VER : A_0 update : 2016.12.05

Doc. EA-0321

AC-DC Medical Power Module

VPQC100 SERIES 100 Watts

Your Power House
VP ELECTRONIQUE

KEY FEATURES

- Switching Power Module for PCB Mountable
- 4000VAC Input to Output 2MOPP Insulation
- Cooling by Free Air Convection
- High Efficiency up to 93.5%
- With P.F.C. Function >0.9
- <0.5W No Load Input Power
- Protections: Over Load / Over Voltage / Over Temperature / Short Circuit
- EMI for Both Class I (with FG) and Class II (without FG) Configuration
- Suitable for BF Application with Appropriate System Consideration
- UL / IEC / EN 60601 3.1rd Edition & UL / IEC / EN 60950 AM2 Safety Approvals
- 3-Year Product Warranty

(Pending)

ELECTRICAL SPECIFICATIONS

All specifications valid at 230VAC input voltage, full load and +25°C after warm-up time unless otherwise stated.

Model No.		VPQC100-12S	VPQC100-24S	VPQC100-48S
Max Output Wattage (W)		100 W		
Input	Voltage (Note 3)	90-264 VAC		
	Frequency (Hz)	47-63 Hz		
	Current (Full load)	< 2.0 A max. (115 VAC) / < 1.0 A max. (230 VAC)		
	Inrush Current (<2ms)	< 45 A max. (115 VAC) / < 90 A max. (230 VAC)		
	Leakage Current	< 0.1mA / 264 VAC (Touch Current)		
	Power Factor	PF>0.9 at Full Load		
Output	Voltage (V.DC.)	12V	24V	48V
	Voltage Accuracy	±2%		
	Current (A) max	8.33	4.2	2.1
	Line Regulation	±1%		
	Load Regulation (0-100%)	±1%		
	Minimum Load	0%		
	Maximum Capacitive Load	6000µF	2000µF	330µF
	Ripple & Noise max. (Note 1)	1% Vout		
	Efficiency (at 230VAC) (Note 4)	92.5%	93%	93.5%
	Hold-up Time (at 115 VAC) (Note 2)	10 ms min.		
Protection	Over Power Protection	Auto recovery, Hiccup mode		
	Over Voltage Protection	Zener diode clamp		
	Overt Temperature Protection	Auto recovery		
	Short Circuit Protection	Auto recovery, Hiccup mode		
Isolation	Input-Output	4000VAC or 5656VDC		
	Input-FG	2000VAC or 2828VDC		
	Output-FG	1500VAC or 2121VDC		
Environment	Operating Temperature	-30°C…+70°C (with derating)		
	Storage Temperature	-30°C…+85°C		
	Temperature Coefficient	±0.05%/°C		
	Humidity	95% RH		
	MTBF	>250,000 h @ 25°C (MIL-HDBK-217F, Notice 1)		
	Vibration	10~500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes.		
Physical	Dimension (L x W x H)	4.3 x 2.3 x 1.58 Inches (109.0 x 58.5 x 34.5 mm) Tolerance ±0.5 mm		
	Weight	Pending		
	Cooling Method	Free convection		

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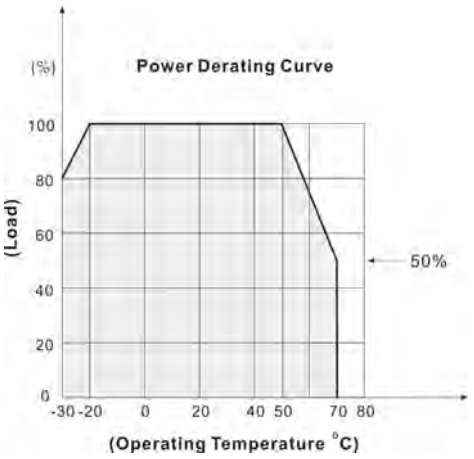
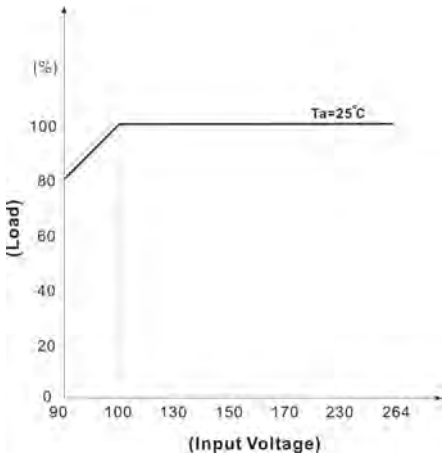
Safety	Approval	UL / IEC / EN 60601 3.1rd Edition & UL / IEC / EN 60950 AM2		
EMC	Conducted and radiated EMI (Note 5)	EN55011 Conducted & Radiated Class B		
	ESD	EN61000-4-2 air ± 8kV , Contact ± 4Kv (Pending)		
	Radiated Immunity	EN61000-4-3 10V/m (Pending)		
	Fast Transient	EN61000-4-4 ± 2kV (Pending)		
	Surge	EN61000-4-5 ±1kV (Pending)		
	Conducted Immunity	EN61000-4-6 10Vrms (Pending)		
	PFMF	EN61000-4-8 30A/m (Pending)		
	Dips	EN61000-4-11 30% 10ms (Pending)		
	Interruption	EN61000-4-11 >95% 5000ms (Pending)		

