



# SPECIFICATION

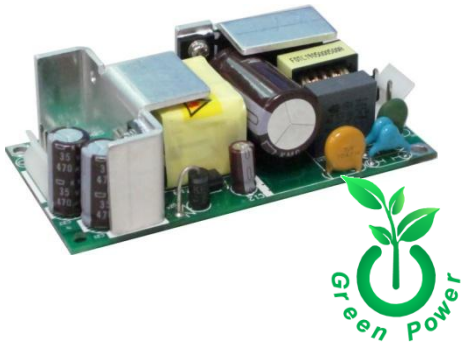
For

SWITCHING POWER SUPPLY

**M/N: MPE-S060 Series**

## Revision history

REV.	Jan. 3 <sup>rd</sup> 2012	Established.
REV.	Jan. 13 <sup>th</sup> 2012	Added the dimensions of mounting holes.
REV.	Apr. 6 <sup>th</sup> 2012	Revised the dimensions of mounting holes.
REV.	Jan. 3 <sup>rd</sup> 2013	Added +48V output model.
REV.	Jun. 21 <sup>th</sup> 2013	Revised the condition/description of load regulation in paragraph 3.
REV.	July 9 <sup>th</sup> 2013	Add CCC safety approval logo and standard for only MPE-S065
REV.	Aug. 30 <sup>th</sup> 2013	Add optional cover kit and its derating and mechanical drawing.
REV.	May 21 <sup>th</sup> 2015	Changed the initial setting accuracy of +5Vsb from $\pm 1.5\%$ to $\pm 2.5\%$
REV.	Nov. 5 <sup>th</sup> 2015	1.Changed Molex Proposed Terminals from 5176 to 5167. 2.Added "or equivalent" after "Molex".



Only for MPE-S065



## FEATURES

- 60W with convection-cooled and 80W with forced air cooling of single / dual output power supply
- Compact size 2 x 4 inch
- Class II, also class I with optional functional ground connected
- Meets EMI CISPR/FCC class B
- No-load power consumption < 0.5W
- Optional +5Vsb & Remote on/off function (see paragraph 5)
- Optional cover kit

## 1. Description

The MPE-S060 Series is a 60W rated, 80W max., single / dual output power supply for general purpose, which has additional +5vsb output function. Dual constructions design, both class I & class II are available.

Model No.	Output set	Output Voltage	Mini. Output Current	Rated Output Current	Max Output Current	Line Regulation (Note 5)	Load Regulation (Note 5)	Ripple & Noise p-p (Note 1)	Initial Setting Accuracy (Note 2)
MPE-S063	1	+12 V	0 A	5 A	6.66 A	±1%	±1%	±1%	±1%
MPE-S065	1	+24 V	0 A	2.5 A	3.33 A	±1%	±1%	±1%	±1%
MPE-S066	1	+48 V	0 A	1.25A	1.67A	±1%	±1%	±1%	±1%
Suffix code: -SB (Note 3.)	2	+5Vsb (Optional)	0 A	0.1 A	0.1 A	±1%	±1%	±1%	±2.5%
MPE-S06A	2	+5 V	0 A	3.5 A	4 A	±1%	±1%	±1%	±1%
		+12 V	0 A	3.5 A	5 A	±1%	±3%	±1%	±2%

**Total Output Power:** Max. 80W with 7 CFM force air cooling<sup>(Note 4)</sup>; 60W convection cooled at 50°C environment temperature.

- Note: 1) Measured by a 20MHz bandwidth limited oscilloscope and the each output is connected with a 10µF Electrolytic Capacitor and a 0.1µF Ceramic Capacitor.  
 2) Initial Setting Accuracy is at Input 110VAC and all output at 60% rated load.  
 3) With optional +5Vsb combining remote on/off function, please refer to paragraph 5 for the detail.  
 4) Air flow from IC3 to the body of PSU with distance 50mm maximum.  
 5) Please see the definition in paragraph 3.

