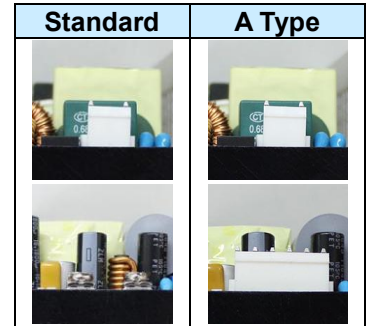


## KEY FEATURES

- Universal Input 90-264Vac
- 240 Watt with 8CFM Forced Air and Natural Convection
- High Efficiency up to 94%
- Safety Approval to UL / IEC / EN 62368-1
- No Load Power Consumption < 0.5W
- -30°C to +80°C Wide Range Operation Temperature
- Operating Altitude 5000M
- Active PFC Function
- I/O Isolation 4000VAC
- Meet 4000VAC Input to Output 2MOPP Insulation
- EMI for Both Class I (with PE) and Class II (without PE) Configuration
- 3-Year Product Warranty



Please refer to the types of terminal block; the pictures shown are for illustration purpose only, actual product may vary.



## ELECTRICAL SPECIFICATIONS

All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

Model No.		VPRF240U-12S	VPRF240U-24S	VPRF240U-48S	
Max Output Wattage (with 8CFM FAN) (W)		240 W			
Max Output Wattage (Conduction Cooling) (W) (Note 6)		240 W			
Max Output Wattage (Natural Convection) (W)		210 W (100 VAC) / 234 W (230 VAC)	215 W (100 VAC) / 240 W (230 VAC)		
Input	Voltage (Note 3)	90-264 VAC			
	Frequency (Hz)	47-63 Hz			
	Current (Full load)	< 3.0 A max. (115 VAC) / < 1.5 A max. (230 VAC)			
	Inrush Current (<2ms)	< 45 A max. (115 VAC) / < 90 A max. (230 VAC)			
	Power Factor	PF>0.9 at Full Load			
	No Load	< 0.5W (115 / 230 VAC)			
Output	Voltage (V.DC.)	12V	24V	48V	
	Voltage Adj Range (V.DC.)	±5% Output Voltage			
	Voltage Accuracy	±2%			
	Current (with 8CFM FAN) (A) (max.)	20	10	5	
	Current (Conduction Cooling) (A) (max.)	20	10	5	
	Current (Natural Convection) (A) (max.)	at 100 VAC	17.5	8.96	4.48
		at 230 VAC	19.5	10	5
	Line Regulation	±1%			
	Load Regulation (0-100%)	±1%			
	Minimum Load	0%			
	Maximum Capacitive Load	8000µF	3000µF	470µF	
	Ripple & Noise (max.) (Note 1)	1% Vout			
	Efficiency (at 230VAC) (Note 5)	92.5%	93%	94%	
Hold-up Time (at 115 VAC) (Note 2)	10 ms min.				
Protection	Over Power Protection	Auto recovery, Hiccup mode			
	Over Voltage Protection	Auto recovery			
	Overt Temperature Protection	Auto recovery			
	Short Circuit Protection	Protection level 1 (nominal) : Continuous, Auto recovery			
Protection level 2 (instantaneous high current) : Latch					
Isolation	Input-Output (Note 4)	4000VAC or 5656VDC			
	Input-PE (Note 4)	2000VAC or 2828VDC			
	Output-PE (Note 4)	1500VAC or 2121VDC			

## ELECTRICAL SPECIFICATIONS

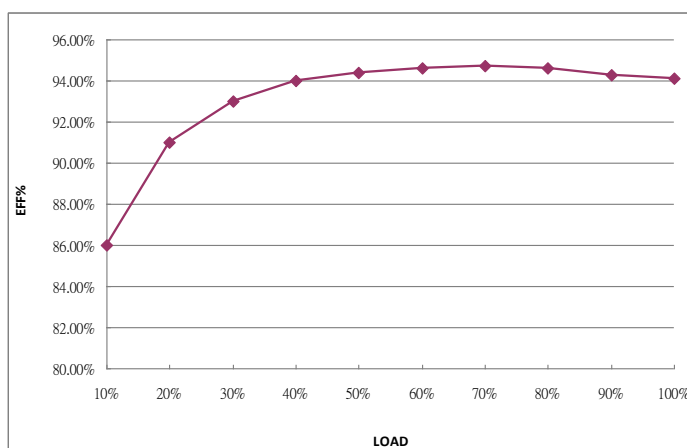
All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

