

User's Manual

ZM450/500-GS



Two Forward Switching Power Supply

※ To ensure safe and easy installation, please read the following precautions.

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Ver. 1.0

1. Warnings and Safety Precautions



Warning

Neglecting the following may cause serious injury or death.

- ▶ Opening the cover of the product while the power cord is plugged into an outlet may cause electrocution or critical damage to the product.
- ▶ Handling the power cord with wet hands may cause electrocution.
- ▶ Inserting fingers or metallic objects into the cooling fan may cause injury or electrocution.



Caution

Neglecting the following may cause minor injuries, degrade product conditions or cause malfunction.

- ▶ Operating the product in an extremely cold or hot environment can degrade product performance and lifespan.
- ▶ Exposure to liquids may cause malfunction.
- ▶ Operation in a humid or non-ventilated environment may reduce product lifespan.
- ▶ Plugging the main power connector P1 into the motherboard while the product is connected to the AC power source may cause damage to the motherboard.
- ▶ Make sure that the connectors are connected to their designated locations, and that the connectors are not oriented in the wrong direction when connecting the DC output connectors.
- ▶ Please use gloves to prevent injuries during installation.
- ▶ Product designs and specifications may be revised without prior notification to improve quality and performance.

Disclaimer) Zalman Tech Co., Ltd. is not responsible for any damages due to external causes, including but not limited to, improper use, problems with electrical power, accident, neglect, alteration, repair, improper installation, or improper testing.

2. Components



Power Supply



Four Screw



Five Cable Ties



AC Power Cord

Manual

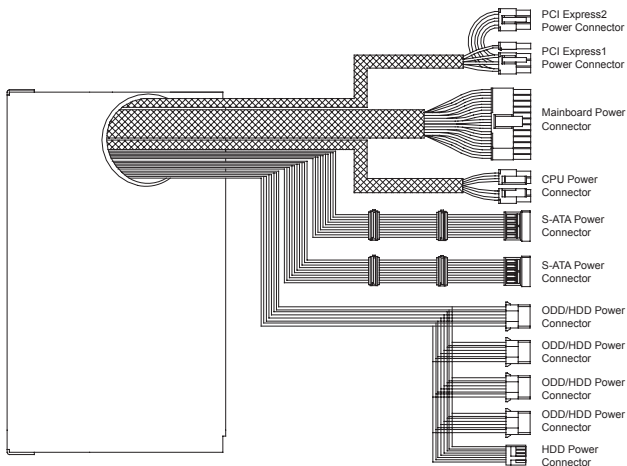
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3. Specifications

1) ZM450-GS Electrical & Physical Specifications

AC Input Range	Voltage	230VAC		V_{out}	Output Load Rating Combined			Combined Power		
	Frequency	50 ~ 60Hz			I_{min}	I_{max}	I_{peak}			
AC Input Current	115VAC	-		+3.3V	0.3A	22A		120W	450W	
	230VAC	4A		+5V	0.5A	18A		360W		
PFC Type	Active PFC			+12V1	0.5A	21A	24A			
Power Factor	MAX 99%			+12V2	0.5A	18A	21A			
Inrush Current Limit (@ Cold start at 25°C)	115VAC	-		-12V	0.0A	0.3A		3.6W		
	230VAC	MAX 100A		+5VSB	0.0A	2.5A	3.0A	12.5W		
Efficiency	MAX 84% @ 230VAC, Typical load			Ambient Temperature						
DC Output Voltage Regulation	V_{out}	Stable Range		At Full Load	Operation		0 ~ +40°C			
	+3.3VDC	±5%	+3.14 ~ +3.47V		Stored		-20 ~ +70°C			
	+5VDC	±5%	+4.75 ~ +5.25V		Ambient Humidity					
	+12V1DC	±5%	+11.4 ~ +12.6V		Operation		20 ~ 90% RH			
	+12V2DC	±5%	+11.4 ~ +12.6V		Stored		5 ~ 95% RH			
	-12VDC	±10%	-10.8 ~ -13.0V		Dimensions					
DC Output Ripple & Noise	V_{out}	Standard Range		At Full Load	Weight					
	+3.3VDC	50mV			1.92kg(Full Package)					
	+5VDC	50mV			Safety Features					
	+12V1DC	120mV			Over-Voltage Protection (OVP)					
	+12V2DC	120mV			Under-Voltage Protection (UVP)					
	-12VDC	120mV			Short-Circuit Protection (SCP)					
+5VSB	50mV		Over-Power Protection (OPP)							

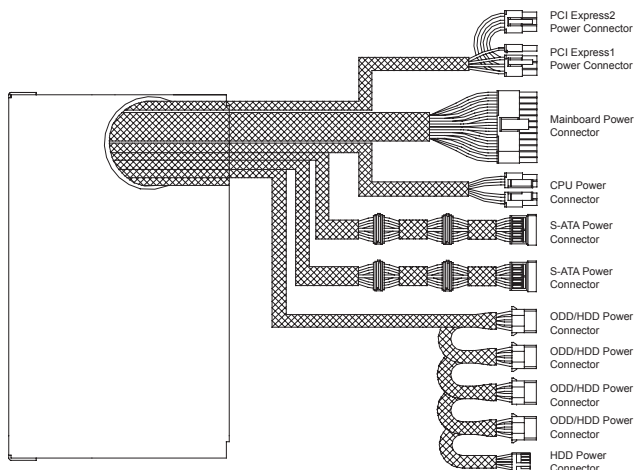
2) ZM450-GS Cable Specifications



3) ZM500-GS Electrical & Physical Specifications

AC Input Range	Voltage	230VAC		V_{out}	Output Load Rating Combined			Combined Power	
	Frequency	50 ~ 60Hz			I_{min}	I_{max}	I_{peak}		
AC Input Current	115VAC	-		+3.3V	0.3A	22A		130W	500W
	230VAC	4A		+5V	0.5A	19A			
PFC Type	Active PFC			+12V1	0.5A	24A	27A	408W	
Power Factor	MAX 99%			+12V2	0.5A	21A	23A		
Inrush Current Limit (@ Cold start at 25°C)	115VAC	-		-12V	0.0A	0.3A		3.6W	
	230VAC	MAX 100A		+5VSB	0.0A	2.5A	3.0A	12.5W	
Efficiency	MAX 84% @ 230VAC, Typical load				Ambient Temperature				
DC Output Voltage Regulation	V_{out}	Stable Range		At Full Load	Operation		0 ~ +40°C		
	+3.3VDC	±5%	+3.14 ~ +3.47V		Stored		-20 ~ +70°C		
	+5VDC	±5%	+4.75 ~ +5.25V		Ambient Humidity				
	+12V1DC	±5%	+11.4 ~ +12.6V		Operation		20 ~ 90% RH		
	+12V2DC	±5%	+11.4 ~ +12.6V		Stored		5 ~ 95% RH		
	-12VDC	±10%	-10.8 ~ -13.0V		Dimensions				
+5VSB	±5%	+4.75 ~ +5.25V	140(L) × 150(W) × 86(H)mm						
DC Output Ripple & Noise	V_{out}	Standard Range		At Full Load	Weight				
	+3.3VDC	50mV			1.92kg(Full Package)				
	+5VDC	50mV			Safety Features				
	+12V1DC	120mV			Over-Voltage Protection (OVP)				
	+12V2DC	120mV			Under-Voltage Protection (JVP)				
	-12VDC	120mV			Short-Circuit Protection (SCP)				
+5VSB	50mV		Over-Power Protection (OPP)						

4) ZM500-GS Cable Specifications



4. Certifications

CB CE



RoHS