## 2. Input Specification

Parameter	Conditions/Description	Min.	Nom.	Max.	Units
Input Voltage	Continuous input range.	90	115/230	264	VAC
Input Frequency	AC input.	47		63	Hz
Hold Up Time	Nominal AC Input Voltage (115VAC/230VAC), rated load.	16			ms
Input Current	Nominal AC Input Voltage (115VAC/230VAC), rated load.			1.5	A
Inrush Current	Nominal AC Input Voltage (115VAC/230VAC), one cycle at 25°C.			60	A
Input Protect	Non-user serviceable internally located AC input line fuse.				
No-load power consumption	Nominal AC Input Voltage (115VAC/230VAC).			<0.5	W



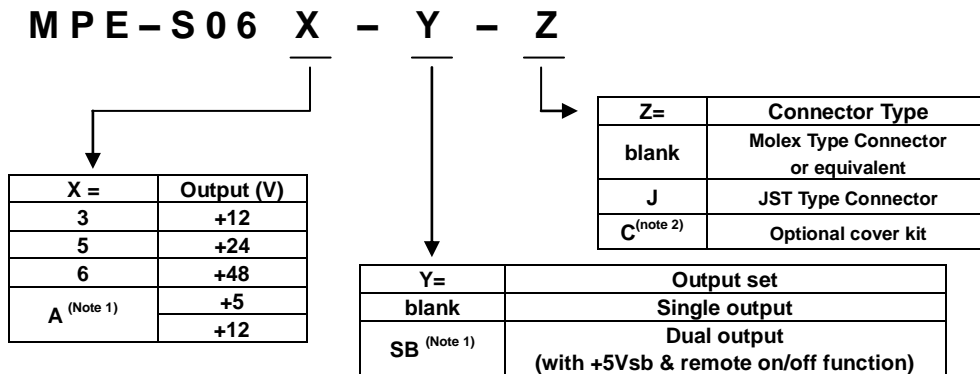
### 3. Output Specification

Parameter	Conditions/Description	Min.	Nom.	Max.	Units
Efficiency	At 230VAC Input , rated load, warm up with 2 hr.	86	87		%
Minimum load		See Chart of Description			
Ripple & Noise	Rated load, 20MHz bandwidth	See Chart of Description			
Output Power	Continuous output power.	See Chart of Description			
Line Regulation	Less than ±1% at rated load with ±10% changing in input voltage 115VAC.	See Chart of Description			
Load Regulation	Measured from 60% to 100% rated load and from 60% to 20% rated load (60% ±40% rated load), and keep another output (if any) at 60% rated load.	See Chart of Description			
Turn-on Delay	Time required for initial output voltage stabilization.		0.3		Sec

### 4. Interface Signals and Internal Protection

Parameter	Conditions/Description
Short Circuit Protection	Fully protected against output overload and short circuit. Automatic recovery upon of overload condition.
Over Voltage Protection	For some reason the power supply fails to control itself, the build-in over voltage protection circuit will auto recovery the outputs to prevent damaging external circuits.
Remote on/off (optional)	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.