Model No.	VPRF240U-12S	VPR F240U-24S	VPRF240U-48S
Environment	Operating Temperature	-30°C...+80°C (with derating)	
	Storage Temperature	-30°C...+80°C	
	Temperature Coefficient	±0.05%/°C	
	Altitude During Operation	5000m	
	Humidity	20~90% RH	
	MTBF	>250,000 h @ 25°C (MIL-HDBK-217F, Notice 1)	
	Vibration	IEC60068-2-6 (10~500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes)	
	Shock	IEC60068-2-27	
Physical	Dimensions (L x W x H)	4.1 x 2.46 x 1.54 Inches ( 104.0 x 62.5 x 39.2 mm ) Tolerance ±0.5 mm	
	Weight	350 g	
	Cooling Method	Natural Convection / Conduction Cooling / 8CFM FAN	
Safety	Approval	UL 60950 UL / IEC / EN 62368 ( In Progress) (Meet) Medical EN60601	
EMC	Conducted EMI (Note 7)	EN55032 Class B	
	Radiated EMI (Note 7)	EN55032 Class I Class B / Class II Class A	
	EMS	EN55035	

## NOTE

- Ripple & Noise are measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.
- Hold-up Time measured at 90% Vout.
- Please check the derating curve for more details.
- Strongly recommend to conduct this test with DC Voltage. If customer wishes to test with AC Voltage, please disconnect all Y-Capacitors.

5. Vin at 230 VAC & 48 Vout

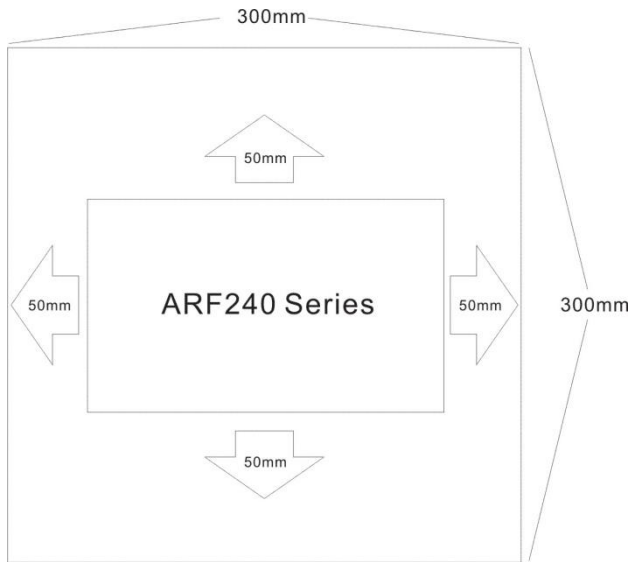


(After 30 minutes of burn-in)

**NOTE**

6. The size of the suggested aluminum plate is shown as below. And for optimizing thermal performance, the aluminum plate must have an even and smooth surface (or coated with thermal grease), and ARF240 series must be firmly mounted at the center of the aluminum plate.

