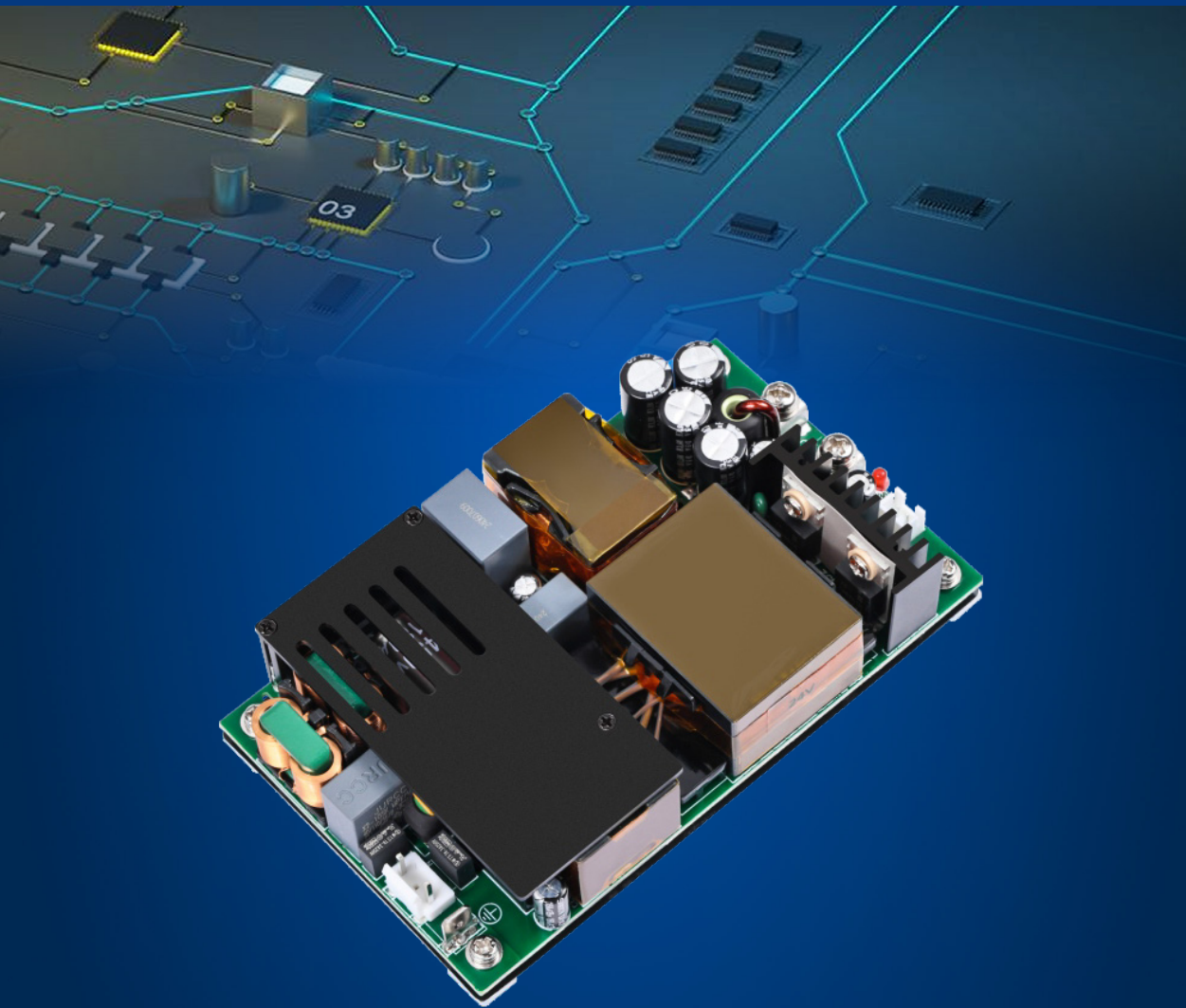


AC-DC Switch Mode Power Supply

TPS-GSH450S Single Output Series





Features

- Aluminum enclosure. L*W*H: 127 × 76.2 × 28mm
- Compact size: 5"× 3"
- Natural convection: 250w
- Forced convection: 450w(12v 20cfm)
- Wide input voltage range: 85-305vac
- Operating temperature: -25°C~+70°C
- Active power factor correction (PFC) included isolation voltage: 3750vac
- High reliability and long lifespan.
- Led indicator for operational status
- Adjustable output voltage
- Undervoltage input protection, overvoltage/overcurrent/short-circuit protection
- Overtemperature protection

