SPECIFICATION

For

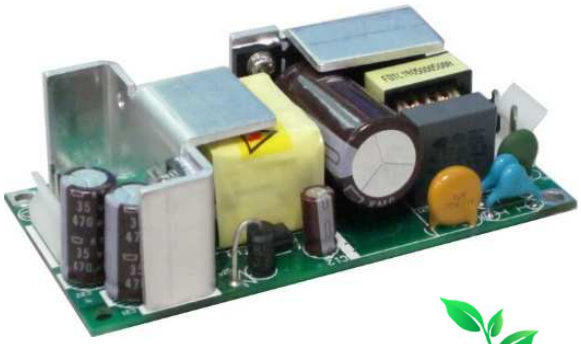
SWITCHING POWER SUPPLY

M/N: MPE-S063(-SB)-B(-C)

Revision History

Version	Revise Date	Change Items
Rev. 01	May. 07. 2019	Established.
Rev. 02	Oct. 30. 2019	Added Label diagram.

MPE-S063(-SB)-B(-C) 60W AC / DC



FEATURES

- ✓ 80W with forced air cooling and 60W with convection-cooled of single output power supply.
- ✓ Compact size 2 x 4 inch.
- ✓ Class II, also class I with optional functional ground connected.
- ✓ ITE safety standard IEC 62368-1, UL 62368-1 approved.
- ✓ Meets EMI CISPR/FCC class B.
- ✓ No-load power consumption < 0.5W.
- ✓ Optional +5Vsb & Remote on/off function.

Models & Ratings

Model Number	Wattage (Rated / Max)	Output Voltage		Min. Current	Rated Current	Max. Current
MPE-S063-B	60 W / 80 W	+12 V		0 A	5.0 A	6.66 A
MPE-S063-SB-B	60 W / 80 W	V1	+12 V	0 A	5.0 A	6.66 A
		V2	+5 V	0 A	-	0.5 A

1.Total Output Power: Max. 80W with 7 CFM force air cooling; 60W convection cooled at 50°C environment temperature.
2. With optional +5Vsb combining remote on/off function, please refer to below detail model name coding.
3. MAX output current can be sustained if the total power doesn't exceed 60W.
4. Model no. coding:

M P E – S 0 6 3 – X – B – Y – Z

(1) (2) (3) (4)

(1)

X=	Output set
blank	Single output
SB	Dual output (with +5Vsb & remote on/off function)

(2)

B=	62368-1 Approved

(3)

Y=	Connector Type
blank	Molex Type Connector or equivalent
J	JST Type Connector or equivalent

(4)

Z=	Mechanical
blank	Open frame
C	Optional cover kit

Note: Main label just show 5Vsb or not.

Summary

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Range	90	115 / 230	264	VAC	Universal input range.
Input Frequency	47		63	Hz	AC input.
Efficiency	86	87		%	At input 230VAC, rated load, 0.5 hr. warm up.
Operation Temperature	-20		+70	˚C	Derate linearly above 50˚C by 1% per ˚C to a maximum temperature of 70˚C, with convection cooled.
Weight		72.4		g	-SB model is 77 g.
Dimensions	101.6 (L) x 50.8 (W) x 30.0 (H) mm, Tolerance +/- 0.4mm.				
EMC	EN 55022 / EN 55032, CISPR 22 & FCC Part 15, EN 61204-3, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11				
Safety Approvals	IEC 60950-1, EN 60950-1, UL 60950-1, CSA C22.2 No. 60950-1-07, 2nd Edition.				
	IEC 62368-1, UL 62368-1, 2nd Edition, CSA C22.2 No. 62368-1-14,2nd Edition				

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage	90	115 / 230	264	VAC	Universal input range.
Input Frequency	47		63	Hz	AC input.
Input Current			1.5	A	Nominal AC Input Voltage (115VAC/230VAC), rated load.
Inrush Current			60	A	Nominal AC Input Voltage (115VAC/230VAC), one cycle at 25°C cold start.
No-load power consumption			<0.5	W	Nominal AC Input Voltage (115VAC/230VAC). Only with model MPE-S063-B.
Input Protection	One non-user serviceable internally located AC input line fuse. Fuse：2A / 300VAC * 1pcs				

