



CFB600 SERIES

600 TO 700 WATTS 2:1 INPUT DC-DC CONVERTERS



FEATURES

- * 600-700W Isolated Output
- * Efficiency to 92%
- * Fixed Switching Frequency
- * Input Under-Voltage Protection
- * Over Temperature Protection
- * Over Voltage/Current Protection
- * Remote On/Off
- * Industry Full-Brick Package
- * Fully Isolated 1500VDC
- * IEC/EN/UL 62368-1 Approval



MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT		INPUT CURRENT		% EFF.	CAPACITOR LOAD MAX.
			MIN.	MAX.	NO LOAD	FULL LOAD		
CFB600-24S12	18-36 VDC	12 VDC	0 mA	50 A	150 mA	28.09 A	88	10000µF ⁽²⁾
CFB600-24S24	18-36 VDC	24 VDC	0 mA	25 A	150 mA	27.78 A	89	5000µF ⁽²⁾
CFB600-24S28	18-36 VDC	28 VDC	0 mA	21.5 A	150 mA	27.87 A	90	5000µF ⁽²⁾
CFB600-24S32	18-36 VDC	32 VDC	0 mA	19 A	150 mA	27.84 A	91	70000µF ⁽²⁾
CFB600-24S48	18-36 VDC	48 VDC	0 mA	12.5 A	200 mA	27.47 A	91	5000µF ⁽²⁾
CFB600-48S12	36-75 VDC	12 VDC	0 mA	50 A	90 mA	13.89 A	90	10000µF ⁽²⁾
CFB600-48S24	36-75 VDC	24 VDC	0 mA	25 A	100 mA	13.59 A	92	5000µF ⁽²⁾
CFB700-48S28	36-75 VDC	28 VDC	0 mA	25 A	105 mA	16.03 A	91	5000µF ⁽²⁾
CFB600-48S32	36-75 VDC	32 VDC	0 mA	19 A	90 mA	13.77 A	92	5000µF ⁽²⁾
CFB600-48S48	36-75 VDC	48 VDC	0 mA	12.5 A	130 mA	13.59 A	92	5000µF ⁽²⁾

NOTE:

1. Nominal Input Voltage 24, 48 VDC
2. The Output Terminal of All Models Required a Minimum Capacitor 470uF to Maintain Specified Regulation.

SPECIFICATIONS

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

INPUT SPECIFICATIONS:

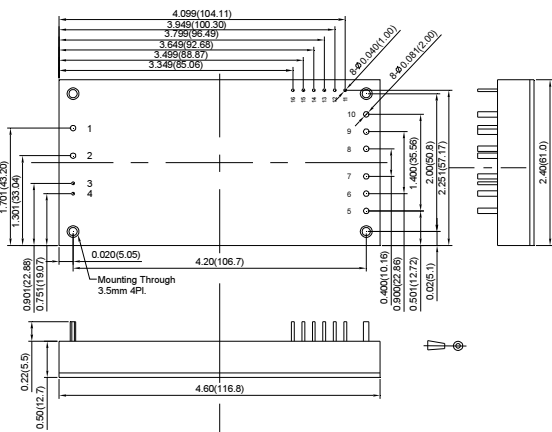
Input Voltage Range.....	24V	18-36V
	48V	36-75V
Input Surge Voltage (100ms max.)	24V	50Vdc max.
	48V	100Vdc max.
Under voltage lockout	24Vin power up	17V
	24Vin power down	16V
	48Vin power up	35V
	48Vin power down	33V
Input over voltage protection ...	24Vin turn off	40V, turn on 38V
	48Vin turn off	80V, turn on 77V
Opto Isolated Remote On/Off (note6)		
Input Filter		PI Type

OUTPUT SPECIFICATIONS:

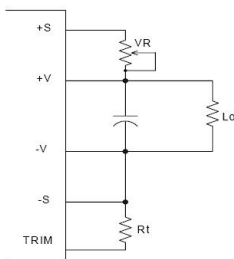
Voltage Accuracy	±1.0% max.
Transient Response:25% Step Load Change	<500us
External Trim Adj. Range	60-110%
Load share Accuracy	±10% at 50% to 100% Full Load
Auxiliary output voltage/current	10±3Vdc/20mA max.
Ripple & Noise, 20MHz BW	
12V	60mV RMS max., 120mV pk-pk max.
24V	100mV RMS max., 240mV pk-pk max.
28V	100mV RMS max., 280mV pk-pk max.
32V	120mV RMS max., 320mV pk-pk max.
48V	200mV RMS max., 480mV pk-pk max.
Temperature Coefficient	±0.03%/°C max.
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	110%-150% Nominal Output
Start up Time	160ms typ.

CASE FB

All Dimensions In Inches(mm) Pin DIA
 Tolerances Inches: .XX±0.02 .XXX±0.010 ±0.004
 Millimeters: .X±0.5 .XX±0.25 ±0.1



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



The output voltage can be determined by below equations:

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

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

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

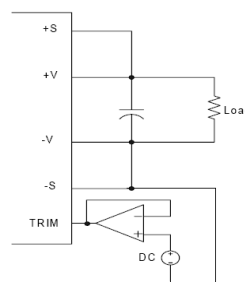
Fig.1 The schematic of output voltage adjusted by using external resistor and/or variable resistor.

GENRAL SPECIFICATIONS:

Efficiency	See Table
Isolation Voltage	Input/Output, Input/Case, Output/Case 1500VDC min.
Isolation Resistance	10 ⁷ ohm min.
Isolation Capacitance	4000pF typ.
Switching Frequency	48S12&48S28&48S32 300KHz typ.
	Others 250KHz typ.
Operating Case Temperature	-40°C to 100°C
Storage Temperature	-55°C to +105°C
Thermal Shutdown, Case Temp.	110°C typ.
Humidity	95% RH max. Non Condensing
MTBF	MIL-HDBK-217F, GB, 25°C, Full Load 450Khrs typ.
Dimensions	4.60×2.40×0.50 Inches(116.8×61.0×12.7 mm)
Case Material	Aluminum Baseplate with Plastic Case
Weight	220g

NOTE:

1. Measured from high line to low line.
2. Measured from full load to zero load.
3. Output ripple and noise measured with 10uF tantalum and 1uF ceramic capacitor across output.
4. The output adjustment circuit and trim equations show as figure1 and figure2.
5. An external input capacitor 1000uF for CFB600-24S32, 220uF for other models are recommended to reduce input ripple voltage.
6. Standard model is negative logic, suffix "P" to the model number with positive logic. (refer application note)
7. If the remote sense feature is not to be used, the +sense pin should be connected to the +Vout pin and the -sense pin should be connected to the -Vout pin. (refer application note Item 6.9)



Output Voltage = TRIM Terminal Voltage * Nominal Output Voltage

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