

## KEY FEATURES

- Switching Power Module for PCB Mountable
- Fully Encapsulated Plastic Case
- Universal Input Range 90-264VAC, 47-440 Hz
- Regulated Output
- Low Ripple and Low Noise
- Isolation Class II
- Low Standby <0.5W
- Small Size as AFC 10Watt with 20Watt Higher Power
- CE, CB and UL Approval
- 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.

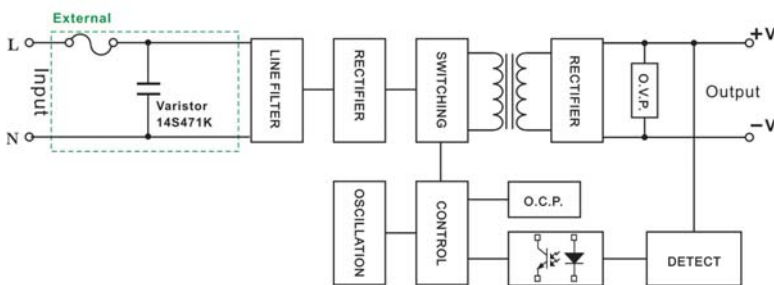
Model No.	VPFC20-3.3S	VPFC20-5S	VPFC20-12S	VPFC20-15S	VPFC20-24S
Max Output Wattage (W)	11.88W	18W	20W	20W	20W
Input	Voltage				
	90-264 VAC or 120-370 VDC				
	Frequency (Hz)				
	47-440 Hz				
	Current (Full load)				
385 mA max. (115 VAC) / 250 mA max. (230 VAC)					
Inrush Current (<2ms, Cold Start)					
20 A max. (115 VAC) / 40 A max. (230 VAC)					
External Fuse (mandatory)					
2 A slow blow type					
Output	Voltage (V.DC.)				
	3.3V	5V	12V	15V	24V
	Voltage Accuracy				
	±2%				
	Current (mA) max				
	3600	3600	1660	1330	833
	Maximum Capacitive Load (at 230VAC)				
	4500uF	3500uF	470 uF	330uF	47uF
	Minimum Load				
	0%				
	Line Regulation (LL-HL) (typ.)				
±0.5%					
Load Regulation (5-100%) (typ.)					
±1%					
Ripple (Full load)			1% of Vout		
75mV max (Vp-p)					
Noise (Full load)			1% of Vout		
120mV max (Vp-p)					
Efficiency		74%	78%	82%	83%
Hold-up Time(typ)					
12 ms (115VAC) / 56ms (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)				
3000V					
Environment	Operating Temperature				
	-40°C...+70°C (with derating)				
	Storage Temperature				
	-40°C...+85°C				
	Temperature Coefficient				
±0.02%/°C					
Humidity 95%					
RH					
MTBF					
>400,000 h @ 25°C (MIL-HDBK-217F)					
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 59g					
Cooling Method					
Free air convection					
Safety	Agency Approvals				
CE, UL/cUL, CB					
EMC	EMI (Conducted & Radiated Emission)				
	EN 55032 class B				
EMS (Noise Immunity)					
EN 55024					

### NOTE

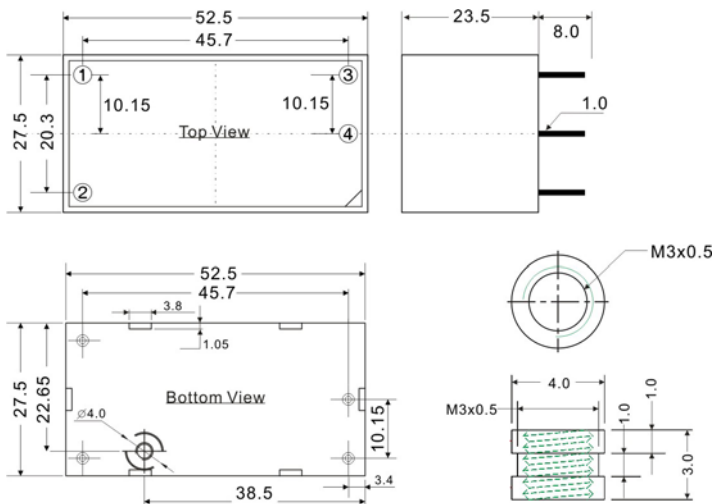
1. Ripple & Noise are measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.
2. It's recommended to add Varistor 14S471K at L / N input side in parallel.