This series is rated for a 450W output and supports a wide range of AC (85-305VAC) or DC (120-420VDC) inputs, offering adjustable output voltages such as 12V, 19V, 24V, 36V, and 48V. With an efficiency of up to 95.5%, it is designed for stable operation in environments ranging from -25 °C to +70 °C. The power supply also complies with international safety regulations and is suitable for various applications including industrial automation, control systems, communications equipment, LED systems, smart home devices, electronic instruments, and medical equipment.

Model Selection

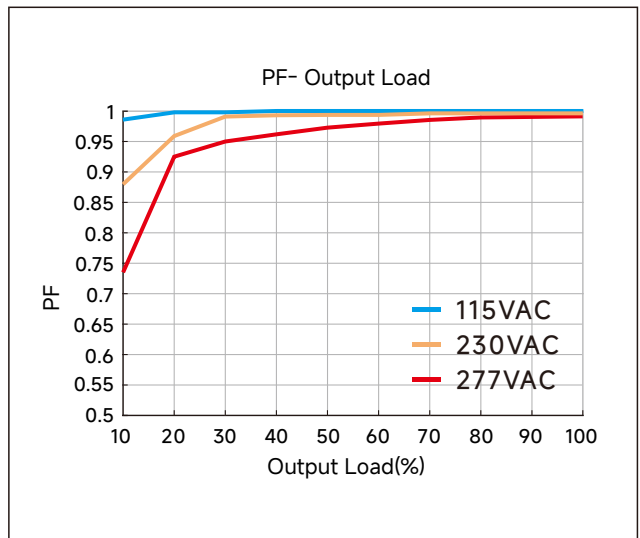
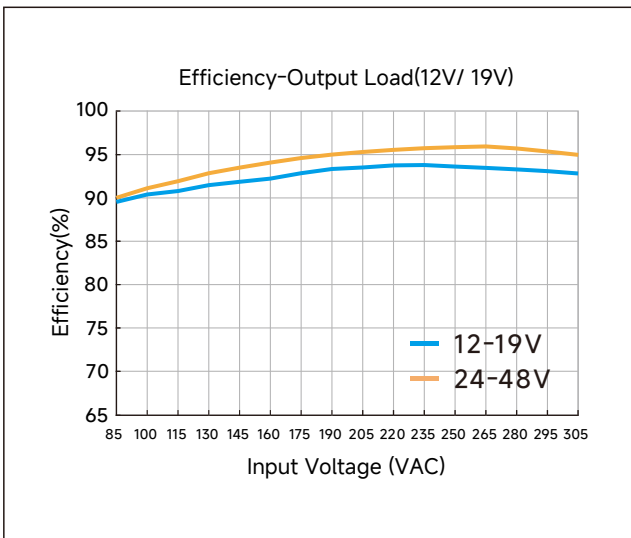
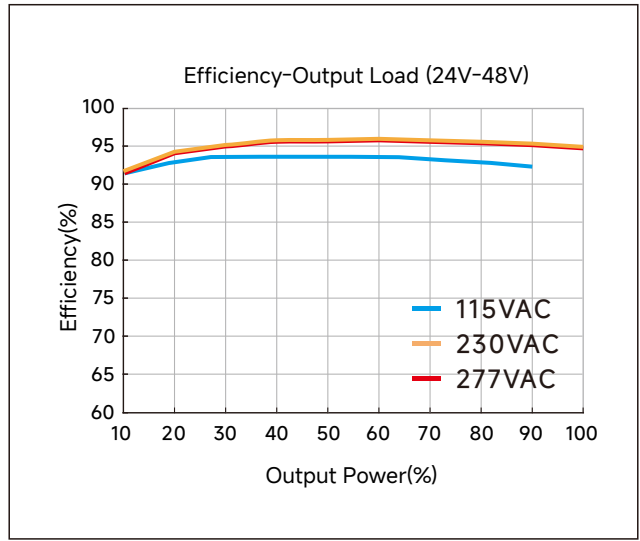
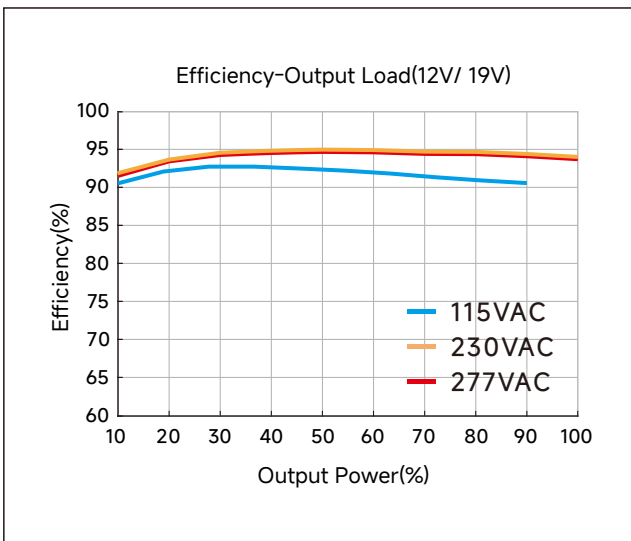
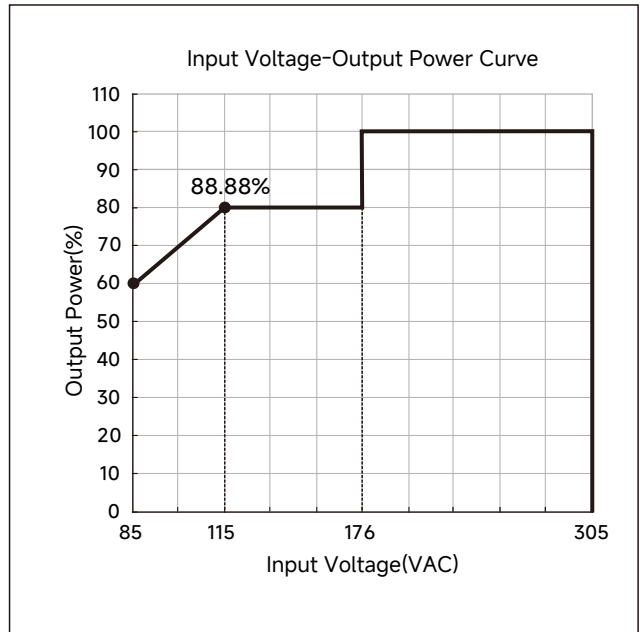
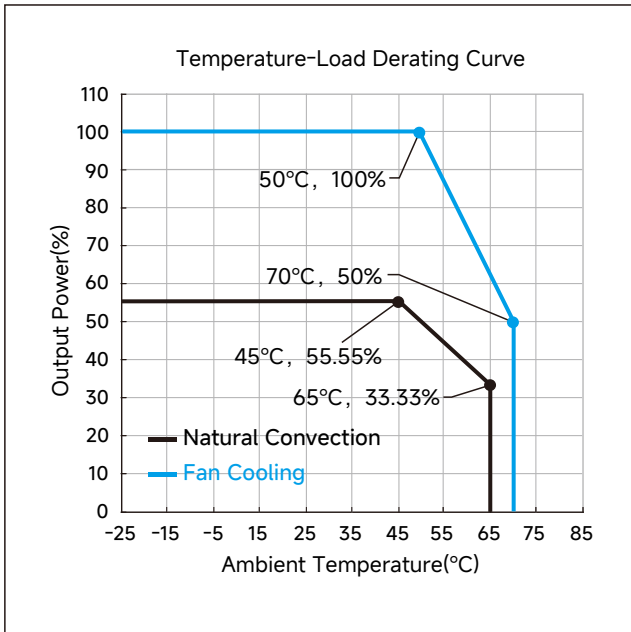
Article No.	Cooling Method	Output Power*	Output Voltage/Current (Vo/Io)	Input Voltage Range	Efficiency (Typ.)*	Adjustable Voltage Range ADJ(V)	Max Capacitance Load
