CFB600-300S SERIES 600 WATT 2:1 INPUT DC-DC CONVERTERS

E176177

FEATURES

* 600W Isolated Output
* Efficiency to 91%
* Fixed Switching Frequency
* Input Under-Voltage Protection
* Over Temperature Protection
* Over Voltage/Current Protection
* Remote On/Off
* Single Wire Parallel
* Industry Full-Brick Package
* UL 60950-1 Approval
* Fully Isolated 3000VAC
* Safety Meets IEC/EN/UL 62368-1

MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT		INPUT CURRENT		% Eff.	CAPACITIVE LOAD MAX.
			MIN.	MAX.	NO LOAD	FULL LOAD		
CFB600-300S12	180-425 VDC	12 VDC	0 mA	50 A	10 mA	2.24 A	89.5	10000uF
CFB600-300S24	180-425 VDC	24 VDC	0 mA	25 A	10 mA	2.21 A	90.5	10000uF
CFB600-300S48	180-425 VDC	48 VDC	0 mA	12.5 A	10 mA	2.20 A	91	8000uF

NOTE:

1. Nominal Input Voltage 300 VDC.
2. The output terminal required a minimum capacitor 470uF to maintain specified regulation.
3. Measure at Nominal Input Voltage.

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SPECIFICATIONS

All Specifications Typical at Nominal Line, Full Load, and 25℃ Unless Otherwise Noted

INPUT SPECIFICATIONS:

Input Voltage Range ..... 300V 180-425V
Input Over Voltage Protection ..... module on 480V
module off 500V
Under Voltage Lockout ..... 300Vin power up 170V
300Vin power down 160V
Positive Logic Remote On/Off (note5&6)
Input Filter ..... Capacitive

OUTPUT SPECIFICATIONS:

Voltage Accuracy ..... ±1.0% max.
Transient Response: 25% Step Load Change ..... <500μs
External Trim Adj. Range (note4) 60-110%
Load Share Accuracy ..... ±10% at 50% to 100% Full Load
Auxiliary Output Voltage/Current ..... 10±3Vdc/20mA max.
Ripple & Noise, 20MHz BW (note3)
12V ..... 75mV RMS max., 150mV pk-pk max.
24V ..... 120mV RMS max., 240mV pk-pk max.
48V ..... 200mV RMS max., 480mV pk-pk max.
Temperature Coefficient ..... ±0.03%/°C
Short Circuit Protection ..... Continuous
Line Regulation (note1) .....±0.2% max.
Load Regulation (note2) ..... ±0.5% max.
Over Voltage Protection Trip Range, %Vo Nom. 115-140%
Current Limit ..... 105%-125% Nominal Output
Start up Time ..... 40ms typ.

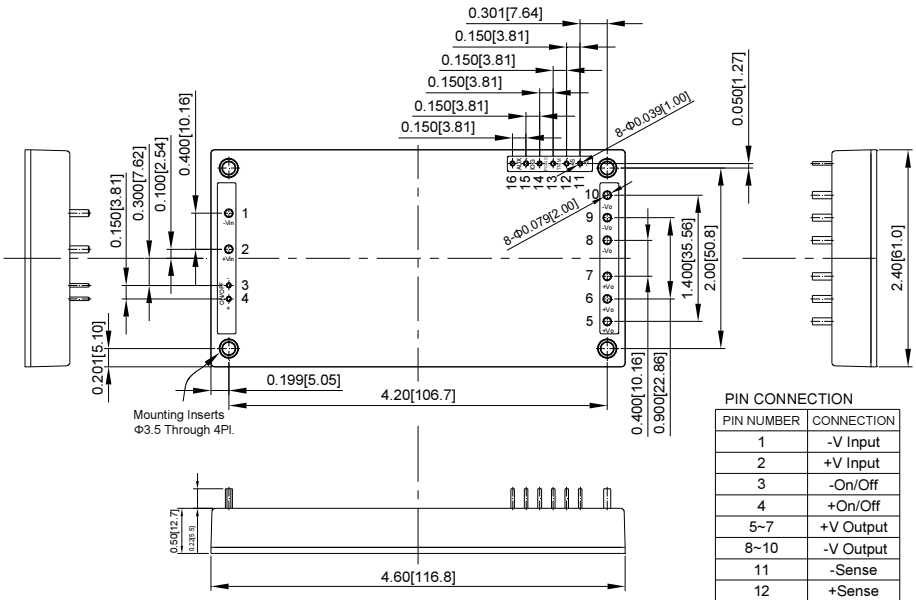
GENRAL SPECIFICATIONS:

Efficiency ..... See Table
Isolation Voltage ..... Input/Output ..... 3000VAC min.
Input/Case ..... 2500VAC min.
Output/Case ..... 500VAC min.
Isolation Resistance ..... 10^7 Ohm min.
Switching Frequency ..... 200KHz typ.
Operating Case Temperature ..... -40℃ to 100°C
Storage Temperature ..... -55℃ to +105°C
Thermal Shutdown, Case Temp. ..... 105°C typ.
Humidity ..... 95% RH max. Non Condensing
MTBF ..... MIL-HDBK-217F, GB, 25℃, Full Load ..... 420Khrs typ.
Dimensions ..... 4.60×2.40 x0.50 inches (116.8x61.0x12.7 mm)
Case Material ..... Aluminum Baseplate with Plastic Case
Weight ..... 230g typ.

NOTE:

1. Measured from high line to low line.
2. Measured from full load to zero load.
3. Output ripple and noise measured with min. capacitor 470uF and 1uF ceramic capacitor across output.
4. The output adjustment circuit and trim equations show as figure1 and figure2.
5. Logic compatibility ..... open collector refer to -Vin
   Module on ..... >3.5Vdc to 75Vdc or Open Circuit
   Module off ..... 0 to <1.2Vdc
6. Suffix "N" to the model number with negative logic remote on/off
   Module on ..... 0 to <1.2Vdc
   Module off ..... >3.5Vdc to 75Vdc or open circuit
7. An external input capacitor 330uF for all models are recommended to reduce input ripple voltage.

FB Dimensions:



All Dimensions in Inches[mm] Pin
Tolerance Inches:x.xx=±0.02 , x.xxx=±0.01 ±0.0.04
Millimeters:x.x=±0.5 , x.xx=±0.25 ±0.1

PIN CONNECTION

PIN NUMBER	CONNECTION
1	-V Input
2	+V Input
3	-On/Off
4	+On/Off
5~7	+V Output
8~10	-V Output
11	-Sense
12	+Sense
13	TRIM
14	PC
15	IOG
16	AUX

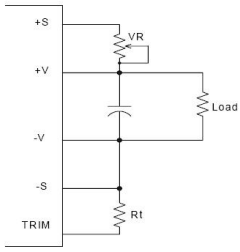


Figure1 The schematic of output voltage adjusted by using external resistor and/or variable resistor.

The output voltage can be determined by below equations:

$$Vf = \frac{1.24 \times (\frac{Rt \times 33}{Rt + 33})}{7.68 + \frac{Rt \times 33}{Rt + 33}}$$

$$Vout = (Vo + VR) \times Vf$$

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

Output Voltage = TRIM Terminal Voltage * Nominal Output Voltage

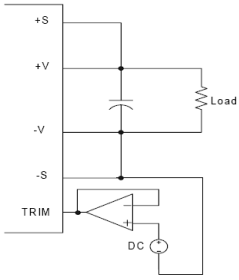


Figure 2 The schematic of output voltage adjusted by using external DC voltage.

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