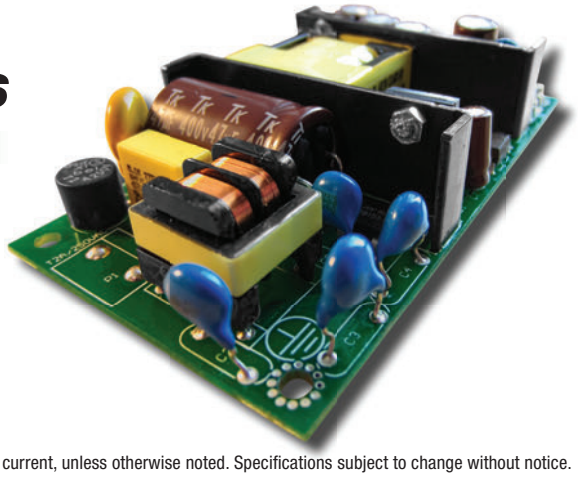
MPB-20S Series

Compact, PCB-Mount 20W, Open Frame AC/DC Power Supplies



Key Features:

- 20W Output Power
- Universal 85-264 AC Input
- EN 60950 Approved (UL)
- Compact 2 x 3.5 In Package
- Six Standard Models
- Meets EN 55022 B
- Meets EN 61000-4
- >200 kHour MTBF

Electrical Specifications

Specifications typical @ +25°C, nominal input voltage & rated output current, unless otherwise noted. Specifications subject to change without notice.

Input

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Voltage Range	Universal	85		264	VAC
		127		373	VDC
Input Frequency		47		63	Hz
Input Filter	Meets EN 55022 Class B; FCC Class B				
Input Current	See Model Selection Guide				
Inrush Current	Cold Start, 115 VAC			20.0	A Pk
	Cold Start, 230 VAC			40.0	
Safety Ground Leakage Current	264 VAC			3.5	mA

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage/Current	See Model Selection Guide				
Output Voltage Tolerance	See Note 1		±1.0		%
Line Regulation	Vin = 100 VAC to 240 VAC		±0.5		%
Load Regulation	Iout = 10% to 100%		±1.0		%
Ripple & Noise (20 MHz)	See Note 2		±1.0		%
Hold-Up Time	115 VAC		16		mSec
	230 VAC		85		
Temperature Coefficient			±0.05		%/°C
Short Circuit Protection	Hiccup Mode (Autorecovery)				
Overload Protection			150		%

General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	Input to Output	3,000			VAC
Isolation Resistance	500 VDC		1,000		MΩ
Isolation Capacitance			220		pF
EMI/RFI	Conducted	EN 55022; EN 61000-3-2, -3			
EMC Compliance	Electrostatic Discharge (ESD)	IEC/EN 61000-4-2, -6, -8, -11			
	RF Field Susceptibility	IEC/EN 61000-4-3			
	Electrical Fast Transients/Bursts On Mains	IEC/EN 61000-4-4			
	Surge	IEC/EN 61000-4-5			
Switching Frequency	Fixed		67		kHz

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	0	+25	+40	°C
Storage Temperature Range		-20		+85	°C
Cooling	Free Air Convection (See Derating Curve)				
Humidity	RH, Non-condensing			93	%

Physical

Size	3.50 x 2.00 x 1.00 Inches (88.92 x 50.08 x 25.40 mm)
Weight	3.52 Oz (0.100 kg)

Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	300			kHours
Safety Standards	UL 60950, EN 60950				
Vibration	Sinusoidal 5~500 Hz, 3.0 Grms, Period of 30 min each along X, Y & Z Axis				

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Model Selection Guide

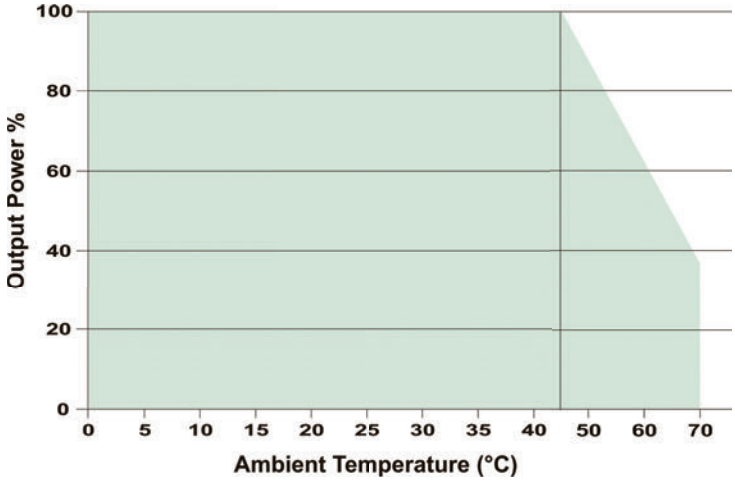
Model Number	Input		Output			Max Output Power (W)	Max Output Capacitance (μF)	Efficiency (%, Typ)
	Current (A)		Voltage (VDC)	Current (A)				
	115 VAC	230 VAC		Rated	% Min.			
MPB-20S-03	0.44	0.24	3.3	4.40	0.00	14.5	4,400	68
MPB-20S-05	0.44	0.24	5.0	4.40	0.00	22.0	4,400	75
MPB-20S-09	0.44	0.24	9.0	2.45	0.00	22.0	2,530	79
MPB-20S-12	0.44	0.24	12.0	1.80	0.00	22.0	2,200	81
MPB-20S-15	0.44	0.24	15.0	1.40	0.00	22.0	1,400	83
MPB-20S-24	0.44	0.24	24.0	0.92	0.00	22.0	950	83