TPS-GSH450S-12V	Natural	250W	12V/20.83A	85~176VAC/	92%	11.4~12.8V	10000µF
	Forced	400W	12V/33.33A	120~250VDC	91%		
	Natural	250W	12V/20.83A	176~305VAC/	94.5%		
	Forced	450W	12V/37.5A	250~420VDC	93.5%		
TPS-GSH450S-19V	Natural	250W	19V/13.16A	85~176VAC/	93%	18~20.5V	8000µF
	Forced	400W	19V/21.05A	120~250VDC	92%		
	Natural	250W	19V/13.16A	176~305VAC/	95%		
	Forced	450W	19V/23.68A	250~420VDC	94.5%		
TPS-GSH450S-24V	Natural	250W	24V/10.42A	85~176VAC/	93%	22.8~27V	6000µF
	Forced	400W	24V/16.67A	120~250VDC	92%		
	Natural	250W	24V/10.42A	176~305VAC/	95.5%		
	Forced	450W	24V/18.75A	250~420VDC	95%		
TPS-GSH450S-36V	Natural	250W	36V/6.95A	85~176VAC/	93.5%	34.2~39.6V	5000µF
	Forced	400W	36V/11.11A	120~250VDC	92.5%		
	Natural	250W	36V/6.95A	176~305VAC/	95.5%		
	Forced	450W	36V/12.5A	250~420VDC	95.5%		
TPS-GSH450S-48V	Natural	250W	48V/5.21A	85~176VAC	93.5%	45.6~54V	3000µF
	Forced	400W	48V/8.33A	120~250VDC	92.5%		
	Natural	250W	48V/5.21A	176~305VAC	95.5%		
	Forced	450W	48V/9.38A	250~420VDC	95.5%		