### 5. Model no. coding



Note: 1) This series for max. dual output.  
2) Please refer derating curve 4

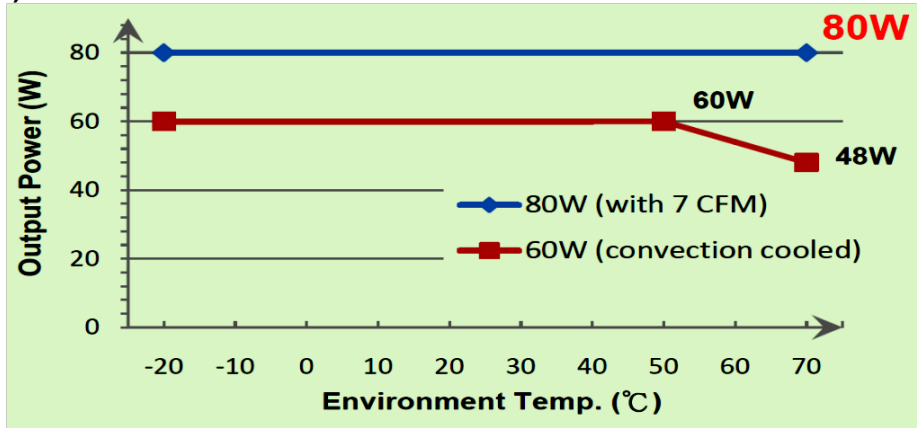
### 6. Environment Specification

Parameter	Conditions/Description	Min.	Nom.	Max.	Units
Operating Temperature	Please see the following performance curves.	-20		+70	°C
Storage Temperature		-40		+85	°C
Relative Humidity	Non-condensing.	5		95	%RH
Altitude	Operating Non-operating			3K 4K	Meter

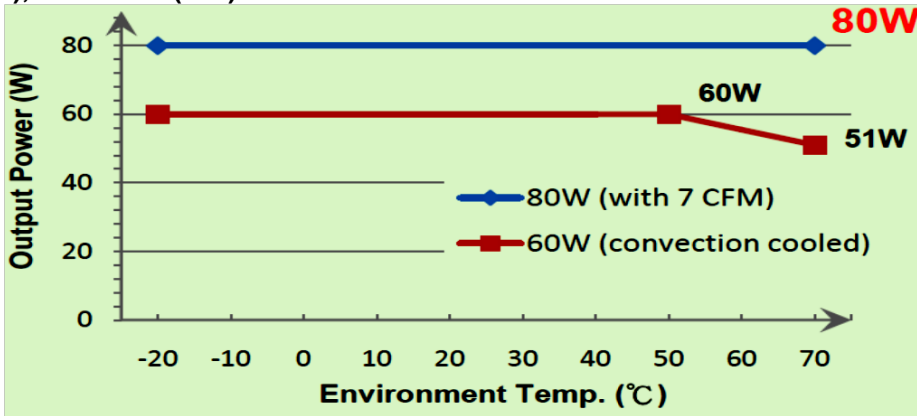
Performance curve (please refer to next page)



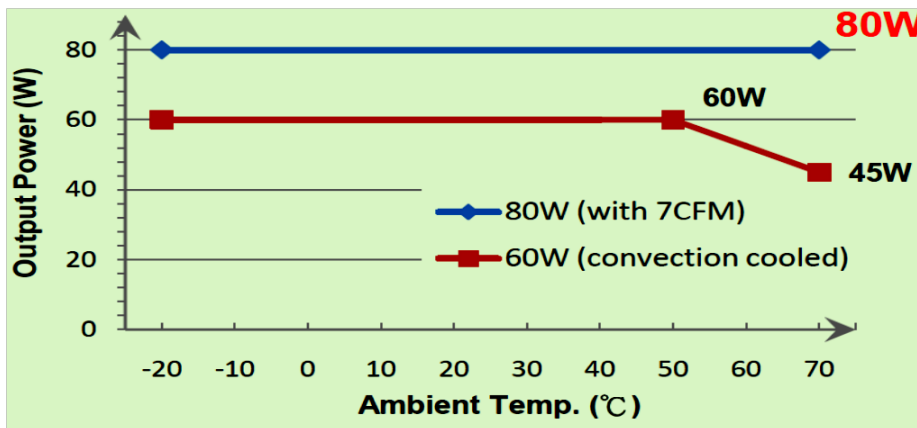
1. MPE-S063 (-SB)