Other Models May Be Available. Contact The Factory For Details

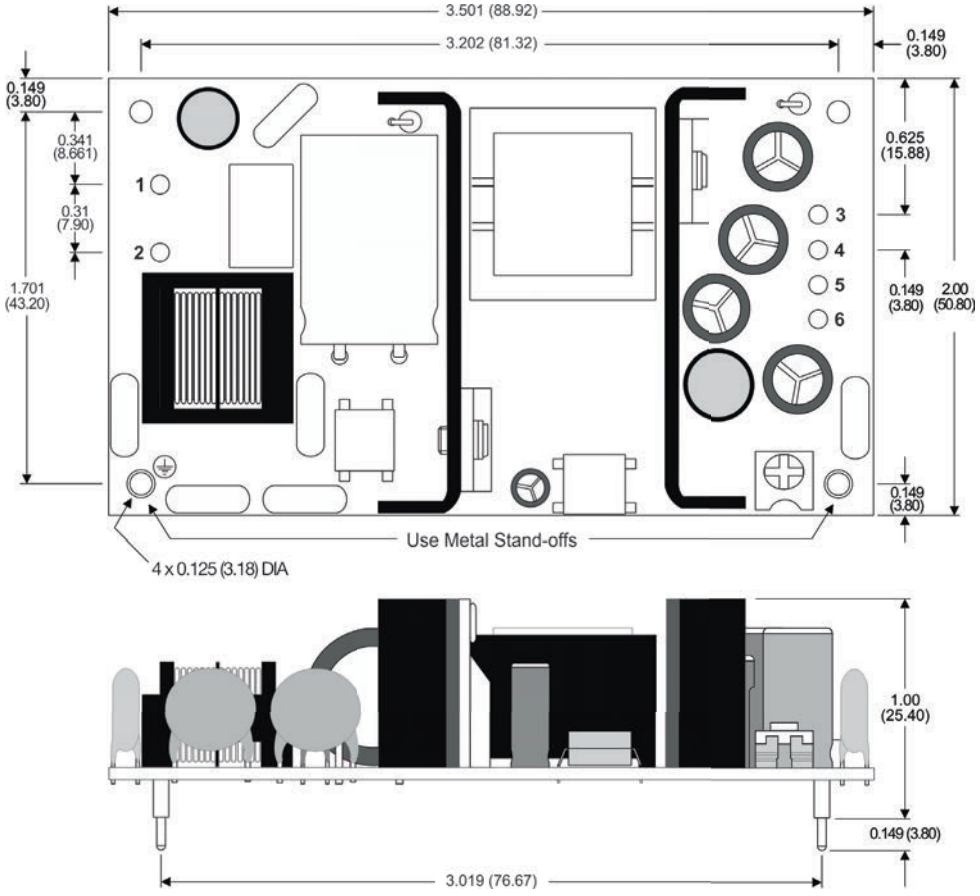
Notes:

1. Output voltage tolerance is measured at nominal input and 75% load.
2. Output ripple is measured at 20 MHz bandwidth using 0.1 μF and 10 μF capacitors connected in parallel as close to the power supply terminals as possible.
3. These units will operate at no load without damage. For most applications however, **MPD** recommends that a minimum load always be used. Contact the factory for more information.
4. Each unit includes an input fuse (250V/2A). Since this fuse is not field replaceable, it is recommended that an external fuse of the same size be used on the input of the power supply for protection.

Derating Curve



Mechanical Dimensions



Pin Connections

Pin	Description
1	AC-Neutral
2	AC-Line
3	+V Output
4	+V Output
5	-V Output
6	-V Output

Safety Ground:
The mounting holes marked "Use metal standoffs" should be connected to the system earth ground via metal spacers or a cable. The input side mounting hole marked "FG" provides the safety earth ground for the unit. This connection should be locked to prevent possible loosening. Connecting the output side mounting hole improves EMI.

Notes:

- All dimensions are typical in inches (mm)
- Tolerance x.xx = ±0.02 (±0.50)

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