Notes	<p>1.*Under any steady state conditions, the total output power shall not exceed the rated total power. When the output voltage is increased, the total output power must not exceed the rated output power. If the output voltage is raised more than 5% above the rated voltage, the output power must be reduced to 80% of the rated power. When the output voltage is decreased, the output current must not exceed the rated output current.</p> <p>2.*Efficiency testing conditions: 25°C ambient temperature, input 230VAC; during the full-load efficiency test, the fan should be powered by an external power source, meaning that the fan's power loss is not counted towards the input power.</p>
Notes	1.* This product is not suitable for inductive loads such as motor amplifiers. If the manufacturer has the capability for separate debugging, please contact us for individual coordination

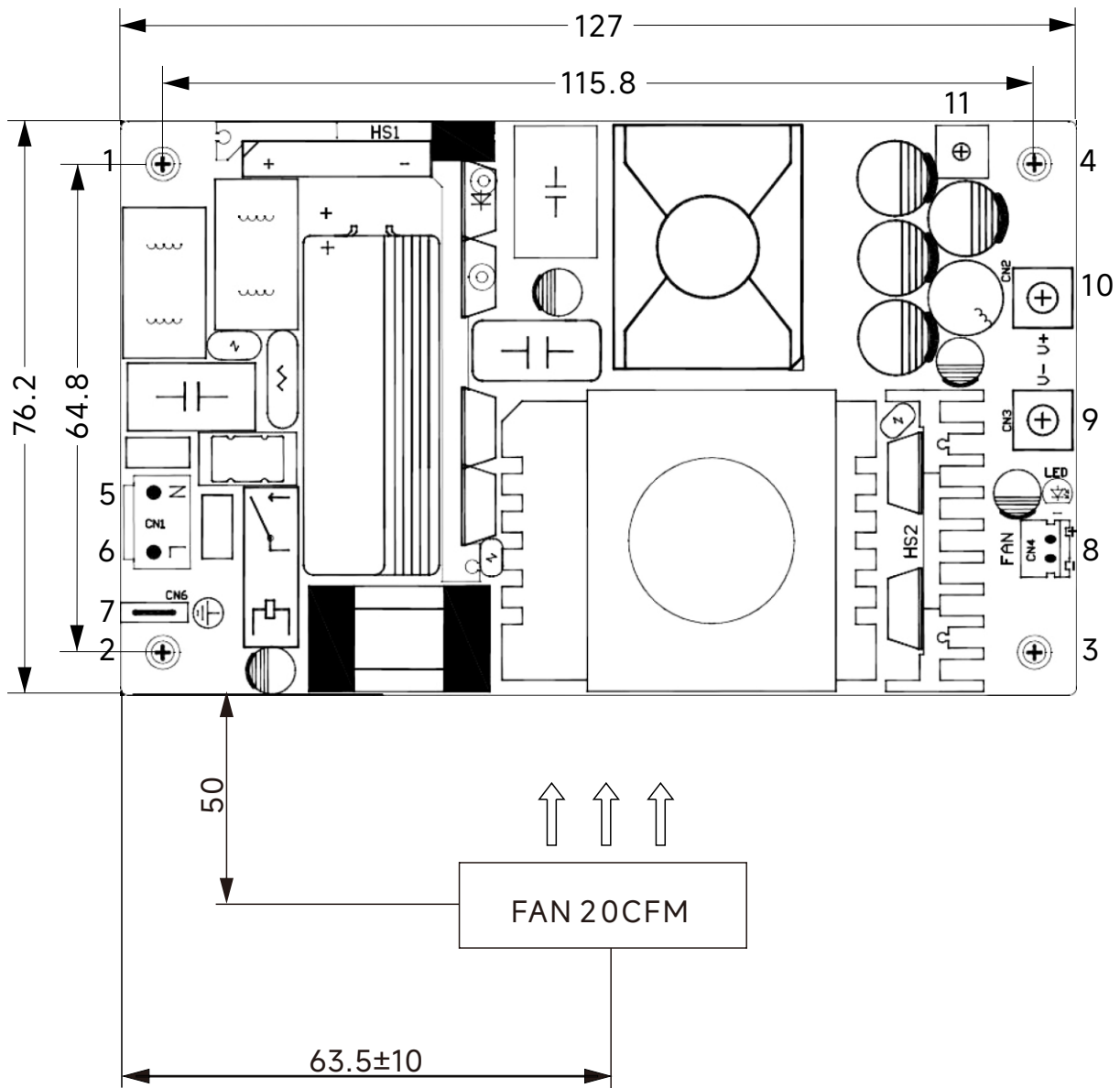
Electrical Specifications						
Model		TPS-GSH450S-12V	TPS-GSH450S-19V	TPS-GSH450S-24V	TPS-GSH450S-36V	TPS-GSH450S-48V
Output	Rated Output Voltage	12V	19V	24V	36V	48V
	Output Current (Natural Convection)	0~20.83A	0~13.16A	0~10.42A	0~6.95A	0~5.21A
	Output Current Range (20CFM Fan Cooling)	0~37.5A	0~23.68A	0~18.75A	0~12.5A	0~9.38A
	Output Power (Natural Convection)	250W	250W	250W	250W	250W
	Output Power (20CFM Fan Cooling)	450W	450W	450W	450W	450W