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Voltage		12		VDC	
		5		VDC	
Output Current		5.0	6.66(V1)	A	
			0.5(V2)		
Initial Set Accuracy		±1.0(V1) ±2.5(V2)		%	Initial setting accuracy is adjusted at input 115VAC and output at 60% rated load.
Minimum Load		0		A	
Start Up Delay		0.3		Sec	Time required for initial output voltage stabilization. Nominal AC Input Voltage (115VAC/230VAC), rated load at 25°C.
Hold Up Time	16			mS	Nominal AC Input Voltage (115VAC/230VAC), rated load.
Line Regulation		±1.0(V1) ±1.0(V2)		%	Less than ±1% at rated load with ±10% changing in input voltage 115VAC.
Load Regulation		±1.0(V1) ±1.0(V2)		%	Measured from 60% to 100% rated load and from 60% to 20%rated load (60% ±40% rated load).
Ripple & Noise		120(V1) 50(V2)		mV	Measured by a 20MHz bandwidth limited oscilloscope and the each output is connected with a 10μF Electrolytic Capacitor and a 0.1μF Ceramic Capacitor.
Overvoltage Protection	For some reason the power supply fails to control itself, the build-in over voltage protection circuit will shut down the outputs to prevent damaging external circuits.				
Overload Protection	Auto recovery.				
Short Circuit Protection	Fully protected against output overload and short circuit. Automatic recovery upon of overload condition.				
Remote On / Off	The power supply will be turned on when the power On/Off pin is connected to secondary GND. This function exists only with optional +5Vsb.				

General

Characteristic		Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency		86	87		%	At input 230VAC, rated load, 0.5 hr. warm up.
Isolation	IP to OP	3000			VAC	
Switching Frequency			65		KHZ	

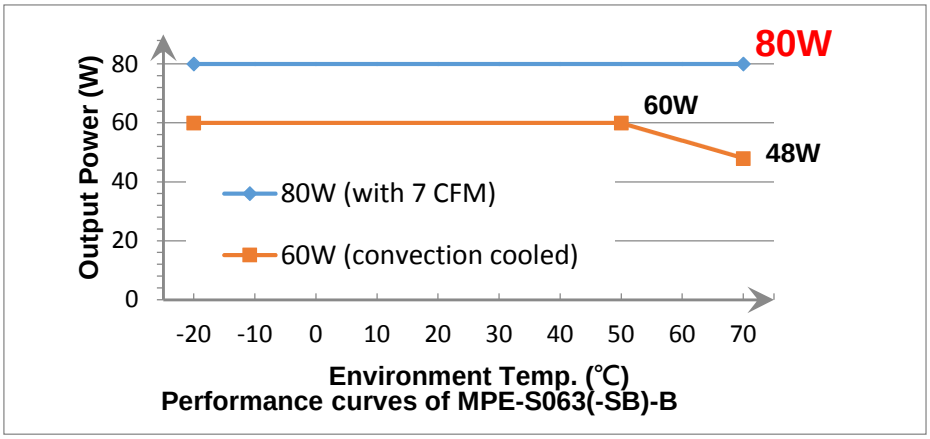
Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Low temperature start up	-20			°C	Some specification parameters maybe exceeded until after 20 minutes warm up period. (Note 1)
Operating Temperature	-20		+70	°C	Derate linearly above 50°C, performance curves will be provided after testing.
Storage Temperature	-40		+85	°C	
Relative Humidity	5		95	%RH	Non-condensing.
Cooling	7			CFM	Forced-cooled when 60W~80W
Operating / Non-Operating Altitude		3000 / 4000		m	

Note:

1. To start up at low temperature, when the V_{IP} <115VAC, please set the rated load @ 10% for maximum; when 115VAC< V_{IP} <230VAC, please set the rated load @ 30% for maximum; when V_{IP} ≥ 230VAC, there will be no specific limitation on rated load setting