300 x 300 x 3.0 mm

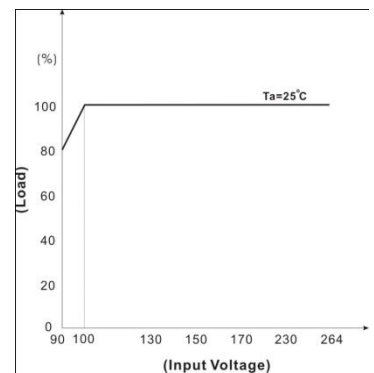
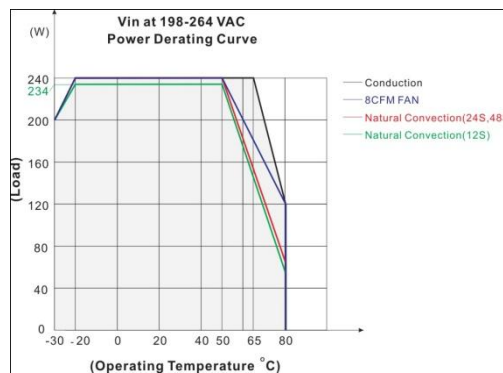
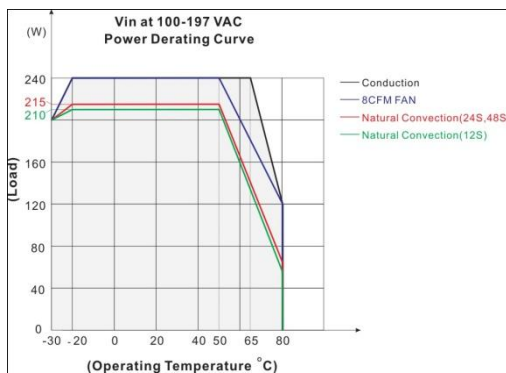


7. Please secure the power supply unit to your metal case by using the four screw holes in the corners for either Class I or Class II equipment

8. The ambient temperature derating of 3.5 /1000m with fanless models and of 5 /1000m with fan models for operating altitude higher than 2000m(6500ft).

