

**KEY FEATURES**

- Universal Input Range 90-305VAC, 47-63 Hz
- I/O Isolation 4500VAC
- Operating Ambient Temperature Range -40°C to +85°C
- No Load Power Consumption < 0.1W
- 5000m Altitude Application
- Over-Voltage Category OVC III EN 61558 (New Edition)
- High Efficiency up to 87%
- Isolation Class II
- EMC Compliant without External Components
- Safety Approval to UL / IEC / EN 62368-1, EN 60335-1, EN 61558-2-16
- 3-Year Product Warranty



**ELECTRICAL SPECIFICATIONS**

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

Model No. ( Single Output )	VPCV20-5S	VPCV20-12S	VPCV20-15S	VPCV20-24S	
Max Output Wattage (W)	20W				
Input	Voltage	85-305 VAC or 120-430 VDC			
	Frequency (Hz)	47-63 Hz			
	Current (Full load)	385 mA max. (115 VAC) / 250 mA max. (230 VAC)			
	Inrush Current (Cold Start)	30 A max. (115 VAC) / 60 A max. (230 VAC)			
	No Load Power Consumption	< 0.1W (at 90-264 VAC)			
	External Fuse (mandatory)	2 A slow blow type			
Output	Voltage (V.DC.)	5V	12V	15V	24V
	Voltage Accuracy	±2%			
	Current (mA) max	4000	1670	1330	833
	Maximum Capacitive Load	In Progress	In Progress	In Progress	In Progress
	Minimum Load	0%			
	Line Regulation (LL-HL) (typ.)	±0.5%			
	Load Regulation (typ.)	±1%			
	Ripple & Noise (Full load)	120mV (Vp-p)		1% of Vout	
	Efficiency (at 230VAC)	85%	86%	87%	87%
	Hold-up Time(typ)	6 ms (at 115VAC) / 46 ms (at 230VAC)			
Protection	Over Power Protection	Hiccup technique, auto-recovery			
	Over Voltage Protection	Zener diode clamp			
	Short Circuit Protection	Hiccup mode, indefinite (automatic recovery)			
Isolation	Input-Output (V.AC)	4500V			
Environment	Operating Temperature	-40°C...+85°C (with derating)			
	Storage Temperature	-40°C...+85°C			
	Temperature Coefficient	±0.05%/°C			
	Humidity	95% RH			
	MTBF	>400,000 h @ 25°C (MIL-HDBK-217F)			
	Over Voltage Category	III: Compliance to EN 61558; altitude up to 2000 meters.			
Physical	Dimensions (L x W x H)	2.07 x 1.08 x 0.93 Inches ( 52.5 x 27.5 x 23.5 mm ) Tolerance ±0.5 mm			
	Case Material	Plastic resin (flammability to UL 94V-0)			
	Weight	62 g			
	Cooling Method	Free air convection			
Safety	Agency Approvals	UL / IEC / EN 62368-1, EN 60335-1, EN 61558-2-16 (In Progress)			
EMC	EMI (Conducted & Radiated Emission)	EN 55032 class B (In Progress)			
	EMS (Noise Immunity)	EN 55035 (In Progress)			