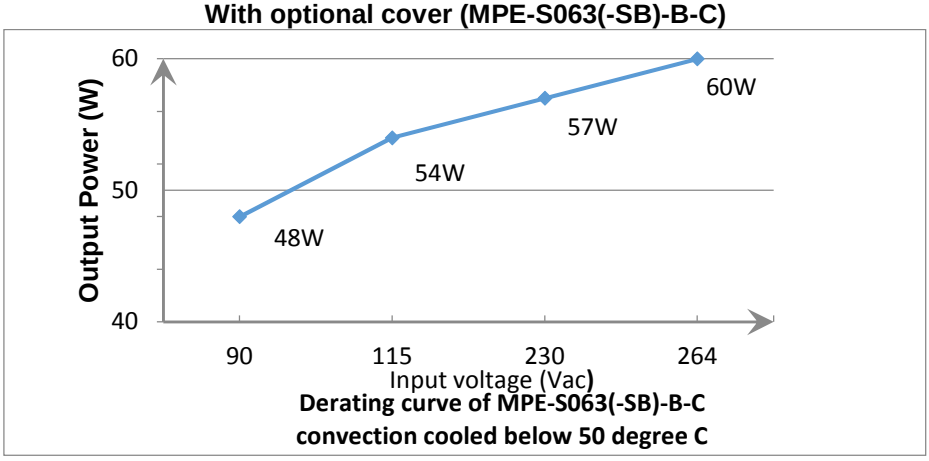
Derating curve



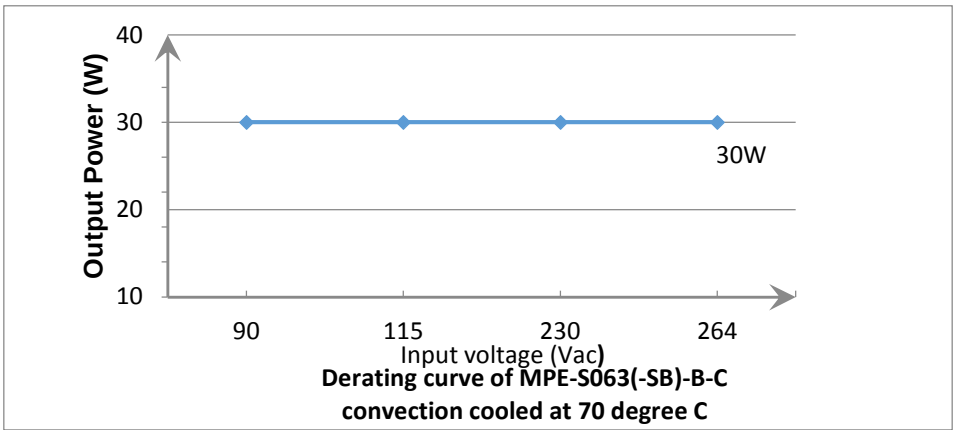
Performance curves of MPE-S063(-SB)-B

* Test within horizontal installation, for other orientation, please confirm with us.

With optional cover (MPE-S063(-SB)-B-C)



Derating curve of MPE-S063(-SB)-B-C
convection cooled below 50 degree C



Derating curve of MPE-S063(-SB)-B-C
convection cooled at 70 degree C

EMC: Emissions

Phenomenon	Standard	Class	Notes & Conditions
Conducted	EN 55022 / EN 55032 CISPR 22 & FCC Part 15	B	
Radiated	EN 55022 / EN 55032 CISPR 22 & FCC Part 15	B	
Voltage Flicker	EN 61204-3	B	

Note:
1. Above specification is applied with output equal or below 60W. For higher output power, please re-confirm with us.
2. Above specification is based on the test conditions of EN 55022 / EN 55032 / CISPR 22 & FCC Part 15. If there is any question when the power supply is applied to the system, please contact us for assistance.