9. **CAUTION: Double pole, neutral fusing. Disconnect mains before servicing.**

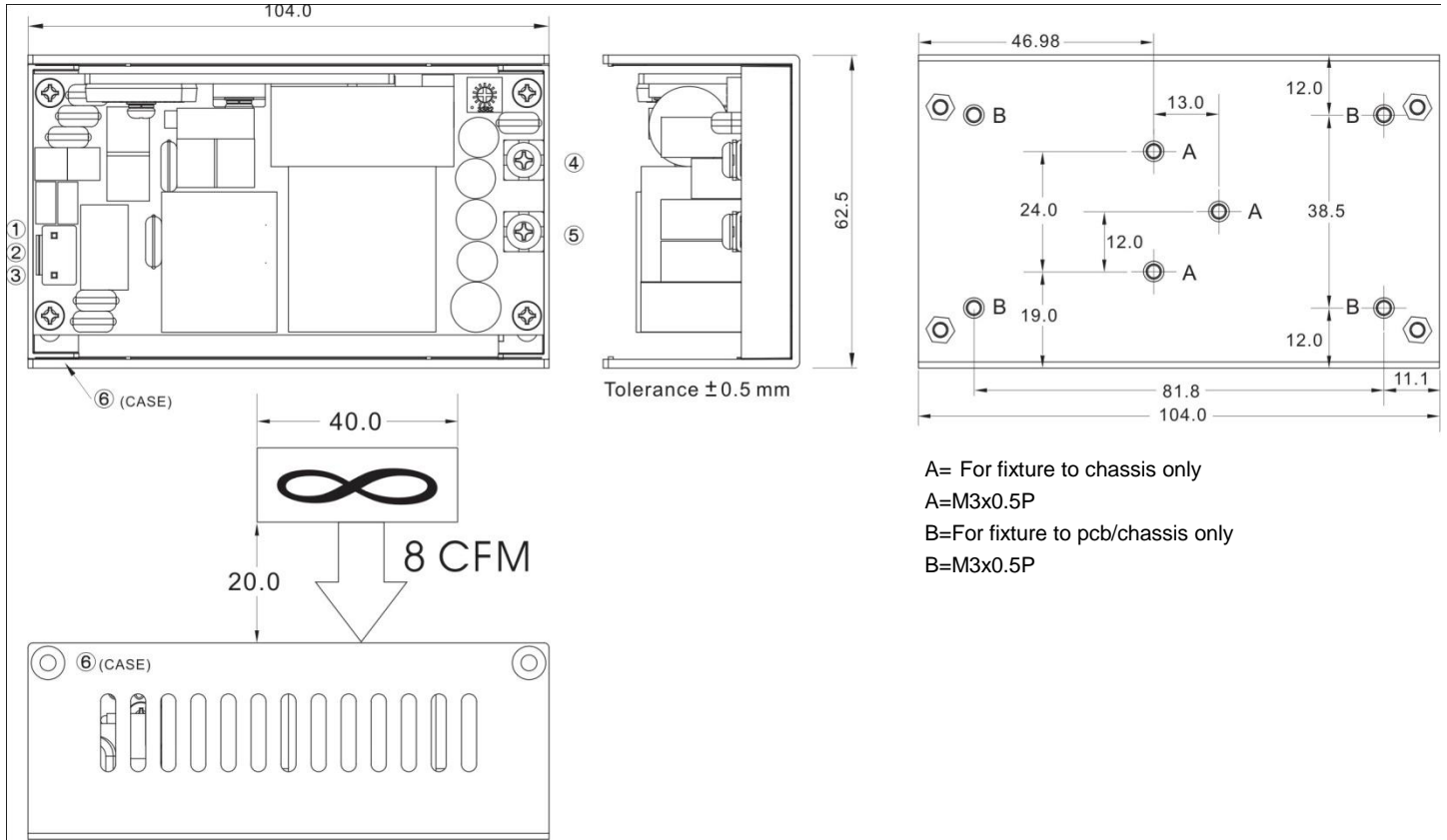
**DERATING**



If input voltage is lower than 100VAC, please refer to the output derating V.S. input voltage curve for details

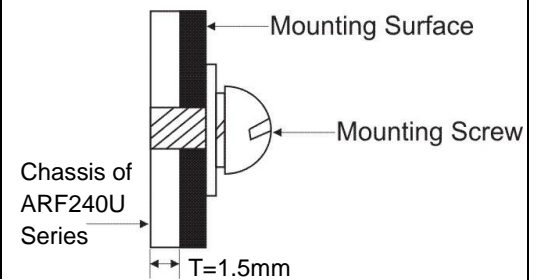
**MECHANICAL DIMENSIONS ( Top View )**

**Standard**



**ASSEMBLY INSTRUCTIONS**

\*U Case T=1.5mm  
Customer is advised to screw into the threads no more than 1.5mm



Brands		Alex		JST	
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal
1	AC IN (N)	9396-3	96T series	VHR-3N	SVH-41T-P1.1
2	NO PIN				
3	AC IN (L)				
4	+DC OUT	Terminal : M3.5 Pan HD screw in 2 positions Torque to 8 lbs-in(90 cNm) max.			
5	-DC OUT				
6	PE	—	—	—	—