2. MPE-S065 (-SB), MPE-S066 (-SB)

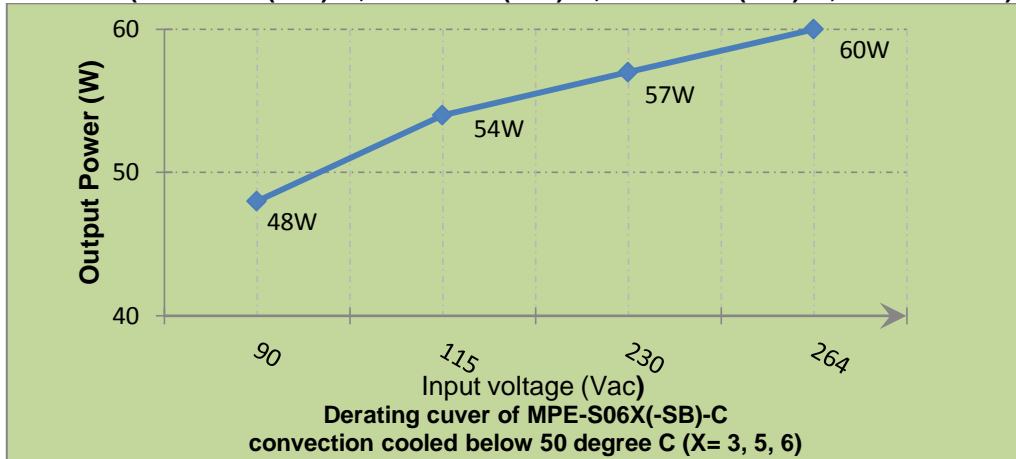


3. MPE-S06A





4. With optional cover (MPE-S063(-SB)-C, MPE-S065(-SB)-C, MPE-S066(-SB)-C, MPE-S06A-C)



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

7. Safety Approvals, EMI and EMS Specification

Parameter	Conditions/Description	Min.	Nom.	Max.	Units
Approvals	IEC 60950-1, 2 <sup>nd</sup> Edition				CE (LVD) declaration
	EN 60950-1, 2 <sup>nd</sup> Edition				CE (LVD) declaration
	UL 60950-1, 2nd Edition,				UL approved
	CSA C22.2 No. 60950-1-07, 2nd Edition				cUL approved
	GB 4943-2011				CCC approved only for MPE-S065
Hi-Pot	Input to output	3000			VAC
EMI <sup>(Note 1, 2.)</sup>	EN 55022 / CISPR 22 & FCC Part 15	B			Class
	EN 61204-3	B			
EMS	IEC 61000-4-2	±8KV air discharge, ±6KV contact discharge		A	Criteria
	IEC 61000-4-3	10V/m		A	
	IEC 61000-4-4	±2KV Line & PE		A	
	IEC 61000-4-5	L-N:±1KV, L/N-PE:±2KV		A	
	IEC 61000-4-6	10Vrms		A	
	IEC 61000-4-8	10A/m		A	
	IEC 61000-4-11	Voltage dips >95%, 0.5 cycle		A	
		Voltage dips 30%, 25 cycles		A	
Voltage dips 60%, 5 cycles		A / B (Note 3.)			
	Voltage interruptions >95%, 250 cycles		B		

Note: 1) As a build-in type power supply, the power supply needs to be installed in a suitable enclosure to pass the EMI/EMC tests. The final assembly has to comply with the valid EMI/EMC and safety.

2) The mounting holes should be connected to each other to conform the EMI limit.

3) The test result of input 240Vac / 100Vac is criteria A / B.