**ELECTRICAL SPECIFICATIONS**


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

Model No. ( Dual Output )	VPCV20-5S12S		VPCV20-12D		VPCV20-15D		
Max Output Wattage (W)	18.4W		20W				
Input	Voltage	985-305 VAC or 120-430 VDC					
	Frequency (Hz)	47-63 Hz					
	Current (Full load)	385 mA max. (115 VAC) / 250 mA max. (230 VAC)					
	Inrush Current (Cold Start)	30 A max. (115 VAC) / 60 A max. (230 VAC)					
	No Load Power Consumption	< 0.1W (at 90-264 VAC)					
	External Fuse (mandatory)	2 A slow blow type					
Output		Output 1	Output 2	Output 1	Output 2	Output 1	Output 2
	Voltage (V.DC.)	5V	12V	+12V	-12V	+15V	-15V
	Voltage Accuracy	±2%					
	Current (mA) max	2000	700	833	833	666	666
	Maximum Capacitive Load	In Progress		In Progress		In Progress	
	Minimum Load	25%					
	Line Regulation (LL-HL) (typ.)	±5%					
	Load Regulation (typ.)	±5%					
	Ripple & Noise (Full load)	150mV (Vp-p)				1% of Vout	
	Efficiency (at 230VAC)	78%		82%		82%	
	Hold-up Time(typ)	6 ms (at 115VAC) / 46 ms (at 230VAC)					
Protection	Over Power Protection	Hiccup technique, auto-recovery					
	Over Voltage Protection	Zener diode clamp					
	Short Circuit Protection	Hiccup mode, indefinite (automatic recovery)					
Isolation	Input-Output (V.AC)	4500V					
Environment	Operating Temperature	-40°C...+85°C (with derating)					
	Storage Temperature	-40°C...+85°C					
	Temperature Coefficient	±0.05%/°C					
	Humidity	95% RH					
	MTBF	>400,000 h @ 25°C (MIL-HDBK-217F)					
	Over Voltage Category	III: Compliance to EN 61558; altitude up to 2000 meters.					
Physical	Dimensions (L x W x H)	2.07 x 1.08 x 0.93 Inches ( 52.5 x 27.5 x 23.5 mm ) Tolerance ±0.5 mm					
	Case Material	Plastic resin (flammability to UL 94V-0)					
	Weight	62 g					
	Cooling Method	Free air convection					
Safety	Agency Approvals	UL / IEC / EN 62368-1, EN 60335-1, EN 61558-2-16 (In Progress)					
EMC	EMI (Conducted & Radiated Emission)	EN 55032 class B (In Progress)					
	EMS (Noise Immunity)	EN 55035 (In Progress)					

**NOTE**

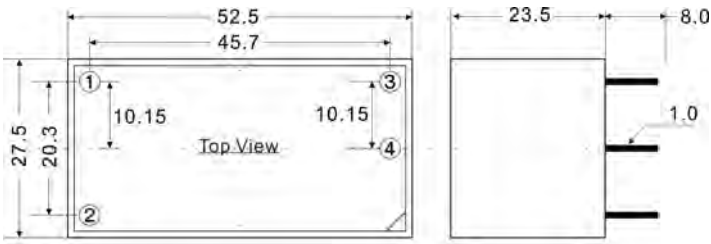
1. Ripple & Noise are measured at 20MHz of bandwidth with 0.1 uF & 47uF parallel capacitor.

2.  **SMPS** incorporating a short-circuit-proof safety isolating transformer (non-inherently)

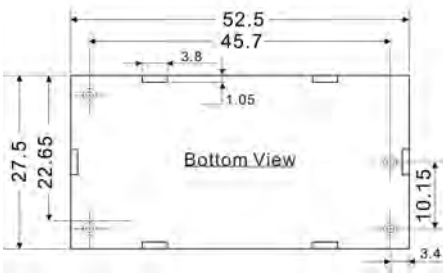
3.  **SMPS** (Switching mode power supply unit)

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

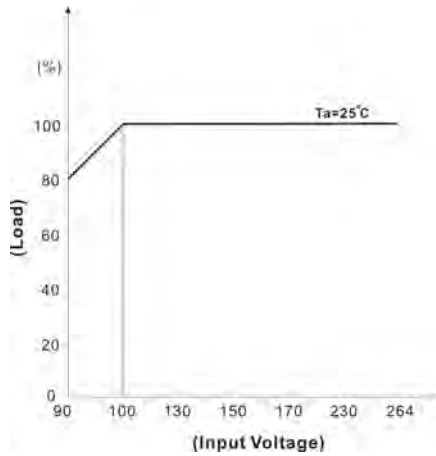
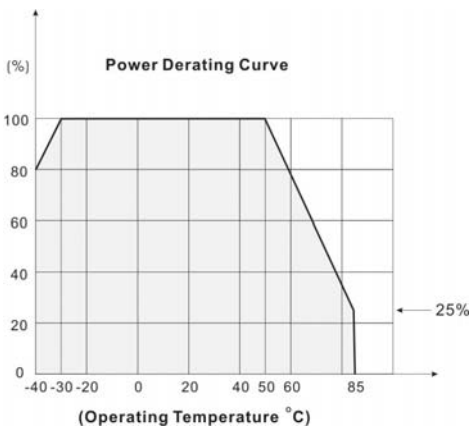
**MECHANICAL DIMENSIONS ( Top View )**



PIN#	Single
1	AC IN (L)
2	AC IN (N)
3	+DC OUT
4	-DC OUT



**DERATING**



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.