AC-DC Enclosed Power Supplies
35W

RoHS Compliant

Features

- Universal 85 - 305V AC or 120 - 430V DC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range: -30°C to +70°C
- Low standby power consumption, high efficiency
- High I/O isolation test voltage up to 4000V AC
- Low ripple & noise
- Output short circuit, over-current, over-voltage protection
- Safety according to IEC/EN/UL62368, EN60335, EN61558, GB4943
- Over-voltage class III (designed to meet EN61558)
- Operating altitude up to 5000m

MPM35-23Bxx 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, high reliability and double or reinforced insulation. These converters offer excellent EMC performance and meet IEC/EN61000-4, CISPR32/EN55032, IEC/UL/EN62368, EN60335, EN61558, 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)
MPM35-23B05	35	5V/7A	4.5-5.5	86	8000
MPM35-23B12	36	12V/3A	10.2-13.8	88	1500
MPM35-23B15		15V/2.4A	13.5-18	86	1000
MPM35-23B24		24V/1.5A	21.6-28.8	87	750

Input Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input Voltage Range	AC input		85		305	V AC
	DC input		120		430	V DC
Input Voltage Frequency			47	--	63	Hz
Input Current	115V AC		--	--	0.8	A
	230V AC		--	--	0.6	
Inrush Current	115V AC	Cold start	--	20	--	
	230V AC		--	40	--	
Leakage Current	277V AC		<0.75mA			
Hot Plug			Unavailable			

Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy	Full load range	5V	--	±2	--	%
		12V/15V/24V	--	±1	--	
Line Regulation	Rated load		--	±0.5	--	
Load Regulation	0%-100% load	5V	--	±1	--	
		12V/15V/24V	--	±0.5	--	
Ripple & Noise*	20MHz bandwidth (peak-peak value)	5V	--	80	--	mV
		2V/15V	--	120	--	
		24V	--	150		
Temperature Coefficient			--	±0.03	--	%/°C
Minimum Load			0	--	--	%
Stand-by Power Consumption			--	--	0.3	W
Hold-up Time	115V AC		8	--	--	ms
	230V AC		30	--	--	
Short Circuit Protection	Recovery time < 5s after the short circuit disappear.		Hiccup or turn off, continuous, self-recovery			
Over-current Protection	230V AC, Rated load	Normal temperature, High temperature	110%-300% Io, self-recovery			
		Low temperature	≥110% Io, self-recovery			
Over-voltage Protection	5V		≤6.3V DC (Hiccup, self-recovery)			
	12V		≤16.2V DC (Hiccup, self-recovery)			
	15V		≤21.75V DC (Hiccup, self-recovery)			
	24V		≤33.6V DC (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 Test	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	--	--	

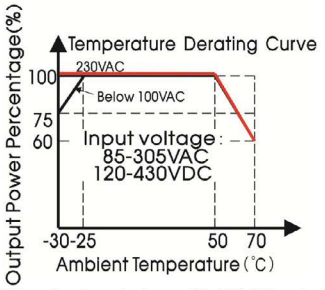
Item	Operating Conditions			Min.	Typ.	Max.	Unit
Operating Temperature				-30	--	+70	°C
Storage Temperature				-40	--	+85	
Operating Humidity	Non-condensing			20	--	90	%RH
Storage Humidity				--	--	95	
Switching Frequency				--	65	--	kHz
Power Derating	Operating temperature derating	-30°C to -25°C	85V AC-100V AC	5	--	--	%/°C
		+50°C to +70°C		2	--	--	
	Input voltage derating	85V AC-100V AC		1.33	--	--	%/V AC
		277V AC - 305V AC		0.71	--	--	
Safety Standard				Meet IEC/EN/UL62368/EN60335/EN61558/GB4943			
Safety Certification				IEC/EN/UL62368/EN60335/EN61558/GB4943			
Safety Class				CLASS I			
MTBF	MIL-HDBK-217F@25°C			>300,000 h			

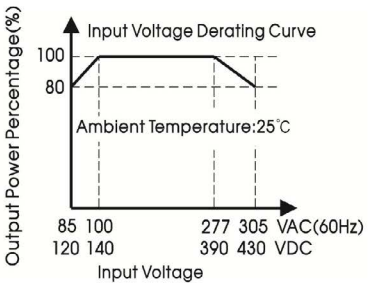
Mechanical Specifications	
Case Material	Metal (AL1100, SGCC)
Dimensions	99mm × 82mm × 30mm
Weight	170g (Typ.)
Cooling Method	Free air convection