EMC: Immunity

Phenomenon	Standard	Criteria	Notes & Conditions
ESD	IEC 61000-4-2	A	±8KV air discharge, ±6KV contact discharge
Radiated	IEC 61000-4-3	A	10V/m
EFT	IEC 61000-4-4	A	±2KV Line & PE
Surges	IEC 61000-4-5	A	L-N:±1KV, L/N-PE:±2KV
Conducted	IEC 61000-4-6	A	10V
Power Magnetic	IEC 61000-4-8	A	10A/m
Dips and Interruptions	IEC 61000-4-11	A A A / B B	DIP: >95%, 0.5 cycle DIP: 30%, 25 cycles DIP: 60%, 5 cycles (Note 2.) INT: >95%, 250 cycles

Note:
1. Above specification is applied with output equal or below 60W. For higher output power, please re-confirm with us.
2. The test result of input 240Vac / 100Vac is criteria A / B.

Safety Approvals

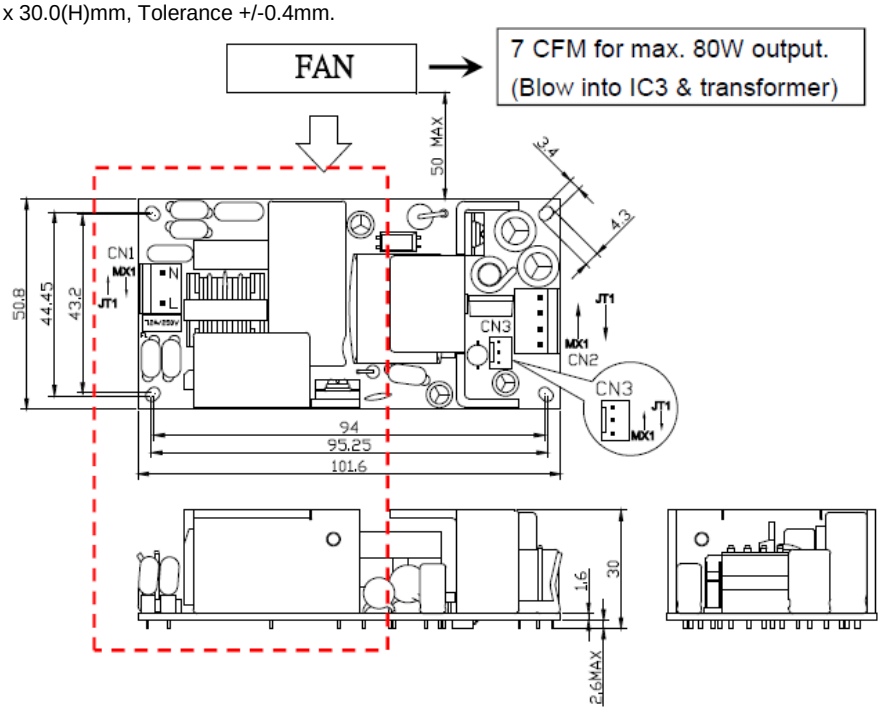
Safety Agency	Safety Standard	Notes & Conditions
TUV	EN 62368-1, 2nd Edition(Design to meet)	CE(LVD) declaration.
	EN 60950-1, 2nd Edition(Design to meet)	
CB	IEC 62368-1, 2nd Edition	
	IEC 60950-1, 2nd Edition	
UL/cUL	UL 62368-1, 2nd Edition, CSA C22.2 No. 62368-1-14, 2nd Edition	UL, cUL approved.
	UL 60950-1, 2nd Edition, CSA C22.2 No. 60950-1-07, 2nd Edition	

