MPM AC-DC Enclosed Power Supplies 25W

RoHS Compliant

UL62368-1 EN62368-1 GB4943.1 IEC62368-1 BS EN 62368-1

Features

- 85 - 305V AC or 100 - 430V DC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range: -30°C to +70°C
- Up to 83% efficiency
- No-load power consumption < 0.5W
- High I/O isolation test voltage up to 4000V AC
- Output short circuit, over-current, over-voltage protection
- Over-voltage class III (designed to meet EN61558)
- Operating up to 5000m altitude
- 3 years warranty

MPM25-23Bxx series is an enclosed AC-DC switching power supply. It features universal AC input and at the same time accepts DC input voltage, cost-effective, low no load power consumption, high efficiency and high reliability. These converters offer excellent EMC performance and meet IEC/EN61000-4, CISPR32/EN55032, IEC/UL/EN62368, GB4943 standards and they are widely used in areas of industrial, LED, street light control, electricity, security, telecommunications, smart home etc.

Selection Guide

Part Number	Output Power (W)	Nominal Output Voltage and Current (Vo/Io)	Output Voltage Adjustable Range (V)	Efficiency at 230VAC (%) Typ.	Max. Capacitive Load (μF)
MPM25-23B05	25	5V/5A	4.5-5.5	81	4000
MPM25-23B12	25.2	12V/2.1A	10.8-13.2	85	3000
MPM25-23B15	25.5	15V/1.7A	13.5-16.5	86	2000
MPM25-23B24	26.4	24V/1.1A	22-27.6	87	1000
MPM25-23B48	27.36	48V/0.57A	42-54	88	500

Input Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input Voltage Range	AC input		85		305	V AC
	DC input		100		430	V DC
Input Voltage Frequency			47	--	63	Hz
Input Current	115V AC		--	--	0.6	A
	230V AC		--	--	0.34	
Inrush Current	115V AC	Cold start	--	20	--	
	230V AC		--	40	--	
Leakage Current	277V AC		<0.5mA			
Hot Plug			Unavailable			

Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy	Full load range	5V	--	±2	--	%
		12V/15V/24V/48V	--	±1	--	
Line Regulation	Rated load	5V	--	±0.5	±1	
		12V/15V/24V/48V		±0.5	--	
Load Regulation	0%-100% load	5V		±1	±2	
		12V/15V/24V/48V	--	±0.5	±1	
Ripple & Noise*	20MHz bandwidth (peak-peak value)	5V/12V/15V/24V	--	--	100	mV
		48V	--	--	120	
Temperature Coefficient			--	±0.03	--	%/°C
Minimum Load			0	--	--	%
Stand-by Power Consumption	230V AC	5V/12V/15V/24V	--	--	0.3	W
		48V	--	--	0.5	
Start-up Delay Time			--	300	--	ms
Hold-up Time	115V AC		--	8	--	
	230V AC		--	60	--	
Short Circuit Protection	Recovery time < 5s after the short circuit disappear.		Hiccup, continuous, self-recovery			
Over-current Protection			110%-300% Io, self-recovery			
Over-voltage Protection	5V		≤7.75VDC (Output voltage hiccup, self-recovery)			
	12V		≤16.2VDC (Output voltage hiccup, self-recovery)			
	15V		≤20.25VDC (Output voltage hiccup, self-recovery)			
	24V		≤32.4VDC (Output voltage hiccup, self-recovery)			
	48V		≤60VDC (Output voltage hiccup, self-recovery)			

Note: *The “Tip and barrel method” is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor, please refer to Enclosed Switching Power Supply Application Notes for specific information.

General Specifications

Item		Operating Conditions	Min.	Typ.	Max.	Unit
Isolation	Input - ⏚	Electric strength test for 1min., leakage current <10mA	2000	--	--	V AC
	Input-output		4000	--	--	
	Output - ⏚		1250	--	--	
Insulation Resistance	Input - ⏚	At 500V DC	100	--	--	MΩ
	Input-output		100	--	--	
	Output - ⏚		100	--	--	

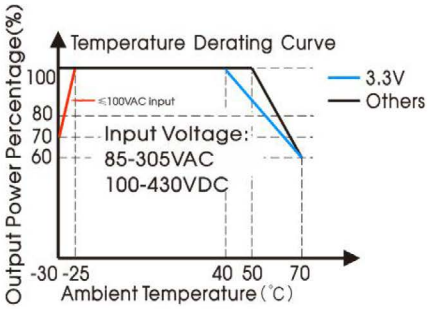
Item	Operating Conditions			Min.	Typ.	Max.	Unit
Operating Temperature				-30	--	+70	°C
Storage Temperature				-40	--	+85	
Storage Humidity	Non-condensing			--	--	95	%RH
Operating Humidity				20	--	90	
Switching Frequency				--	65	--	kHz
Power Derating	Operating temperature derating	85VAC-100VAC	-30°C to -25°C	6	--	--	%/°C
		Others	+50°C to +70°C	2	--	--	
	Input voltage derating	85V AC-100V AC		1.33	--	--	%/V AC
		277V AC - 305V AC		0.72	--	--	
Safety Standard				IEC/UL62368-1, GB4943.1, IS13252 (Part1) safety approved & EN62368-1, BS EN 62368-1 (Report)			
Safety Class				CLASS I			
MTBF	MIL-HDBK-217F@25°C			>450,000 h			

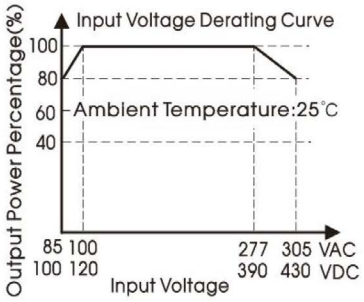
Mechanical Specifications	
Case Material	Metal (AL5052, SGCC)
Dimensions	80mm × 55mm × 25mm
Weight	115g (Typ.)
Cooling Method	Free air convection