EMC Specifications

Emissions	CE	CISPR32/EN55032 CLASS B	
	RE	CISPR32/EN55032 CLASS B	
	Harmonic current	IEC/EN61000-3-2 CLASS A	
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 ±2KV/line to ground ±4KV	perf. Criteria A
	CS	IEC/EN61000-4-6 10 Vr.m.s	perf. Criteria A
	Voltage dips, short interruptions and voltage variations immunity	IEC/EN61000-4-11 0%, 70%	perf. Criteria B

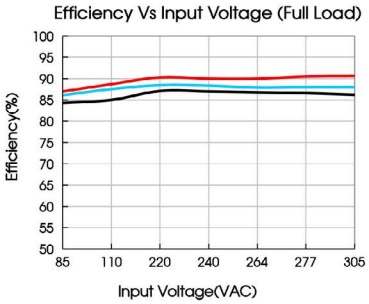
Product Characteristic Curve

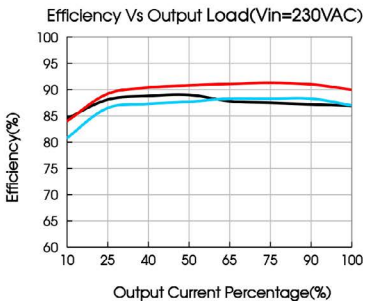




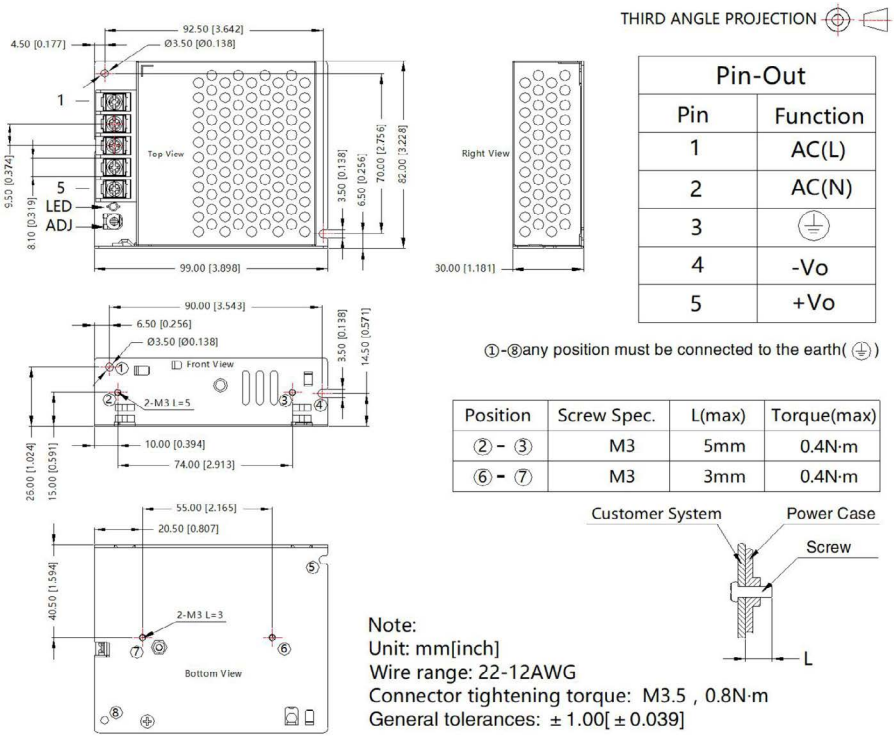
Note: 1.With an AC input voltage between 85 -100VAC and a DC input between 120-140VDC the output power must be derated as per the temperature derating curves;

2.This product is suitable for applications using natural air cooling; for applications in closed environment please consult FAE.





Dimensions and Recommended Layout



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

①-⑧any position must be connected to the earth(⏚)

Position	Screw Spec.	L(max)	Torque(max)
② - ③	M3	5mm	0.4N·m
⑥ - ⑦	M3	3mm	0.4N·m

Note:
Unit: mm[inch]
Wire range: 22-12AWG
Connector tightening torque: M3.5 , 0.8N·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 room 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.

Part Number Table

Description	Part Number
Enclosed Power Supply, 35W, 5V DC, 7A	MPM35-23B05
Enclosed Power Supply, 35W, 12V DC, 3A	MPM35-23B12
Enclosed Power Supply, 35W, 15V DC, 2.4A	MPM35-23B15
Enclosed Power Supply, 35W, 24V DC, 1.5A	MPM35-23B24