



# SPECIFICATION

For

SWITCHING POWER SUPPLY

**M/N: MPD-S105**

## Revision History

Rev.	Apr 14 <sup>th</sup> . 2016	Established.
Rev.	Jun. 4 <sup>th</sup> . 2016	1.Added Performance Curve (with fan) at 70°C. 2.Revised Operating Temperature Conditions/Description.
Rev.	Jul 19 <sup>th</sup> 2016	1.Modify Mechanical Drawing. 2.Added Vibration Testing
Rev.	Jul 29 <sup>th</sup> 2016	Efficiency value 89.5% modify to 90%.
Rev.	Dec 20 <sup>th</sup> 2016	1. Changed 60950-1 to A2: 2013 2. Changed IEC 61000-4-3: 2002 to 10V/m 3. Changed IEC 61000-4-6: 2006 to 10V



FEATURES

- 100W with forced air cooling and 70W convection cooled isolated DC/DC converter cooled
• Fully isolated Primary to Secondary; Primary to Earth Ground
• Input polarity reversed protection
• Altitude Operating 5k meter.
• Compact size 2 x 4 inch

1. Description

The MPD-S105 are 100W with forced air cooling and 70W convection cooled single output DC/DC converter. It is a compact size 2 x 4" and wide input range from 9-32VDC. Fully isolated primary to secondary and high efficiency up to 90% design is providing saver and reliable in DC/DC application.

Table with 8 columns: Output Voltage, Min. Output Current, Rated Output Current, Max. output Current, Line Regulation, Load Regulation, Ripple & Noise p-p, Initial Setting Accuracy. Row 1: +24V, 0A, 2.9A, 4.2A, ±1%, ±1%, 240mV, 23.52V to 24.48V

Total Output Power: 100W with at 50°C environment temperature

- Note: 1) When output current above rated output current, it has to force air cooling 13.6 CFM.
2) Measured by a 20MHz bandwidth limited oscilloscope and the each output is connected with a 10µF Electrolytic capacitor and a 0.1µF Ceramic Capacitor.
3) At factory, all outputs in 60% rated load. Each output voltage is set in the initial setting accuracy.
4) The total DC continuous power shall be kept with 70 W at input from 18 V to 32 DC; 65 W at input from 12 to 17.9 VDC; 55W at input from 9-11.9VDC. convection cooled. When above 100 W with 13.6 CFM force air cooling.

2. Input Specification

Table with 5 columns: Parameter, Conditions/Description, Min., Nom., Max., Units. Rows: Input Voltage, Input Current, Inrush Current

3. Output Specification

Table with 5 columns: Parameter, Conditions/Description, Min., Nom., Max., Units. Rows: Efficiency, Minimum load, Ripple & Noise, Output Power, Line Regulation, Load Regulation

Note: 1) It shall be warmed up above 1 hr.

4. Interface Signals and Internal Protection

Table with 2 columns: Parameter, Conditions/Description. Rows: Short Circuit or Over Load Protection, Over Voltage Protection



Optional Input Reverse Polarity Protection      Optional module: When incorrect input polarity installation, the PSU will be not damaged and no output voltage.

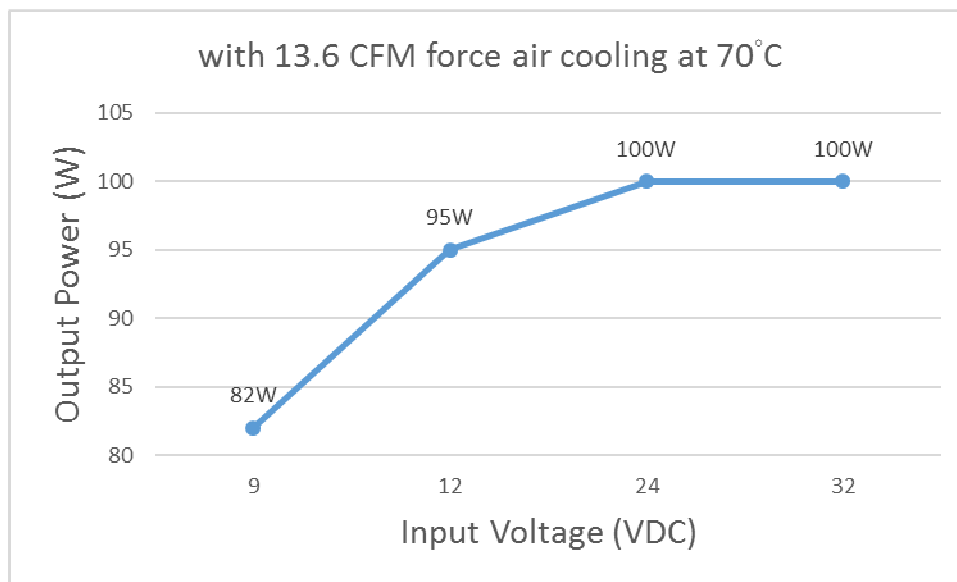
**5. Safety Approvals, EMI and EMS Specification**

Parameter	Conditions/Description	Min.	Nom.	Max.	Units
Approvals	IEC 60950-1: 2005+A2: 2013, 2 <sup>nd</sup> EN 60950-1: 2006+A2: 2013 UL 60950-1, 2 <sup>nd</sup> Edition, 2007-03-27 CSA C22.2 No.60950-1-07, 2 <sup>nd</sup> Edition, 2007-03				Design to meet
Isolation voltage (Hi pot)	Primary to Secondary. Primary to PE	0.5K 0.5K			VAC
EMI (Note 1)	EN 55022 / CISPR 22 & FCC Part 15	B			Class
EMS (Note 1)	IEC 61000-4-2: 2001, 8KV air discharge, 6KV contact discharge IEC 61000-4-3: 2002, 10V/m IEC 61000-4-4: 2004, 0.5KV line & Line IEC 61000-4-5: 2001, 0.5KV line to Line IEC 61000-4-6: 2006, 10V	A A A A A			Criteria

