

## 3. INPUT

General Condition: Tamb = -25 to 70°C unless otherwise noted.

PARAMETER	DESCRIPTION / CONDITION	MIN	NOM	MAX	UNIT
$V_{i\ nom}$	Nominal Input Voltage	100		240	VAC
$V_i$	Input Voltage Ranges	Normal operating ( $V_{i\ min}$ to $V_{i\ max}$ )		264	VAC
$I_{i\ max}$	Max Input Current			10	$A_{rms}$
$I_{i\ p}$	Inrush Current Limitation <sup>1</sup> (Cold start)	$V_{i\ min}$ to $V_{i\ max}$ , 90°(Phase), $T_{NTC} = 25^\circ C$		50	$A_p$
$F_i$	Input Frequency	47	50/60	63	Hz
PF	Power Factor	$V_{i\ nom}$ , 50Hz, $I_{1\ nom}$			W/VA
$V_{i\ on}$	Turn-on Input Voltage	Brown in		90	VAC
$V_{i\ off}$	Turn-off Input Voltage	Brown out		85	VAC
$\eta$	Efficiency without Fan	$V_{i\ nom}$ , $0.2 \cdot I_{x\ nom}$ , $V_{x\ nom}$ , $T_A = 25^\circ C$		92	
		$V_{i\ nom}$ , $0.5 \cdot I_{x\ nom}$ , $V_{x\ nom}$ , $T_A = 25^\circ C$		94.3	%
		$V_{i\ nom}$ , $I_{x\ nom}$ , $V_{x\ nom}$ , $T_A = 25^\circ C$		93.5	
$T_{hold}$	Hold-up Time	After last AC zero point, $V_1 > 10.8\ V$ , $V_{SB}$ within regulation, $V_i = 230\ VAC$ , $P_{x\ nom} \times 60\%$		24	ms

<sup>1</sup> The charging currents for X capacitors are not considered as in-rush current

### 3.1 EFFICIENCY

The power supply module efficiency should meet at least 80Plus Platinum rating, the efficiency should be measured at 230 VAC and with external fan power according to 80Plus efficiency measurement specifications.

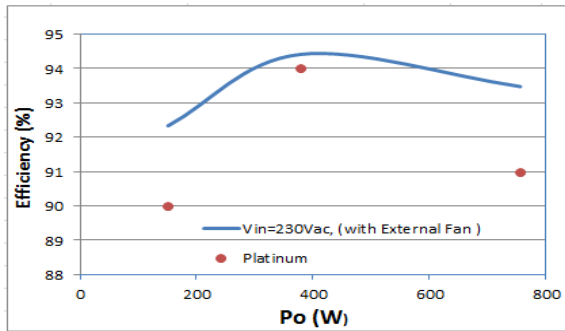


Figure 2. Efficiency vs. Load current (ratio metric loading)

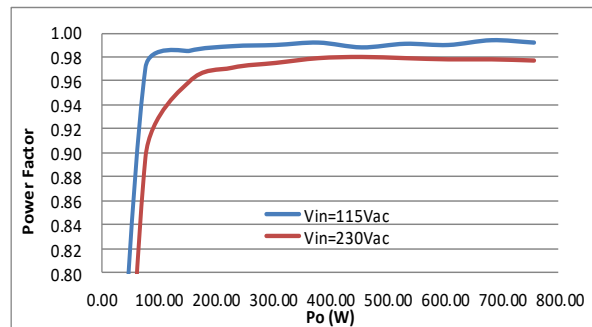


Figure 3. Power factor vs. Load current

## 4. OUTPUT

### 5.1 MAIN OUTPUT $V_1$

General Condition:  $T_a = 0 \dots +50 \text{ }^\circ\text{C}$  unless otherwise noted.