EMC Specifications

Emissions	CE	CISPR32/EN55032 CLASS B	
	RE	CISPR32/EN55032 CLASS B	
Immunity	ESD	IEC/EN 61000-4-2 Contact ±6KV/Air ±8KV	perf. Criteria A
	RS	IEC/EN 61000-4-3 10V/m	perf. Criteria A
	EFT	IEC/EN 61000-4-4 ±2KV	perf. Criteria A
	Surge	IEC/EN 61000-4-5 line to line ±1KV/line to ground ±2KV	perf. Criteria A
	CS	IEC/EN61000-4-6 10 Vr.m.s	perf. Criteria A
	Voltage dip, short interruption and voltage variation	IEC/EN61000-4-11 0%, 70%	perf. Criteria B

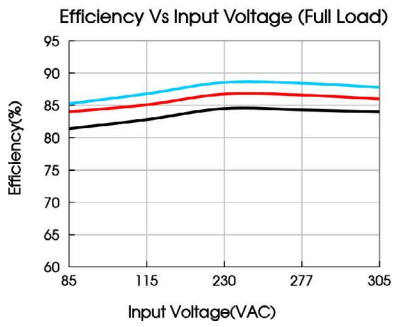
Product Characteristic Curve

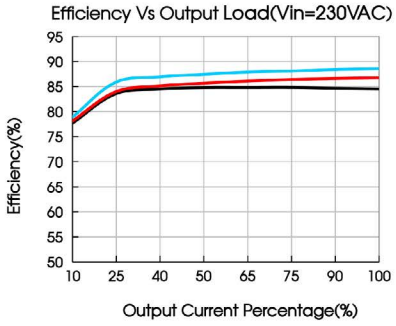




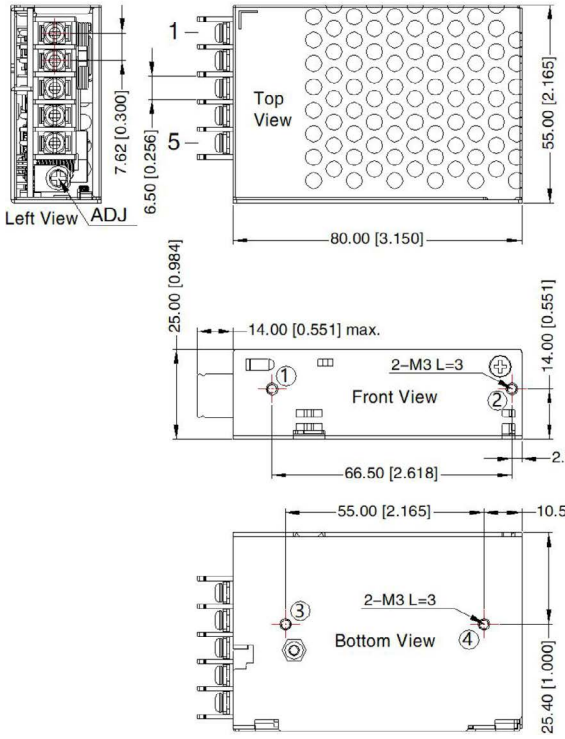
Note: 1. With an AC input between 85-100V/277-305VAC and a DC input between 100-120VDC/390-430VDC, the output power must be derated as per temperature derating curves;

2. This product is suitable for applications using natural air cooling; for applications in closed environment please consult factory or one of our FAE.





Dimensions and Recommended Layout

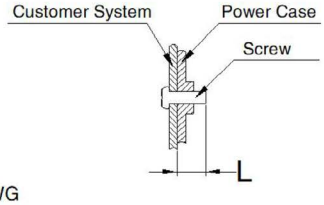


THIRD ANGLE PROJECTION

Pin-Out	
Pin	Function
1	AC(L)
2	AC(N)
3	⏚
4	-Vo
5	+Vo

①－④ any position must be connected to the earth(⏚)

Position	Screw Spec.	L(max)	Torque(max)
①－④	M3	3mm	0.4N·m



Note:
Unit: mm[inch]
Wire range: 22-12AWG
Connector tightening torque: M3, 0.4N·m
General tolerances: ± 1.00[± 0.039]

Notes:

1. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25°C, humidity<75% RH with nominal input voltage and rated output load;
2. The ambient temperature derating of 5°C/1000m is needed for operating altitude greater than 2000m;
3. All index testing methods in this datasheet are based on our company corporate standards;
4. In order to improve the efficiency at high input voltage, there will be audible noise generated, but it does not affect product performance and reliability;
5. We can provide product customization service, please contact our technicians directly for specific information;
6. Products are related to laws and regulations: see “Features” and “EMC”;
7. The out case needs to be connected to the earth of system when the terminal equipment in operating;
8. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.
9. The power supply is considered a component which will be installed into a final equipment. All EMC tests should be confirmed with the final equipment. Please consult our FAE for EMC test operation instructions.

Part Number Table

Description	Part Number
Enclosed Power Supply, 25W, 5V DC, 4A	MPM25-23B05
Enclosed Power Supply, 25W, 12V DC, 2.1A	MPM25-23B12
Enclosed Power Supply, 25W, 15V DC, 1.7A	MPM25-23B15
Enclosed Power Supply, 25W, 24V DC, 1.1A	MPM25-23B24
Enclosed Power Supply, 25W, 48V DC, 0.6A	MPM25-23B48