### 8. Mechanical Specification

**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)	MX1	JT2	AC in (N)	a. MOLEX or equivalent: 09-50-1031 (5195-03) or 09-52-4034 (5239-03); b. JST: VHR-3N (Note 2)	a. MOLEX or equivalent:5194 or 5225 2478, 2578,5167 or 5168; b. JST: SVH-21T-P1.1
MX2		JT1	AC in (L)			
CN2 (Output) (Single)	MX1 MX2 MX3 MX4	JT4	0 V	a. MOLEX or equivalent: 09-50-1041 (5195-04) or 09-52-4044 (5239-04); b. JST: VHR-4N (Note 2)	a. MOLEX or equivalent:5194 or 5225 2478, 2578,5167 or 5168; b. JST: SVH-21T-P1.1	
		JT3	0 V			
		JT2	+ V			
		JT1	+ V			
CN2 (Output) (Dual)	MX1 MX2 MX3 MX4	JT4	+12 V	b. JST: VHR-4N (Note 2)	b. JST: SVH-21T-P1.1	
		JT3	0 V			
		JT2	0 V			
		JT1	+5 V			
CN3 (Note 3)	MX1 MX2 MX3	JT3	+5Vsb	a. MOLEX or equivalent: 22-01-1032 (5051-03) or 51191-0300; b. JST: XHP-3 (Note 2)	a. MOLEX or equivalent:2759 or 5159 50802; b. JST: SXH-001T-P0.6N, SXH-001T-P0.6 or SXH-002T-P0.6	
		JT2	0 V			
		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 comparison in paragraph 5.  
 3) Exist with model no. suffixed -SB, please see the comparison in paragraph 5.

