

600 Watt

2.4x4.6 Inch Package FB
4:1 Input Range



- o High Efficiency up to 91%
- o Fixed Switching Frequency
- o Input Under-Voltage Protection
- o Over Temperature Protection
- o Over Voltage/Current Protection
- o Remote ON/OFF Control
- o Full-Brick Size meets Industrial Standard
- o Fully Isolated 3000 VAC
- o UL60950-1 Approval
- o Off-Line Systems Using PFC Front-Ends



MODEL NUMBER	INPUT VOLTAGE ¹⁾	OUTPUT VOLTAGE	OUTPUT CURRENT MAX.	INPUT CURRENT		% EFF	CAPACITOR LOAD MAX. ²⁾
				NO LOAD	FULL LOAD		
600FBRS300X12LC	180-425 VDC	12 VDC	50 A	10 mA	2.24 A	89.5	10000 µF
600FBRS300X24LC		24 VDC	25 A		2.21 A	90.5	
600FBRS300X48LC		48 VDC	12.5 A		2.20 A	91	8000 µF

SPECIFICATIONS

All Specifications Typical At Nominal Line, Full Load, and 25°C Unless Otherwise Noted

INPUT SPECIFICATIONS

Input Voltage Range	180-425 VAC		
Under Voltage Lockout	Power Up	170 V	
	Power Down	160 V	
Input Over Voltage Protection	Model on	480 VAC	
	Model off	500 VAC	
Positive Logic Remote ON/OFF	Logic compatibility	open collector refer to -Vin	
	Module On	>3.5 VDC to 75 VDC or open circuit	
	Module Off	<1.2 VDC	
Suffix "N"	Module On	<1.2 VDC	
Negative Logic Remote ON/OFF	Module Off	>3.5 VDC to 75 VDC or open circuit	
Input Filter	Capacitive		

OUTPUT SPECIFICATIONS

Voltage Accuracy	±1.5% max.		
Transient Response	25% Step Load Change	<500 µs	
Load Share Accuracy	±10% at 50% to 100% Full Load		
External Trim Adj. Range ¹⁾	60%-110%		
Auxiliary Output Voltage/Current	10 ±3 VDC / 20 mA max.		
Ripple and Noise at 20 MHz BW ²⁾	12 V	75 mV RMS max. 150 mV p-p max.	
	24 V	120 mV RMS max. 240 mV p-p max.	
	48 V	200 mV RMS max. 480 mV p-p max.	
Temperature Coefficient	±0.03%/°C		
Short Circuit Protection	Continuous		
Line Regulation ³⁾	±0.2% max.		
Load Regulation ⁴⁾	±0.5% max.		
Over Voltage Protection trip Range, % Vo nom.	115-140%		
Current Limit	105% to 125% Nominal Output		
Start Up Time	40 ms		

NOTE:

1. The output adjustment circuit and trim equations show as figure 1 and figure 2 in application notes page 4.
2. Output Ripple and Noise measured with min. capacitor 470 µF and 1 µF ceramic capacitor across output.
3. Measured from High Line to Low Line.
4. Measured from Full Load to Zero Load.
5. An external input capacitor 330 µF for all models are recommended to reduce input ripple voltage.