### BLOCK DIAGRAM

Single Output



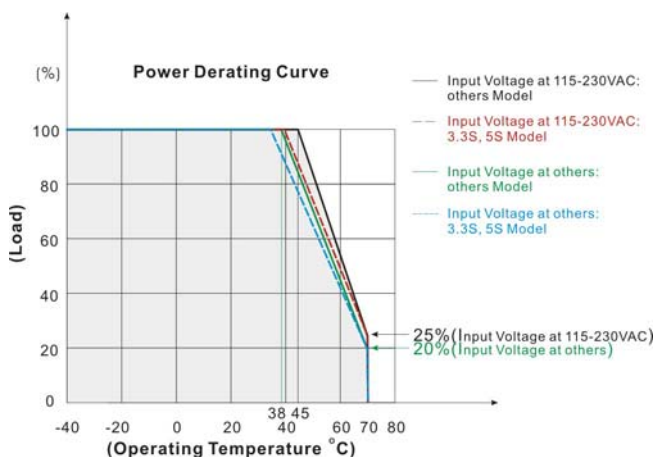
### MECHANICAL DIMENSIONS ( Top View )



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

### DERATING

Maximum Torque 1 2 { 1 . 2 1 } ( k g f . c m { N . m } )

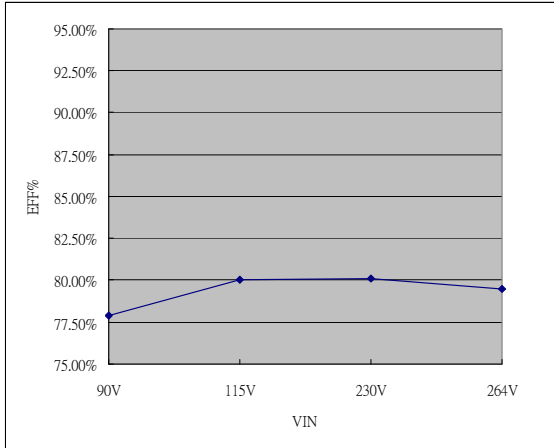


**EFFICIENCY VERSUS LOAD**

**VPFC20-5S (Full Load & Temperature: 25°C)**

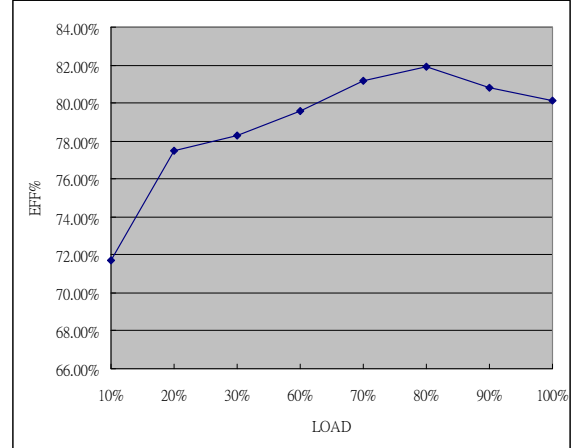
VIN VS Ef ficiency

Input Voltage (V)	90	115	230	264
Efficiency ( %)	77.90	80.00	80.10	79.50



LOAD VS Ef ficiency

Load (%)	10	20	30	60	70	80	90	100
230V (%)	71.7	77.5	78.3	79.6	81.2	81.9	80.8	80.1



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.