Mechanical Details

M/N: MPE-S063-SB-B

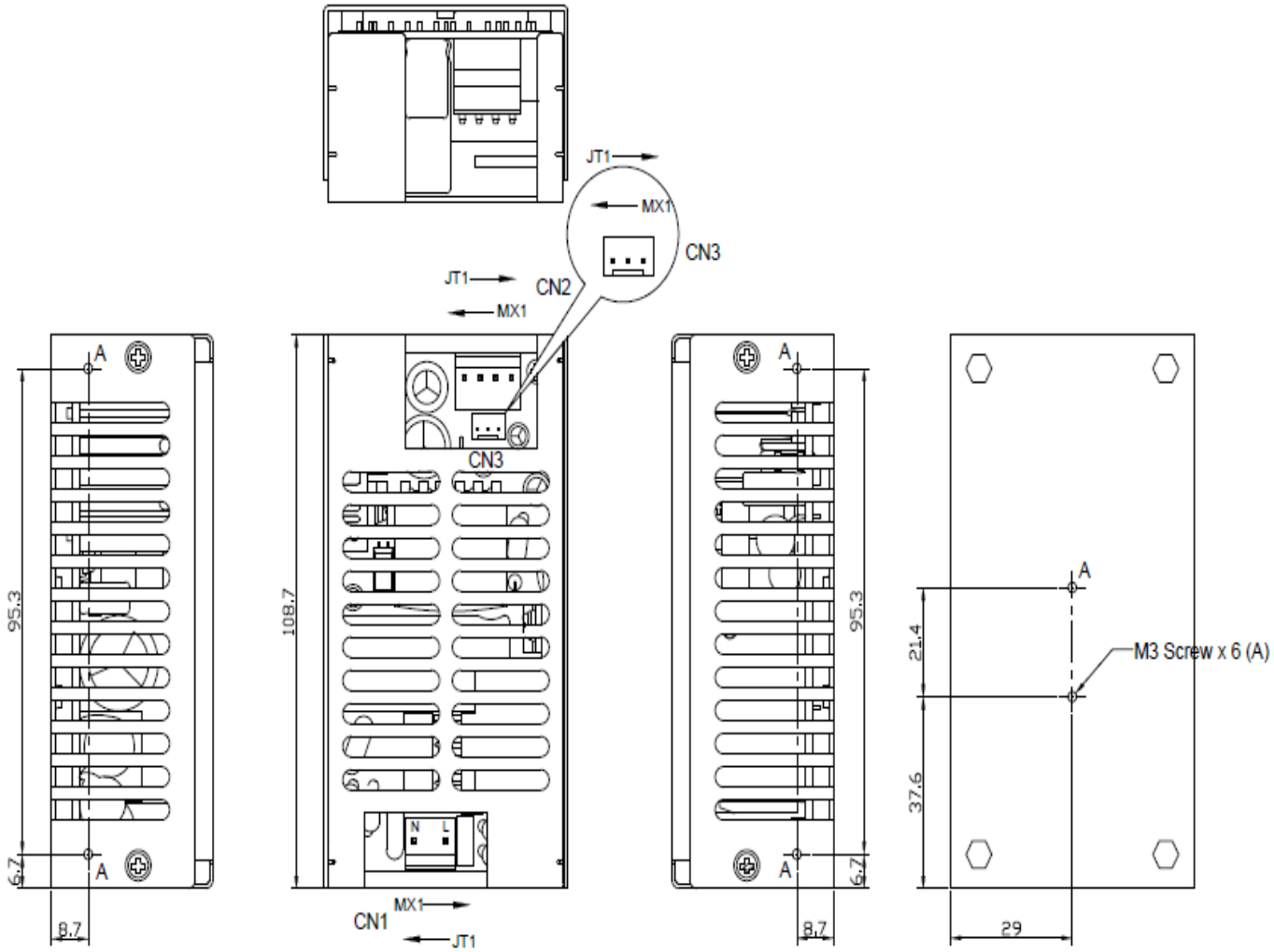
Unit: mm

SIZE：101.6(L) x 50.8(W) x 30.0(H)mm, Tolerance +/-0.4mm.