	Efficiency (115VAC/230VAC, Typ.)	91%/93.5%	92%/94.5%	92%/95%	92.5%/95.5%	92.5%/95.5%
	Voltage Ripple	< 60mVp-p	< 100mVp-p	< 100mVp-p	< 100mVp-p	< 100mVp-p
	Voltage Adjustment Range (Potentiometer)	11.4~12.8V	18~20.5V	22.8~27V	34.2~39.6V	45.6~54V
	Voltage Accuracy	± 1%				
	Voltage Overshoot	< 5%				
	Line Regulation	± 0.5%				
	Load Regulation	± 1%				
	Start-up Time	0.7S (typical)				
	Rise Time	10ms (typical)				
	Hold Time	>12ms,(18ms typ.) 115/230VAC, full load				
Input	Rated Voltage	100-277VAC				
	Voltage Range	85-305VAC (Refer to derating curve for use)				
	Input Frequency	Rated frequency 50/60Hz , Operating range 47-63Hz				
	Power Factor	>0.98(full load 115/230Vac)				
	Maximum Input Current	4A/115VAC, 2.2A/230VAC, 2A/277VAC				
	No Load Power Consumption (Max)	≤ 2W				
	Inrush Current (Max)	Cold start: 20A/120VAC, 40A/240VAC, 50A/277VAC				
Leakage Current (Max)	0.1mA/240VAC					
Protection	Under Voltage Protection	60-85VAC ± 10%				
	Over Current Protection	130%-180% of rated output current, Hiccup mode, auto recovery				
	Over Voltage Protection	110%-125% of rated output voltage, shut down output, auto recovery on restart				
	Short Circuit Protection	Hiccup mode, auto recovery after fault removal				
	Over Temperature Protection	Primary	Shut down output, auto recovery after temperature decrease			
Secondary		Shut down output, restart after temperature decrease				