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

**6. Environment Specification**

Parameter	Conditions/Description	Min.	Nom.	Max.	Units
Operating Temperature	Derate linearly above 50°C 70W at input from 18 to 32 Vdc By 1.25% per °C 65W at input from 12 to 17.9 Vdc By 1.25% per °C 55W at input from 9 to 11.9 Vdc By 1.25% per °C to a maximum temperature of 70°C	-10		+70	°C
Storage Temperature		-20		+75	°C
Relative Humidity	Non-condensing.	10		90	%RH
Altitude	Operating			5K	meter



**Performance curves (with fan) at 70°C**

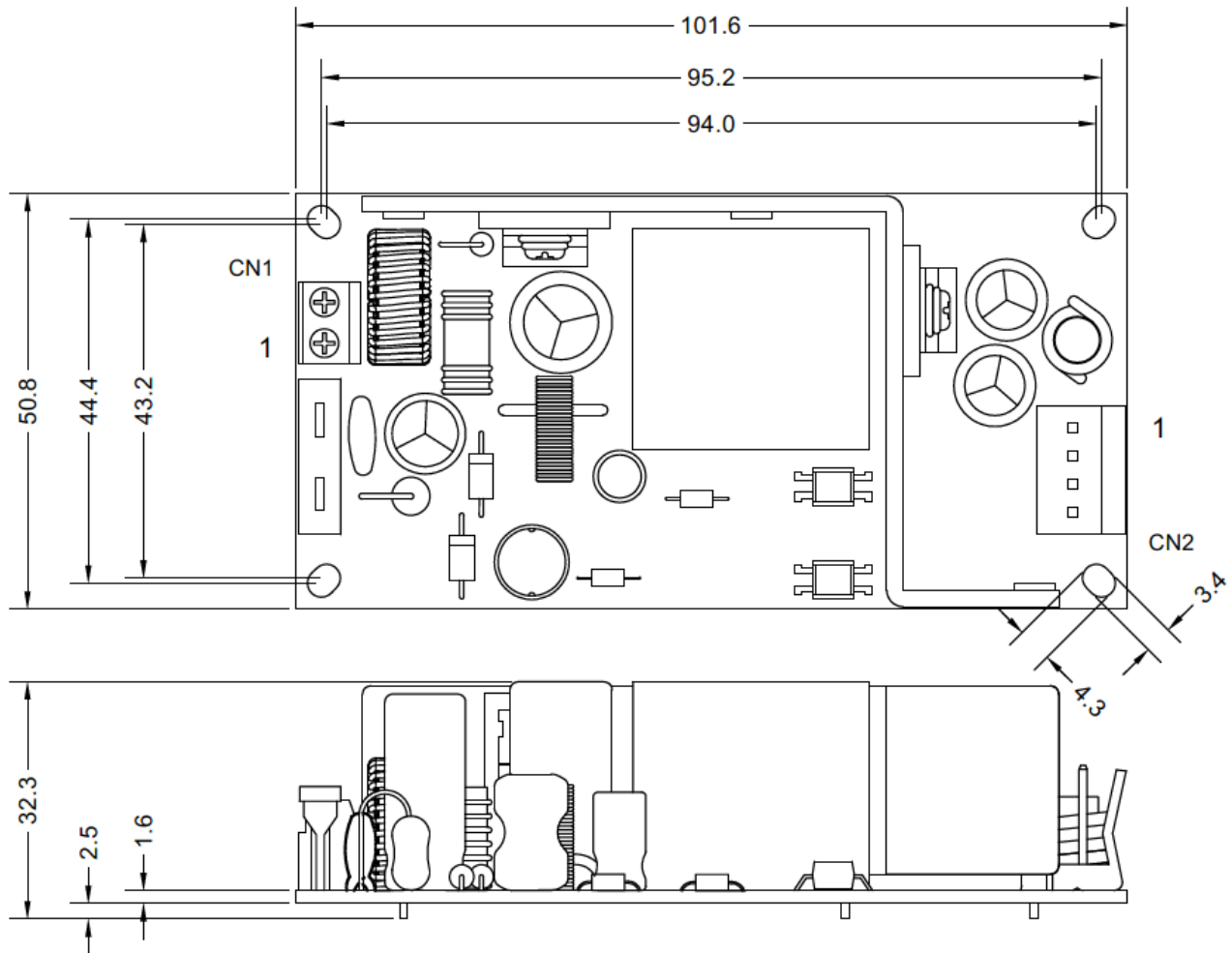


### 7. Mechanical Specification

Parameter	Conditions/Description				
Dimension	50.8 (L) x 101.6 (W) x 32.3 (H) mm, Tolerance +/- 0.5mm.				
Connector	CN1 --- DC input:		Dinkle ED500V-02 Terminal blocks.		
	CN2 --- DC output:		Molex 5273-04A or equivalent.		
Pin Assignment	CN1	Pin	1. +	2. -	(With max. torque=0.4N*m)
	CN2	Pin	1. +Vout	3. GND	
			2. +Vout	4. GND	

#### Dimension

50.8 (L) x 101.6 (W) x 32.3 (H) mm, Tolerance +/- 0.5mm.



### 8. Vibration Test

Parameter	Conditions/Description
Ambiance	Temperature : 20~35°C
Condition	Humidity : 50~75 %RH
Test Standard	IEC 60068-2-6
Test Condition	Frequency Type : Sweep Frequency Frequency Range : 10~55 Hz Sweep Rate : 60 minute / cycle Number of cycle : 1 cycle / axis Direction : X , Y and Z axis