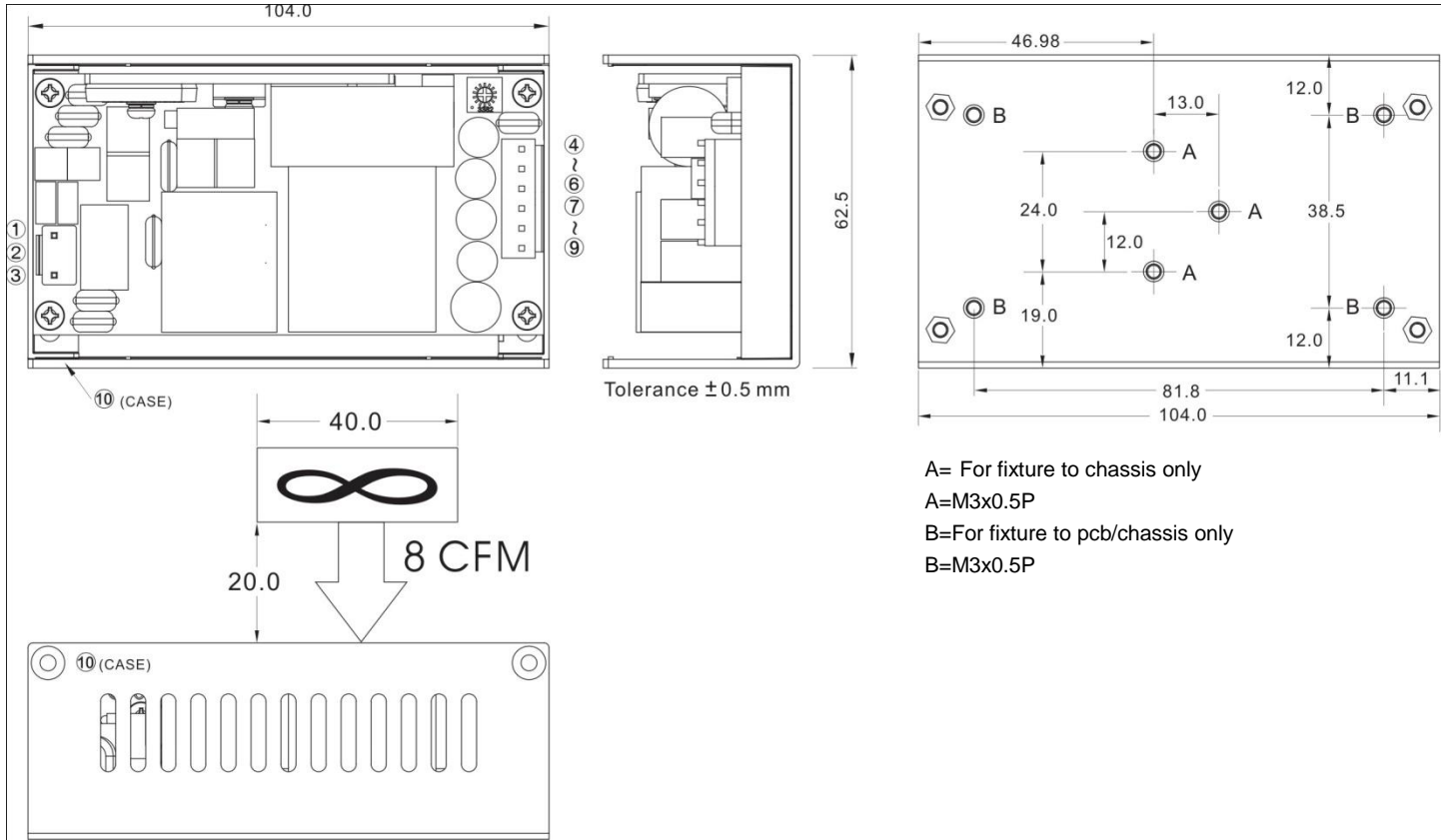
**Standard**



Please refer to the types of terminal block; the pictures shown are for illustration purpose only, actual product may vary.

**MECHANICAL DIMENSIONS ( Top View )**

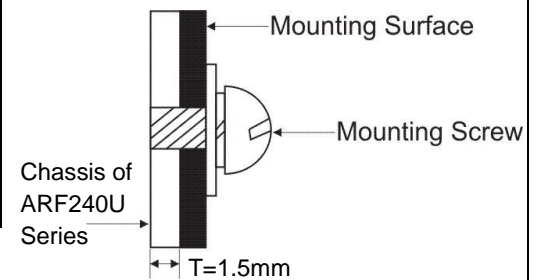
**A Type**



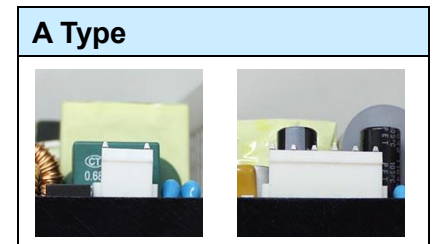
A= For fixture to chassis only  
A=M3x0.5P  
B=For fixture to pcb/chassis only  
B=M3x0.5P

**ASSEMBLY INSTRUCTIONS**

\*U Case T=1.5mm  
Customer is advised to screw into the threads no more than 1.5mm



Brands		Alex		JST	
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal
1	AC IN (N)	9396-3	96T series	VHR-3N	SVH-41T-P1.1
2	NO PIN				
3	AC IN (L)	9396-6	96T series	VHR-6N	SVH-41T-P1.1
4-6	+DC OUT				
7-9	-DC OUT				
10	PE	—	—	—	—



Please refer to the types of terminal block; the pictures shown are for illustration purpose only, actual product may vary.

We reserve the right to make alterations in the product materials and specifications without prior notification and consent to improve reliability, function or design or otherwise.