Environmental	Operating Temperature, Humidity	-25~+70°C, 20%~90%RH (Non-condensing, refer to derating curve)
	Storage Temperature, Humidity	-40~+85°C, 10%~95%RH
	Temperature Coefficient	± 0.03%/°C
Safety and Electromagnetic Compatibility (EMC)	Safety Standards	Complies with IEC/EN62368- 1, GB4943. 1, EN/ES60601- 1, EN60335- 1
	Electromagnetic Compatibility	CISPR32/EN55032 CLASS B, EN61000-4-2/3/4/6 CLASS B
	Surge Protection	IEC/EN61000-4-5, line to line ± 2KV, line to ground ± 2KV
	Withstand Voltage	I/P-O/P:3750VAC, I/P-FG:1500VAC, O/P-FG: 1500VAC
	Insulation Resistance	I/P-O/P, I/P-FG , O/P-FG: >100M Ohm/500VDC
Other	Fan Auxiliary Power	Voltage 12V ± 15%, Current 0.6A (Voltage varies proportionally with output voltage adjustment)
	Dimensions	L×W×H: 127X76.2X28mm
	Weight	420 ± 20g
Notes	<p>1.* Unless otherwise specified, all typical values are tested at 230VAC input and 25°C ambient temperature.</p> <p>2.*Ripple and noise are measured by connecting a 0.1 μ F ceramic capacitor and a 47 μ F electrolytic capacitor in parallel at the output, using a 20MHz bandwidth oscilloscope.</p> <p>3.* Derating is required at low input voltage; refer to the derating curve for details.</p> <p>4.* The power supply should be regarded as a component within the system. All EMC tests are performed with the unit mounted on a 1mm thick, 360mm x 360mm metal plate. Ensure EMC compliance by verifying with end-use equipment.</p>	