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GENERAL SPECIFICATION

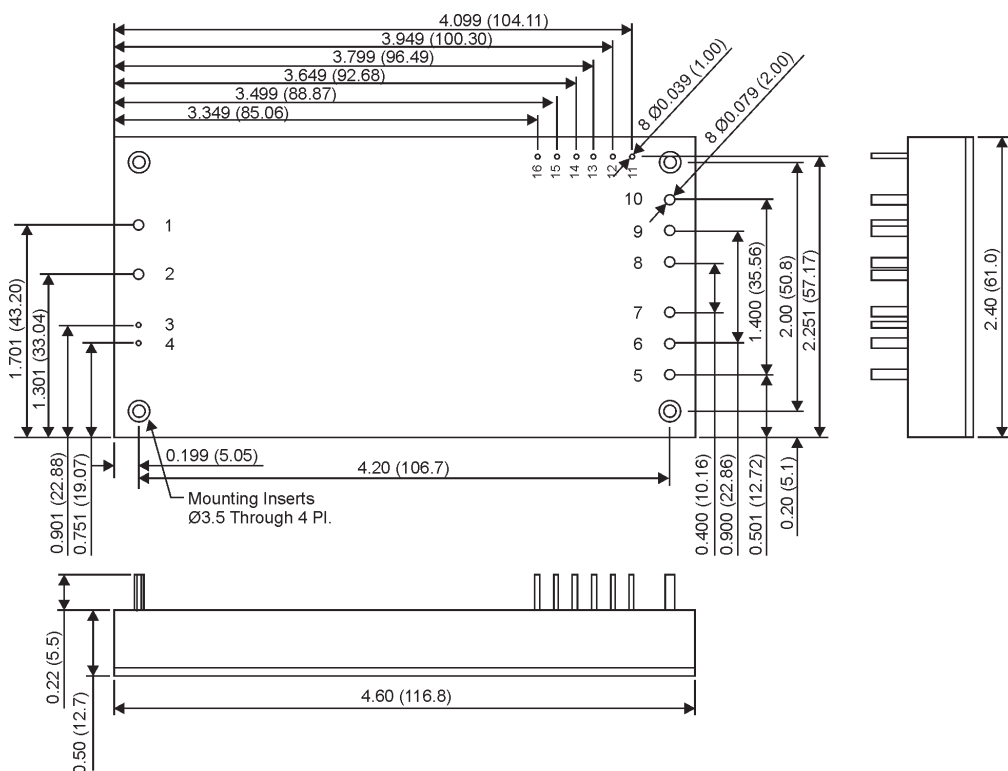
Efficiency		see table
Isolation Voltage	Input / Output	3000 VAC min.
	Input / Case	2500 VAC min.
	Output / Case	500 VAC min.
Isolation Resistance		10 ⁷ Ohms min.
Isolation Capacitance		3100 pF
Switching Frequency		200 kHz
Operating Case Temperature Range		-40°C to +100°C
Storage Temperature Range		-55°C to +105°C
Thermal Shutdown (Case Temperature)		+105°C
Humidity		95% RH max. non condensing
MTBF (MIL-STD-217F, GB, 25°C, Full Load)		420 khrs
Dimensions		4.60x2.40x0.50 Inches (116.8x61.0x12.7 mm)
Case Material		Aluminum Baseplate with Plastic Case
Weight		230 g

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MECHANICAL SPECIFICATIONS

Case „FB“

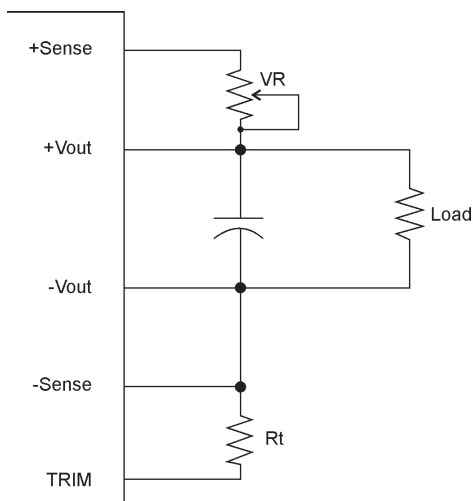


PIN CONNECTIONS	
1	-INPUT
2	+INPUT
3	-REMOTE CONTROL
4	+REMOTE CONTROL
5-7	+OUTPUT
8-10	-OUTPUT
11	-SENSE
12	+SENSE
13	TRIM
14	PC/NC
15	IOG
16	AUX

All Dimensions in Inches (mm)
 Tolerances
 Inches: x.xx = ±0.02, x.xxx = ±0.010
 Millimeters: x.x = ±0.5, x.xx = ±0.25

APPLICATION NOTES

Fig. 1 The schematic of output voltage adjusted by using external resistor and/or variable resistor.



The output voltage can be determined by below equations:

$$V_f = \frac{1.24 \times \left(\frac{R_t \times 33}{R_t + 33} \right)}{7.68 + \left(\frac{R_t \times 33}{R_t + 33} \right)}$$

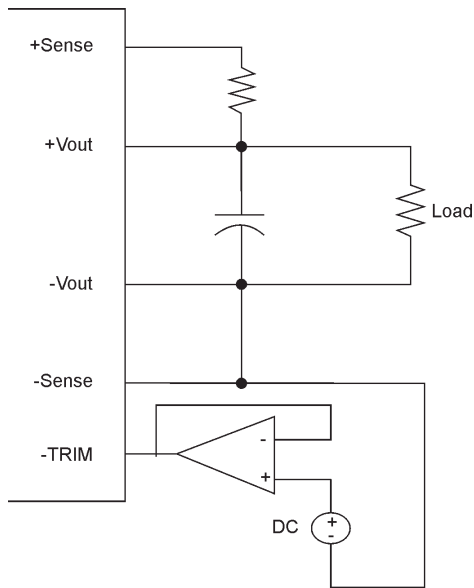
$$V_{out} = (V_o + VR) \times V_f$$

Unit: kOhms
 Vo: Nominal Output Voltage
 Rt = 6.8 kOhms

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Fig. 2 The schematic of output voltage adjusted by using external DC voltage.



$$\text{Output Voltage} = \text{TRIM Terminal Voltage} * \text{Nominal Output Voltage}$$

NOTICE:

The information in this document has been carefully checked. However, no responsibility is assumed for inaccuracies! Specifications can be changed without notice. The latest and most complete information can be found on our website.