PARAMETER	DESCRIPTION / CONDITION	MIN	NOM	MAX	UNIT	
<b>Main Output <math>V_1</math></b>						
$V_{1 \text{ nom}}$	Nominal Output Voltage	$0.5 \cdot I_{1 \text{ nom}}, T_{\text{amb}} = 25 \text{ }^\circ\text{C}$		12.0	VDC	
$V_{1 \text{ set}}$	Output Setpoint Accuracy	-0.5		+0.5	% $V_{1 \text{ nom}}$	
$P_{1 \text{ nom}}$	Nominal Output Power	$V_1 = 12\text{V}$		744	W	
$I_{1 \text{ nom}}$	Nominal Output Current <sup>3</sup>	Input voltage 165-264 VAC		62	ADC	
		Input voltage 90-164 VAC		43		
$V_{1 \text{ pp}}$	Output Ripple Voltage <sup>2</sup>	$V_{1 \text{ nom}}, I_{1 \text{ nom}}, 20\text{MHz BW}$ (See Section 4.1)		120	mVpp	
$dV_{1 \text{ Load}}$	Load Regulation	$V_i = V_{1 \text{ nom}}, 0 - 100 \% I_{1 \text{ nom}}, T_{a \text{ min}} \text{ to } T_{a \text{ max}}$		-2	+2	% $V_{1 \text{ nom}}$
$dV_{1 \text{ Line}}$	Line Regulation	$V_i = V_{1 \text{ min}} \dots V_{1 \text{ max}}, T_{a \text{ min}} \text{ to } T_{a \text{ max}}$		-1	+1	% $V_{1 \text{ nom}}$
$dI_{\text{share}}$	Current Sharing	Deviation from $I_{1 \text{ tot}} / N, I_1 > 10\%$		-5	+5	ADC
$dV_{\text{dyn}}$	Dynamic Load Regulation	$\Delta I_1 = 50\% I_{1 \text{ nom}}, I_1 = 5 \dots 100\% I_{1 \text{ nom}}, dI_1/dt = 1\text{A}/\mu\text{s}$ , recovery within 1% of $V_1 \text{ nom}$		-5	+5	% $V_{1 \text{ nom}}$
$T_{\text{rec}}$	Recovery Time			2	ms	
$C_{V1 \text{ Load}}$	Capacitive Loading	$T_a = 25^\circ\text{C}$		11000	$\mu\text{F}$	
<b>Standby Output <math>V_{\text{SB}}</math></b>						
$V_{\text{SB nom}}$	Nominal Output Voltage	$0.5 \cdot I_{\text{SB nom}}, T_{\text{amb}} = 25^\circ\text{C}$		5.0	VDC	
$V_{\text{SB set}}$	Output Setpoint Accuracy	-0.5		+0.5	% $V_{1 \text{ nom}}$	
$dV_{\text{SB tot}}$	Total Regulation	$V_i \text{ min to } V_i \text{ max}, 0 \text{ to } 100\% I_{\text{SB nom}}, T_{a \text{ min}} \text{ to } T_{a \text{ max}}$		-1.5	+1.5	% $V_{\text{SB nom}}$
$P_{\text{SB nom}}$	Nominal Output Power			15	W	
$I_{\text{SB nom}}$	Nominal Output Current			3	ADC	
$V_{\text{SB pp}}$	Output Ripple Voltage <sup>2</sup>	$V_{\text{SB nom}}, I_{\text{SB nom}}, 20 \text{ MHz BW}$		50	mVpp	
$dV_{\text{SB}}$	Droop	0 - 100 % $I_{\text{SB nom}}$		90	mV	
$dV_{\text{SB dyn}}$	Dynamic Load Regulation	$\Delta I_{\text{SB}} = 50\% I_{\text{SB nom}}, I_{\text{SB}} = 5 \dots 100\% I_{\text{SB nom}}, dI_{\text{SB}}/dt = 0.5 \text{ A}/\mu\text{s}$ , recovery within 1% of $V_{\text{SB nom}}$		-3	+3	% $V_{\text{SB nom}}$
$T_{\text{rec}}$	Recovery Time			250	$\mu\text{s}$	
$C_{V_{\text{SB load}}}$	Capacitive Loading for $5V_{\text{SB}}$	$T_{\text{amb}} = 25^\circ\text{C}$		350	$\mu\text{F}$	

<sup>2</sup> The output noise and ripple measurement was made with 20MHz bandwidth using a 6-inch twisted pair, terminated with a 10  $\mu\text{F}$  tantalum capacitor in parallel with a 0.1  $\mu\text{F}$  ceramic capacitor. The output ripple voltage on  $V_{\text{SB}}$  is influenced by the main output  $V_1$ . Evaluating  $V_{\text{SB}}$  output ripple must be done when maximum load is applied to  $V_1$ .

<sup>3</sup> The output power derating at low line only for PET750-12-050NA, for RA model no derating required.