Product Characteristic Curve



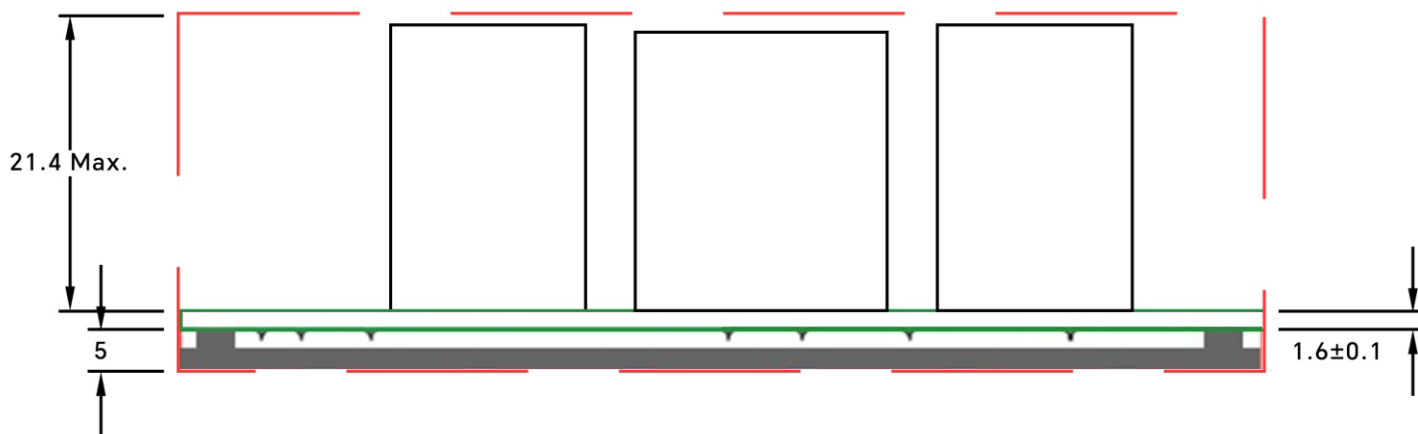
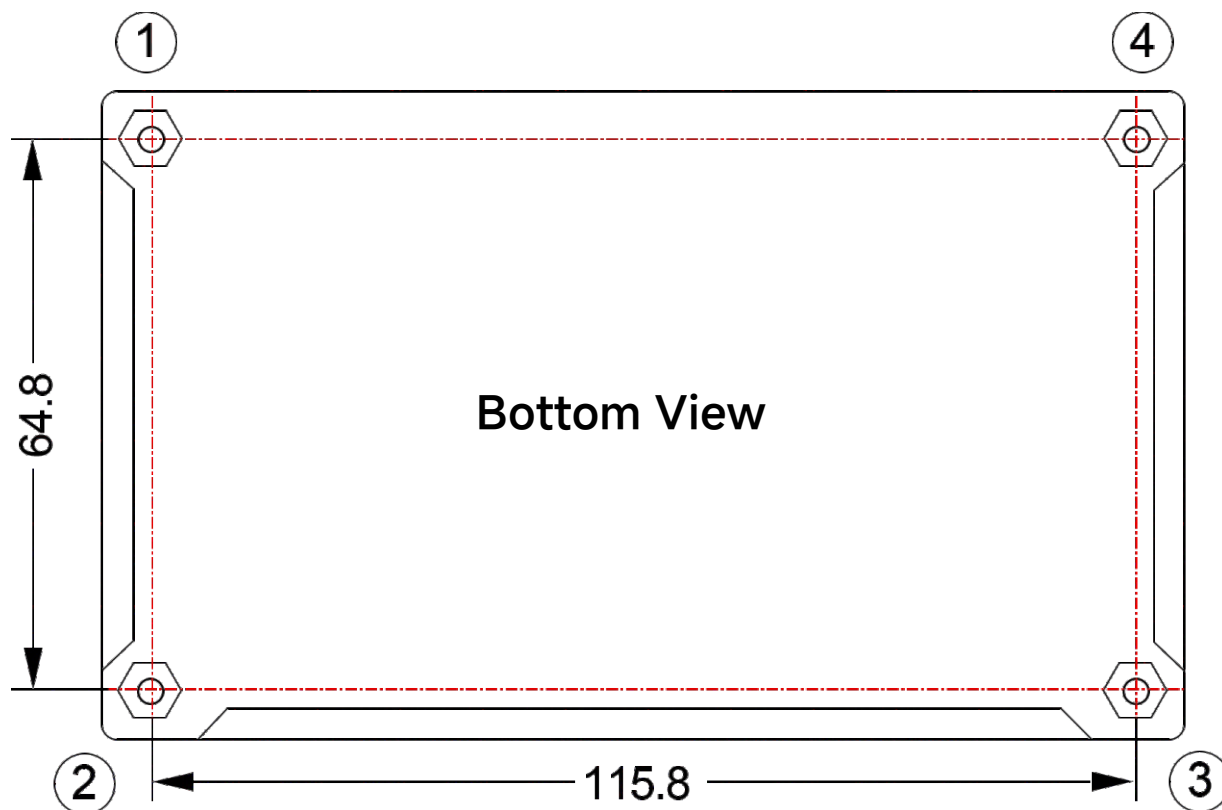
Dimensions