**\*Please see the mechanical drawing on next page**

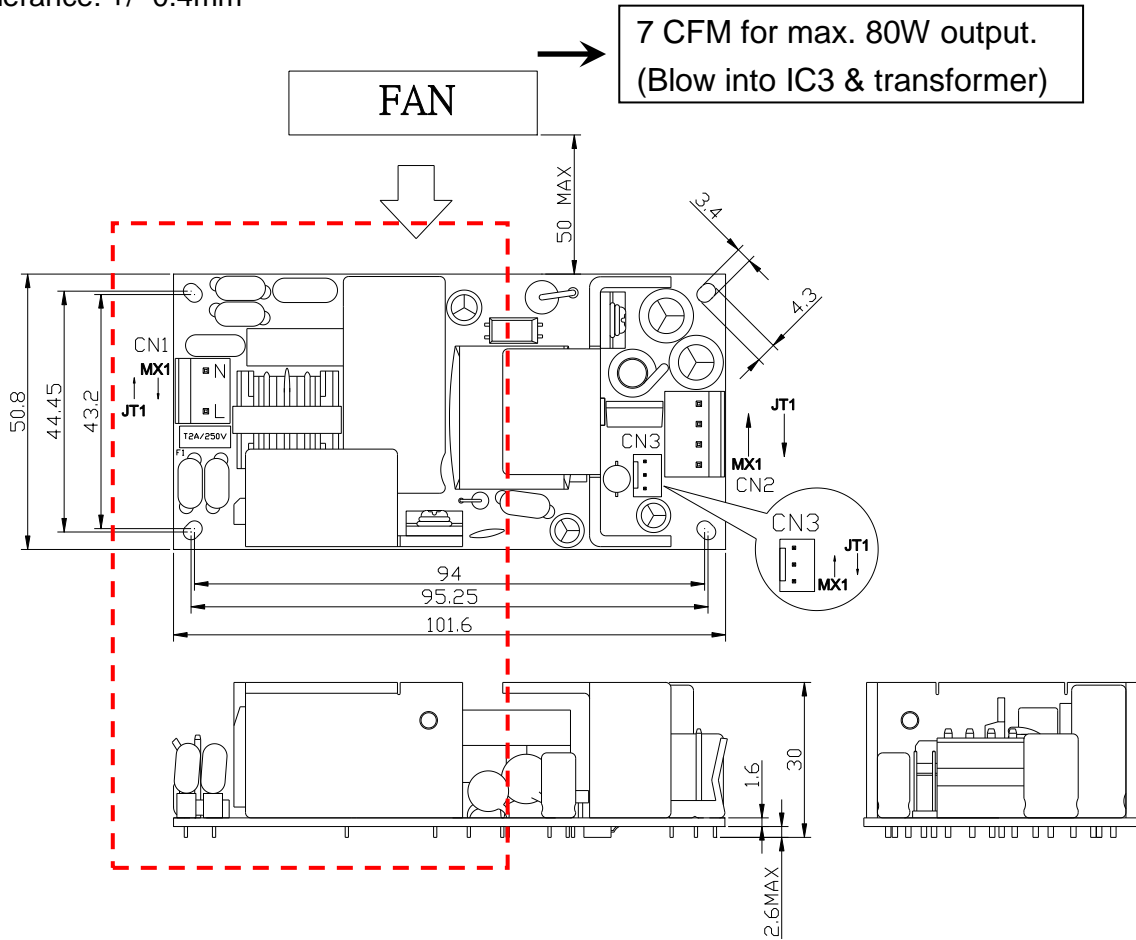


**Mechanical drawing**

For m/n: MPE-S063-SB, MPE-S065-SB

Unit: mm

Tolerance: +/- 0.4mm



**\*Installation note:**

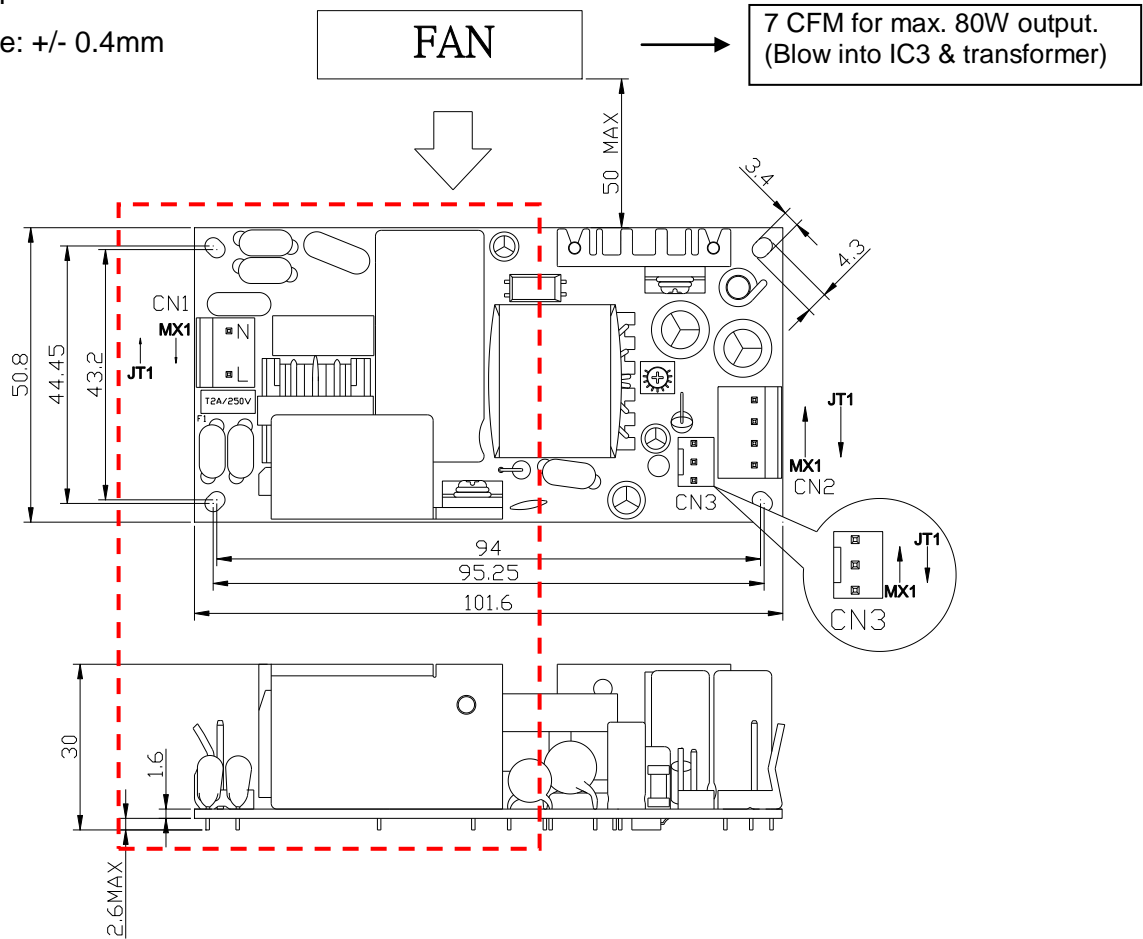
The installation shall be kept in an isolation distance min. 2.8mm between the unit and the system chassis. There exist hazardous voltage in dotted area, keep insulating to avoid hazardous electric shock.