NOTE

1. Ripple & Noise are measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.
2. Hold-up Time measured at 90% Vout.
3. Please check the derating curve for more details.
4. After 30 minutes of burn-in
5. 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
6. Please refer to our PDF file "AC-DC Application" .
7. **This product is not designed for use in critical life support systems, equipment used in hazardous environment, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other the ones listed in this datasheet.**

DERATING





TRIM

	12S			24S			48S		
Trim → -V	+5%		0%	+5%		0%	+5%		0%
	34K Ω	~	10M	37.4K Ω	~	10M	38K Ω	~	10M
Trim → +V	0%		-5%	0%		-5%	0%		-5%
	10M	~	106K Ω	10M	~	270K Ω	10M	~	640K Ω

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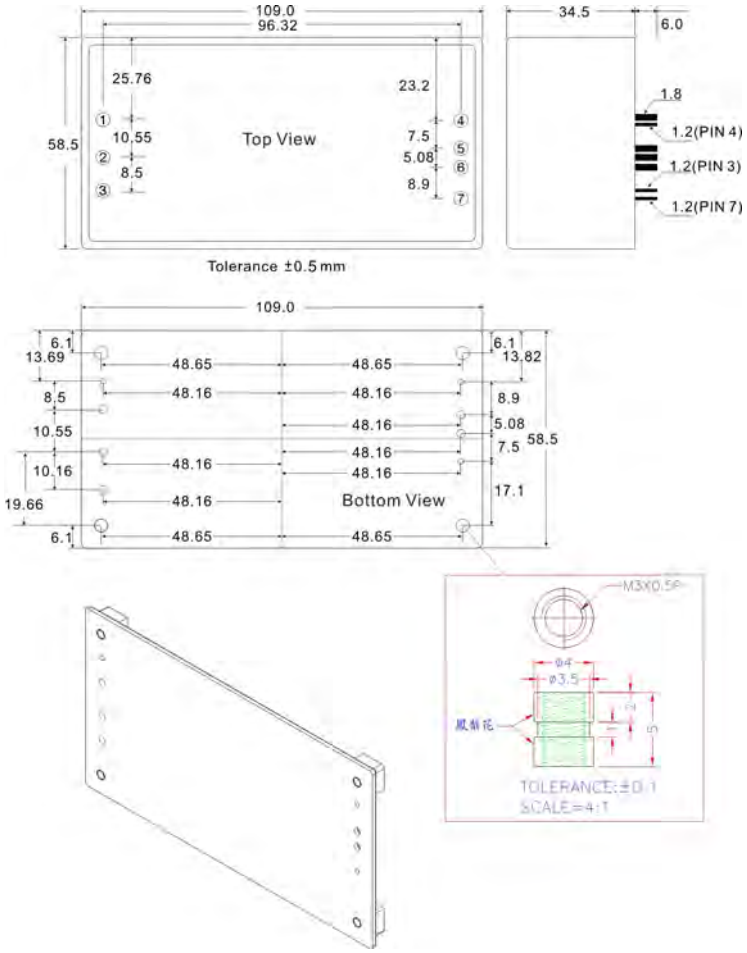
MECHANICAL DIMENSION (Top View)



PIN#	Φ	Single
1	1.2±0.1%mm	AC IN (N)
2	1.2±0.1%mm	AC IN (L)
3	1.2±0.1%mm	FG
4	1.2±0.1%mm	ON / OFF (Provide +5Vdc Controlled)
5	1.8±0.1%mm	+DC OUT
6	1.8±0.1%mm	-DC OUT
7	1.2±0.1%mm	Trim

Remark:

Please reserve the pin 4 hole on PCB.

If the remote on/off function is not required, please connect the pin 4 circuit layout with pin6, or keep pin 4 floating.

BLOCK DIAGRAM