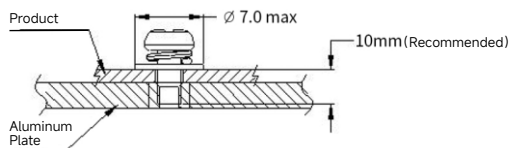
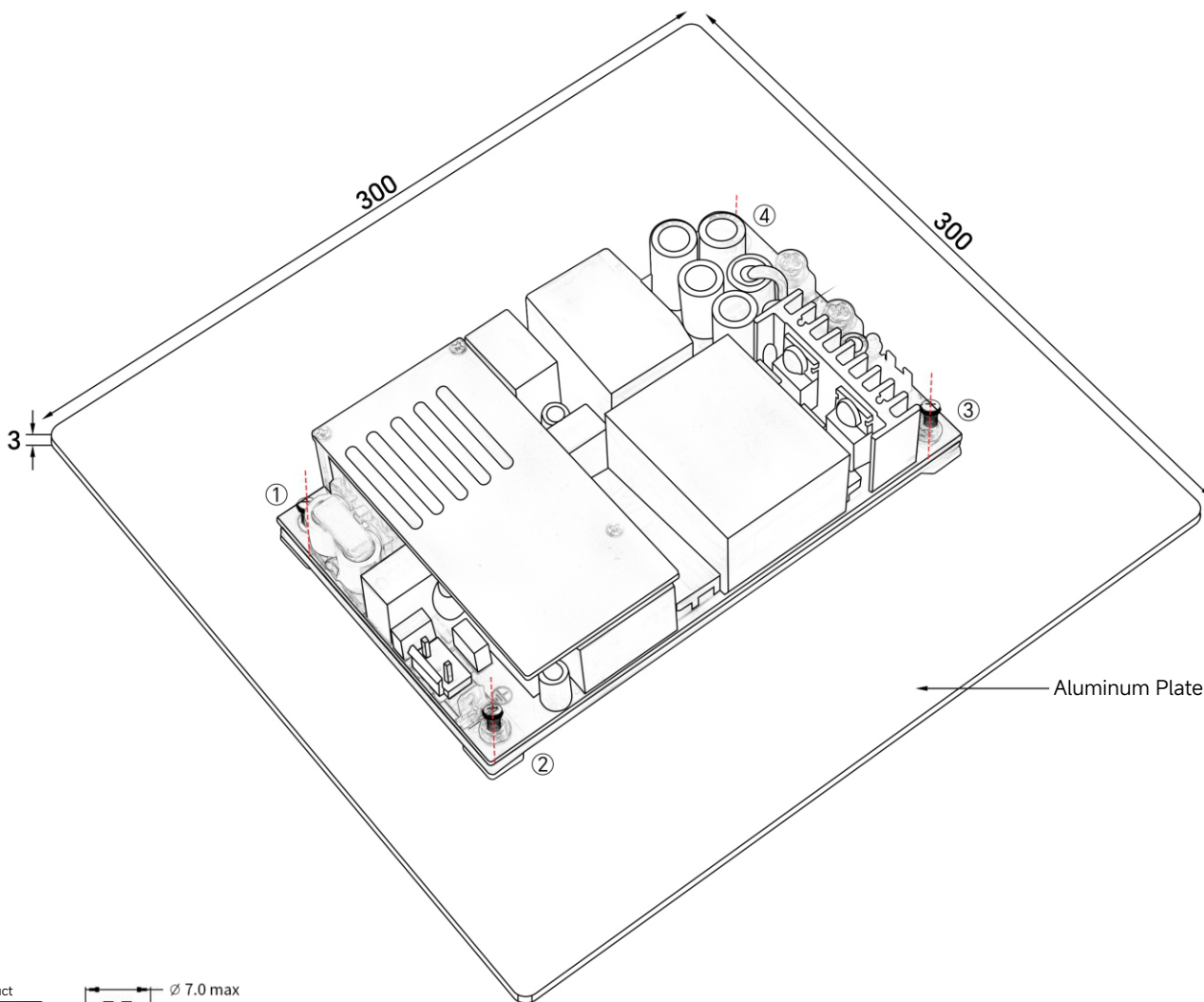
The cooling fan should blow air directly towards the power supply from the side or the top, as shown.

No.	Function	Client-Side Connector
1, 2, 3, 4	Mounting Holes	M3 screws, bottom mounting
5	Input Neutral or DC Negative	JST SVH-21T-P1.1 or equivalent
6	Input Live or DC Positive	
7	Ground Terminal	JST SPS-21T-250 or equivalent
8	Fan Terminal	XH2.54-2P male terminal or equivalent
9	Output Negative	M4 screws
10	Output Positive	M4 screws
11	Adjustable Resistor	Adjusts output voltage

Dimensions




Dimensions



Mounting Position	Screw Specifications	L (Recommended)	Torque (Max)
1-4	M3	10mm	0.4N · m

Note:

- To meet the derating curve requirements, the product must be tested while mounted on an aluminum plate. The recommended size of the aluminum plate is as shown in the diagram. Additionally, to ensure proper heat dissipation, thermal grease must be applied to the bottom of the product.
- The surface of the aluminum plate must be smooth (it is recommended to apply thermal grease). Ensure that the product is securely mounted at the center of the aluminum plate.
- The product's 1-4 mounting holes are already in use. If additional fixation to the aluminum plate is required, screws from the symmetrical corners can be removed and replaced. It is recommended to use screws with a length of 10mm.

 This electronic device must not be disposed of in the household waste at the end of its service life. For your return, there are free collection points for electrical appliances and, if necessary, additional points of acceptance for the reuse of the devices in your area. The addresses can be obtained from your city or communal administration. If the old electrical or electronic device contains personal data, you are responsible for deleting it before you return it. Further information: www.elektrogesetz.de