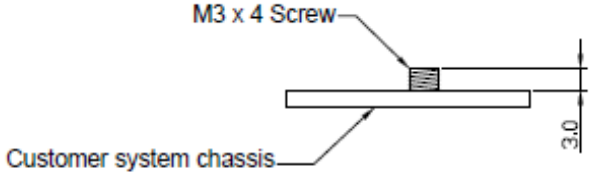


Note: The installation shall be kept in an isolation distance min. 2.8mm between the unit and the system chassis. There exist hazardous voltage in dotted area, keep insulating to avoid hazardous electric shock.

For m/n: MPE-S063(-SB)-B-C
Unit: mm Tolerance: +/- 0.4mm



Screws schematically :

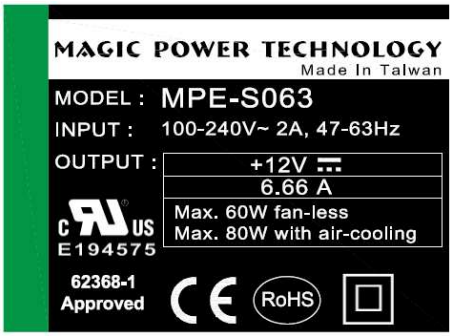


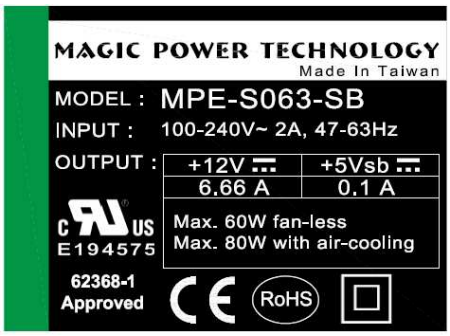
Parameter	Conditions/Description					
Dimension	101.6 (L) x 50.8 (W) x 30 (H) mm, Tolerance +/- 0.4mm.					
Connector & Pin Assignment	Location	Pin (Note 1)		Assignment	Proposed Housing	Proposed Terminals
	CN1 (Input) molex 09-65-2038 or equivalent (remove the middle pin)	MX1	JT2	AC in (N)	a. MOLEX: 09-50-1031(5195-03) or 09-52-4034 (5239-03) or equivalent b. JST: VHR-3N or equivalent (Note 2)	a. MOLEX :5194 or 5225 2478, 2578, 5167 or 5168 or equivalent b. JST: SVH-21T-P1.1 or equivalent
		MX2	JT1	AC in (L)		
	CN2 (Output) (Single) molex 09-65-2048 or equivalent	MX1	JT4	0 V	a. MOLEX: 09-50-1041 (5195-04) or 09-52-4044 (5239-04) or equivalent b. JST: VHR-4N or equivalent (Note 2)	a. MOLEX:5194 or 5225,2478, 2578,5167 or 5168 or equivalent b. JST: SVH-21T-P1.1 or equivalent
		MX2	JT3	0 V		
		MX3	JT2	+ V		
		MX4	JT1	+ V		
	CN3 (Note 3) molex 22-04-1031 or equivalent	MX1	JT3	+5Vsb	a. MOLEX: 22-01-1032 (5051-03) or 51191-0300 or equivalent b. JST: XHP-3 or equivalent (Note 2)	a. MOLEX :2759 or 5159 50802 or equivalent b. JST: SXH-001T-P0.6N, SXH-001T-P0.6 or SXH-002T-P0.6 or equivalent
		MX2	JT2	0 V		
		MX3	JT1	RC		

Note:1. The pin assignment "MX" for Molex type connector or equivalent, "JT" for JST type connector.
2. Exist with model no. suffixed -J, please see the Model no. coding.
3. Exist with model no. suffixed -SB, please see the Model no. coding.

Labeling

The labeling of MPE-S063(SB)-B is shown below for reference.





Thermal Considerations

In order to ensure safe operation of the PSU in the end-use equipment, the temperature of the components listed in the table below must not be exceeded.
Temperature should be monitored using J type thermocouples placed on the hottest part of the component (out of any direct air flow). See Mechanical Details for component locations.

Temperature Measurements at max. amb.	
Component	Max Temperature
T1	110℃
Q1	120℃
D5	120℃
C2	105℃
C21	105℃