For m/n: MPE-S066-SB

Unit: mm

Tolerance: +/- 0.4mm



**\*Installation 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.

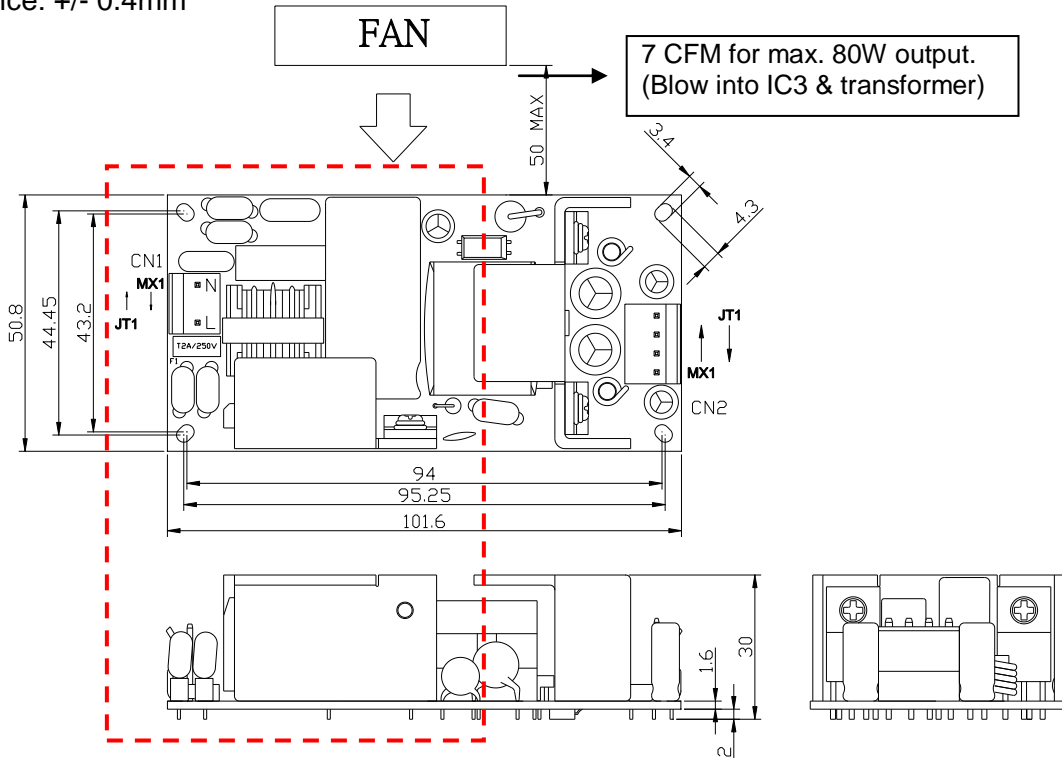




For m/n: MPE-S06A

Unit: mm

Tolerance: +/- 0.4mm



**\*Installation 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-S06X(-SB)-C (X=3, 5, 6, A)

Unit: mm

Tolerance: +/- 0.4mm

