIFICATIONS

Output voltage/current:	See rating chart.
Maximum output power:	See rating chart.
Ripple and noise:	See rating chart
Protection:	
OVP	Latch off
OPP & Shorted	Auto recovery
OTP:	Latch off
Temperature coefficient:	All outputs ±0.04% /℃ 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℃ to +70℃
Storage temperature:	-40℃ to +85℃
Relative humidity:	5% to 95% non-condensing
Derating:	Derate from 100% at +50℃ linearly to 70% at +70℃,

GENERAL SPECIFICATIONS

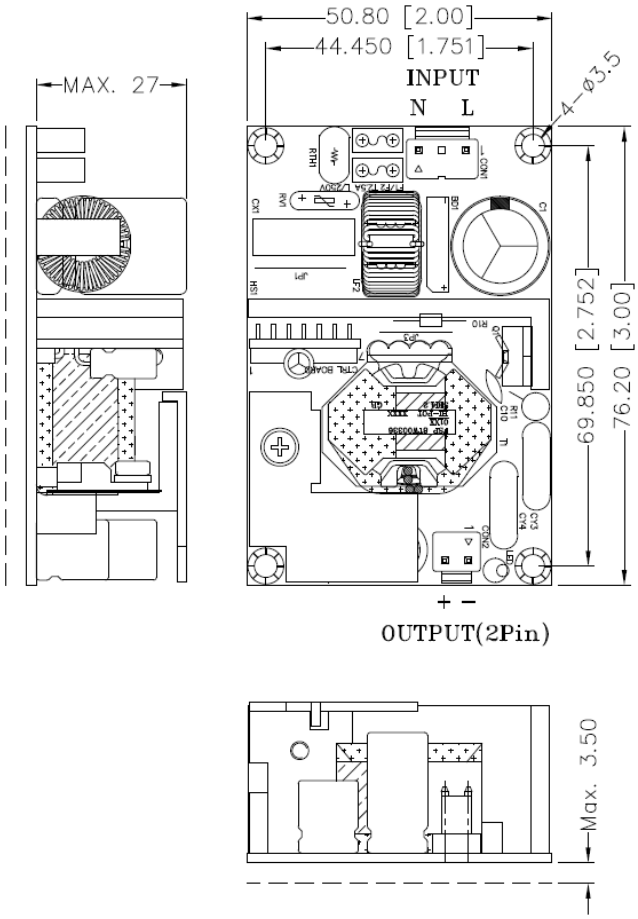
Efficiency:	See rating chart
Hold-up time:	12 ms minimum at 115 VAC
Line regulation:	±1% maximum at full load
Inrush current:	Under 125 A @ 230 VAC, at 25℃ cold start
Withstand voltage:	4000 VAC from input to output (2 MOPP) 4000 VAC from input to ground (2 MOPP) 1500 VAC from output to ground
MTBF:	450,000 hours at full load at 25℃ ambient, 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 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

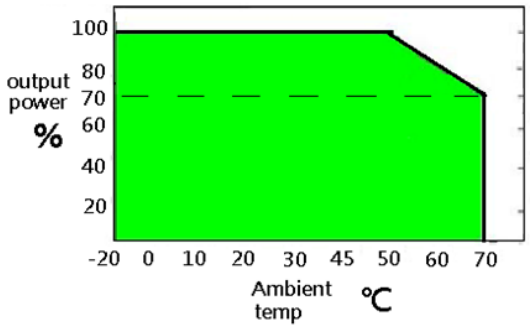
Model	Output						Efficiency (typical) 115/230 Vac
	V1	Min. load	Max. Current	Tolerance	Ripple & Noise	Max. Power	
FSP030M-B23-05	5 V	0 A	6.00 A	±3%	100 mV	30 W	76 % / 78%
FSP035M-B23-12	12 V	0 A	2.92 A	±3%	120 mV	35 W	85 % / 87%
FSP035M-B23-15	15 V	0 A	2.34 A	±3%	150 mV	35 W	87 % / 89%
FSP035M-B23-18	18 V	0 A	1.95 A	±3%	150 mV	35 W	87 % / 89%
FSP035M-B23-24	24 V	0 A	1.46 A	±3%	200 mV	35 W	87 % / 89%

NOTE:
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 47 µF electrolytic 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].Tolerance 0.02 [0.5] maximum
2. Input connector CN1: JST B3P-VH or equivalent, mating with housing JST VHR series & terminal SVH-21T-P1.1 or equivalent.
3. Output connector CN2: JST B2P-VH or equivalent, mating with housing JST VHR series & terminal SVH-21T-P1.1 or equivalent.

CONNECTOR PIN CHART

Connector	CN1			CN2	
Pin No.	1	2	3	1	2
Output	Line	---	Neutral	V1 Return	+V1

WEIGHT: 95 grams (0.21 lbs.) approx.